Online career guidance games for pupils aged 12-14

C-Game project, O1-1.4

Prague, June 2020
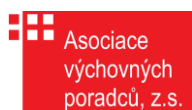
Contents

1   Introduction

This document is part of the Output_O1 of the C-Game project which aim is to develop a C-Game: CAREER GUIDANCE GAME IN A CITY FULL OF OCCUPATIONS. C-Game will be a new serious game providing pupils aged 12-14 with a fun tool of career orientation based on the gradual learning on different professions in five language versions (English, Czech, Slovak, Greek, and Bulgarian) and four countries (Czech Republic, Slovakia, Greece, and Bulgaria).

C-Game offers pupils the opportunity to get acquainted in an entertaining way with approximately 600 occupations, which would broaden their overview of the labour market, the necessary skills for the performance of occupations pursued, and stimulate them to thinking about their future careers and the educational path leading to it. C-Game is based on the assumption that getting to know the world of work in school age contributes significantly in shaping children's future career and professional identity, and that the most effective means to do so is a fun game.

C-Game is not designed as a substitute of career guidance, but it helps students in their professional orientation through play, broadening horizons of employment and thus influences their future career decisions.

2   Online career guidance games – the inspiration for C-Game

Aim of this document was to collect available online career games (min. 6, regardless of language versions) for pupils aged 12-14 with short description aiming to pinpoint inspirational approaches usable for creating the C-Game as well as specification of their possible use in conclusions.

There is a relatively large number of online sources that can be considered more or less as games related to career guidance. We certainly succeeded to find most of available career guidance games in English and partner languages; nevertheless we failed to find such games in other languages. It is really very difficult to find the right words for search engines if you have no idea how to name what you are looking for. The most successful phrase was not "career guidance game", but words like "plan", "exploration", "investigation", "city" in combination with words like "career", "job", "occupation", "guidance", "counselling", "future", etc.

This document does not contain everything we researched during the desktop research. It contains only the sources which we had chance to try, understand how it works, and finally supposed to have at least a small inspirational potential. During the search for the career

guidance games on the Internet, it happened several times that the previously found pages were inoperative after some time, so we deleted them from the document content.

It should be added that we deliberately looked for career guidance games in particular and not for strategy games that offer players building cities of various forms and stories. There are probably quite a lot of such games online. Some of these games are designed for single player, others in multiplayer mode; some are free, others are charged; some are for PC, others for mobile devices only; some are online, others offline; etc. Exploring these games would be too expensive and time consuming, and exploring them was not our goal. Nevertheless, we included two in 7th chapter.

In the following chapters, we focus on a total of 20 web applications (Figure 1) which we consider at least in some detail interesting, and as well suitable for consideration and inspiration. 9 of these websites state as their country origin the USA, 2 Great Britain, 2 Canada, 2 the Czech Republic. The rest are from Slovakia (1), Germany (1), Italy (1), Poland (1), and the Netherlands (1).

15 from 20 examined web applications are available in English (75 %), 3 in Czech (15 %), 2 in Slovak (10 %), and 1 in Greek (5 %). 8 of the web applications are available also in other languages ranging from 1 to 14 (SimCity). 14 of web applications are available only in one language from which 10 are in English (Career Locker, Paws in Jobland, Learn English Kids, Jobs that care, Career Quest, Claim your future, JA Plan your future, JA Build your future, Career by Kongregate, Balance Careers), 2 in Czech (Můj život po škole – My life after school, Profitest infoabsolvent), 1 in German (Berufe Universum – Universe of professions), and 1 in Slovak (KomposyT: Semafor – Traffic lights).

Figure 1: Web applications´ country of origin

Chapter No	Application name	Country								
		USA	Canada	UK	CZ	IT	NL	SK	PL	DE
3	**Career games in a city**									
3.1	Mapa Karier								1	
3.2	Career Locker	1								
3.3	Paws in Jobland		1							
4	**Career games**									
4.1	The Real Game		1							
4.2	Learn English Kids			1						
4.3	Jobs that care			1						
4.4	Career Quest	1								
5	**Games to plan future career based on living costs**									
5.1	Claim your future	1								
5.2	Můj život po škole – My life after school				1					
5.3	JA Plan your future	1								
5.4	JA Build your future	1								

Chapter No	Application name	Country								
		USA	Canada	UK	CZ	IT	NL	SK	PL	DE
5.5	Career by Kongregate	1								
6	**Game-like self-assessment**									
6.1	Berufe Universum – Universe of professions									1
6.2	KomposyT: Semafor – Traffic lights							1		
6.3	Profitest infoabsolvent				1					
6.4	Career aptitude test						1			
7	**Strategic and development games**									
7.1	SimCity	1								
7.2	Venture Towns	1								
8	**Other online career guidance activities**									
8.1	Balance Careers	1								
8.2	Job Labyrinth					1				
	Total	**9**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**

15 of the examined web applications are available free of charge.

Games have been divided into 6 groups, according to the 20 web applications´ context:

1) Career games in a city (Chapter 3)
This chapter was intended to be essential for gaining ideas and inspiration for C-Game development. It contains 3 games, one of which is from Poland, one from the USA, and one from Canada. Games´ scenarios aim to acquaint players with different types of professions and takes place inside a virtual city.

2) Career games (Chapter 4)
This chapter focuses on career guidance games, i.e. games that guide players to learn about different occupations through different gaming activities, offering both entertainment and job market information. There are 4 games from which 2 are from Great Britain, 1 from Canada, and 1 from USA.

3) Games to plan future career based on living costs (Chapter 5)
In this chapter, there are 5 games that look at orientation in different occupations in terms of living income and costs. Origin of 4 games is in USA and 1 in Czech Republic. The games are equipped with a database of average earnings of various occupations, prices of possible accommodation, use of transport, levels of food, entertainment, etc. They lead users to realize that everything we expect from life has a price and it is necessary to earn money from it.

4) Game-like self-assessment (Chapter 6)

In this chapter, there are web applications that are not basically games, but could be useful in the design of a C-Game, because there should be some self-assessment of interests during the game. There are 4 games, one from Germany, one from Slovakia, one from the Czech Republic, and one from the Netherlands.

5) Strategic and development games (Chapter 8)

In this chapter, two examples of strategy games were selected which aim is to build a well-functioning city. The origin of both games is the USA.

6) Other online career guidance activities (Chapter 7)

This chapter contains one game and one source of information that does not fit to above mentioned chapters. The Italian game Job Labyrinth is a video game in which the player is given various tasks related to an overview of active employment policies and finding a job in the labour market. The intention of C-Game does not work with these topics. On the contrary, an inspiring elaboration of an overview of the work of individual professions was found in the Balance Career information source.

3 Career games in a city

3.1 Mapa Karier

Country: Poland
Language: PL
Availability: Online, free of charge
Webpages: https://mapakarier.org/city

The Mapa Karier is an interactive map of the virtual city (Picture 1) aiming to acquaint students with a wide range of occupations. The appearance of buildings is indicated by the company / institution branch located in the given building. Occupational icons are presented in both female and male images. Each profession is then specified with:
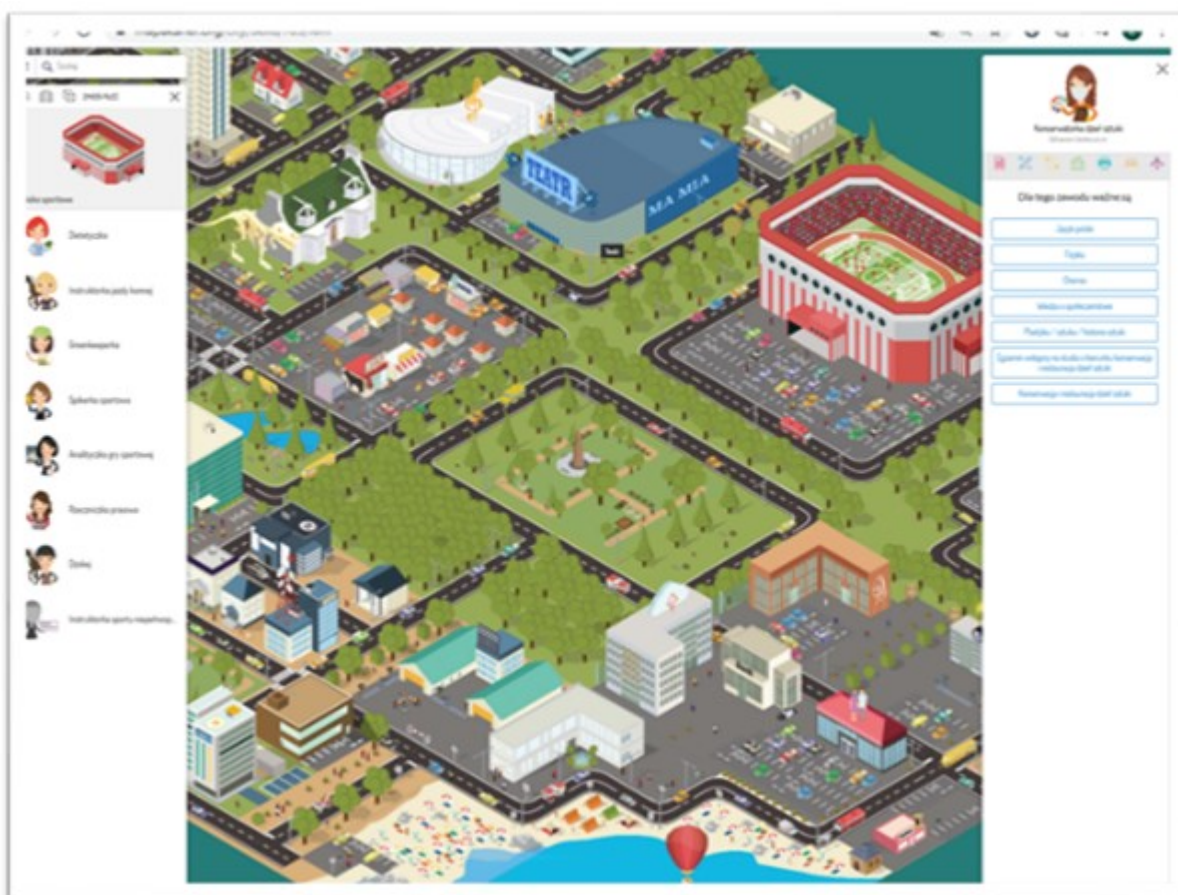- description of the profession
- the skills needed to pursue the profession
- a typical educational path
- labour market statistics
- an overview of similar occupations

In Picture 1 are seen for example buildings of natural museum, philharmonia, theatre, sports field, film production studio, security agency, market place, etc.

For the needs of development of the C-Game database of occupations we laboriously selected from the Mapa Karier all its occupations and buildings in which the occupations are placed. There are 583 occupations in 159 buildings.[1] The resulting list of occupations and the buildings in which the occupations are located will serve as a reference point (Annex 1 in Czech language).

The student also has the opportunity to call his teacher to join. How the teacher connects is not described.

Picture 1: Virtual city Mapa Karier

> ➤ **Comments**

The map is graphically very nicely processed and visually attractive. Occupations are described in plain language. The descriptions are structured (Why do I like this profession? What he/she does?), and for pupils quite long. The skills are presented in a simple form with the possibility of further information and with an indication of the educational institution where these skills can be acquired. Each profession also has an example of possible educational paths towards given occupation.

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[1] Situation at 27.5.2020. The portal is constantly being worked on, the number of occupations is increasing and occupations´ details enriching.

Mapa Karier is equipped with an elaborate database that allows for individual occupations to provide statistics on the Polish labour market (data on employee demand, job offers, and average earnings of the professional groups). C-Game project team does not have access to such a database and therefore cannot enter this information into C-Game.

In our opinion, it is a pity that such a nicely graphically designed game with a lot of information does not contain any game elements, has no ambition to encourage students to get "rewards" for obtaining information, and lacks fun and entertaining elements.

➢ **Possible inspiration**

This game is for us very inspiring in graphic processing of the appearance of the city, the way of presentation of individual occupations, the possibility to choose employee´s gender, the breadth of information about individual occupations, the list of occupations and buildings (Annex 1), the inter connection of professional groups, etc. All of that is certainly highly inspiring.

We can build a game in which the players can wander around a town and see a different building which represents the occupation. In each building, the player can play a mini quiz (related to the occupation represented in the buildings) and gain prizes to unlock other buildings' activities.

3.2 Career Locker

Country: USA
Language: EN
Availability: Online, charged
Webpages: https://careerlocker.wisc.edu/Products/Elementary

CareerLocker is an Internet-based career development program developed by the Centre on Education and Work in Wisconsin. It has 8 different entrances:
- Elementary School Website
- Middle School Website
- High School Website
- Adult Website
- Elementary Curriculum
- Intermediate Curriculum
- High School Curriculum
- Peterson's Practice Tests

Elementary school website helps pupils aged 10-14 to learn about 16 national Career Clusters™ and explore over 1.100 occupations and their descriptions.

CareerLocker offers 5 activities (Picture 2):

- Visit Career Clusters (Picture 3) - groups of occupations within the same industry that share knowledge, skills, and work environments.
- Discover Occupation,
- Career Explorer Game,
- My Town Game
- ePortfolio.

Picture 2: CareerLocker introductory page

Picture 3: Career Clusters

CareerLocker for elementary schools gives pupils the opportunity to:

- Visit a colourful and interactive landscape of the 16 national Career Clusters™
- Meet a Virtual Ambassador from each of the clusters (Picture 4)
- Watch and listen to a slideshow about the job responsibilities and training needed for each occupation (Picture 5)
- Create an avatar (Picture 6)
- Save information about their skills, interests & values, achievements, activities, and favourites to their ePortfolios (Picture 7)
- Learn about the relative salary and some of the tools that are used in each occupation
- Play career exploration games

Picture 4: Virtual Ambassadors

Picture 5: Example of occupation description

Picture 6: Customized avatar

Picture 7: ePortfolio

➢ **Comments**

We did not have the opportunity to enter any of two CareerLocker games (Career Explorer Game, My Town Game) because their entry is charged. Nowhere on the internet was not information nor pictures of the city in which My Town Game is played. However, according to the available description, CareerLocker is very similar in scope and focus to the game we intend to develop. The advantage of CareerLocker is its connection with the national register of occupations and educational opportunities.

➢ **Possible inspiration**

Possible inspiration can be found in all the above pictures except for the colour combinations, which we would choose a little less pronounced. The avatar is decent, and appears on most screens. The presentation of Career Clusters is also very imaginative. We consider the "ambassador" job, which provides the CREATIVE JOBS information offered in every Career Cluster, to be a good and useful idea. The presentation of individual occupations with photography is also useful, but our project budget does not include costs for it. The ePortfolio in which the pupils can get an overview of their skills, interests and values, activities and favourite subjects, and can be shared with a school counsellor, is also inspiring.

3.3 Paws in Jobland

Country: Canada
Language: EN
Availability: Online, charged
Webpages: https://www.xap.com/paws/
   http://paws.cascaid.co.uk/pdf/about.pdf

Paws in Jobland is an easy-to-use internet tool designed to introduce children aged 7 to 11 to the world of work. Children are helped to find their way around by Paws the dog, a friendly character that provides a helpful guide to exploring the program. Picture 8 shows example of the first assignment. The dog says "I like this game. Open a drawer to find a question, and then point to the answer you want. If you´re right you get a part of the picture puzzle. If you pick a wrong one by mistake there is a prompt "it´s ok, you can try again." Picture 9 shows the task.

Picture 8: Assignment example

Picture 9: Task example
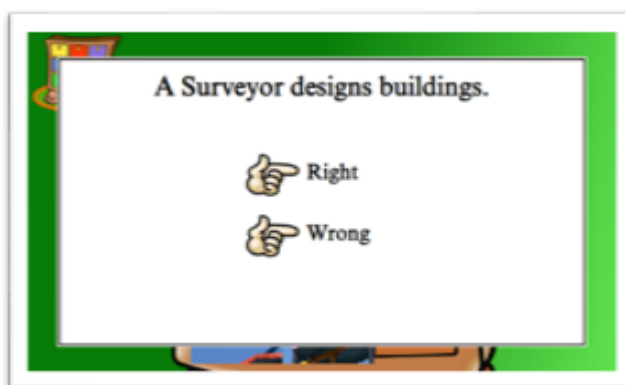
Children can explore 21 job areas and find out about 118 jobs, and places such as shops, building site, port, hotel, armed forces, office, airport, railway station, hospital, TV station, workshop, etc. Each place contains a number of people who talk to the children about the job that they do.

In addition to exploring Jobland, children can use other sections of the program, including:
- **Jobfinder**. Children answer questions about their likes and dislikes and are shown the areas of Jobland where they may like to work in the future.
- **ABC Search**. Children can search for information on jobs that they might have heard about.
- **Quiz.** Children can learn more about jobs and play a picture puzzle game.

Paws in Jobland helps teachers to deliver many elements of the Key Stage 2 Curriculum in a range of subjects, including English, Mathematics, ICT, Design and Technology, Art and Design, Citizenship, PSHE and Geography.

Teachers can use the accompanying set of worksheets and teacher's notes to deliver interesting lessons where pupils use Paws in Jobland to help them complete a range of activities which also support Cross-curriculum themes including Creativity, Key Skills and Thinking Skills.

➢ **Comments**

The game Paws in Jobland is devoted for younger children than is C-Game target group. Game tasks are therefore quite simple and easy to do.

➢ **Possible inspiration**

Possible inspiration can be **the guide** which in Paws in Jobland is the dog. We can build a game that will have a **parrot** as the guide. The parrot can fly around the town and land in different buildings. In each of the buildings, the parrot can do some quests to understand the occupations that are working there.

4   Career games

4.1   The Real Game

Country: Canada
Language: EN, NL, HU, FR, GE, DE, EL
Availability: Online, charged
Webpages: https://www.realgame.com/
                    http://www.realgame.co.uk/content/1186564342.590/
                    https://www.lifework.ca/lifework/affiliates.html

The Real Game was originally developed in 1994 by Bill Barry, a Canadian teacher whose 12-year-old daughter felt the subjects she was studying at school were not relevant to her future life. This inspired Bill to create a career and life skills education programme that would help students see the connection between school studies and adult life beyond school.

Over time, The Real Game became a series of 5 programs for students aged 8 to 18 years and 1 for adults (Picture 10). Individual programs have been successfully adapted in the United States, the United Kingdom, France, Australia, New Zealand, the Netherlands, Denmark, Hungary, Germany, and Ireland, and are now used in over 50,000 classrooms globally. The programs all include role-playing scenarios, and are designed for group work in the classroom. They have been very well received by teachers and students, who find them

easy-to-use, engaging, informative and effective at increasing students' understanding of the world of work, and their future roles in it.

The Real Game for 12-14 aged pupils (Picture 11) gives the youngsters the opportunity to explore adult realities such as taxes, lining expenses, workplace environments and unexpected emergencies. Students role-play adults in randomly assigned occupational roles and see how schoolwork relates to occupational choices and, therefore, to lifestyle and income. Delving deeper into their roles, students learn how to budget time and money and see the value of a balanced lifestyle, community involvement and lifelong learning. An exciting transition scenario illustrates the importance of adaptability and introduces the concept of transferable skills. By the end of The Real Game, students realize that satisfaction in work is a priority issue in life and that it is an outcome that they can achieve by making the choices that are right for them.[2]

Picture 10: The Real Game series

Picture 11: The Real Game for 12-14 aged pupils

> **Comments**

Each of the Real Game games is a complex game designed to be unit by unit taught with target group inside the class. We had no access to the online version to test it and from available information we are not able to distinguish its functionalities.

> **Possible inspiration**

Inspirational on the Real Game is the integrity of the content, which has a given story that allows the teacher or career counselor to work with the class team, while each game participant has their own role, which is gradually developed and fulfills certain tasks.

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[2]   Source: https://www.lifework.ca/TRG1.pdf

4.2   Learn English Kids

Country: United Kingdom
Language: EN
Availability: Online, free of charge
Webpages: https://learnenglishkids.britishcouncil.org/word-games/jobs-1

Lear English Kids is a word game intended for younger children to learn English about the titles of jobs (Picture 12). The task is to match the word to the picture.

Picture 12: Three screens of the word game jobs-1
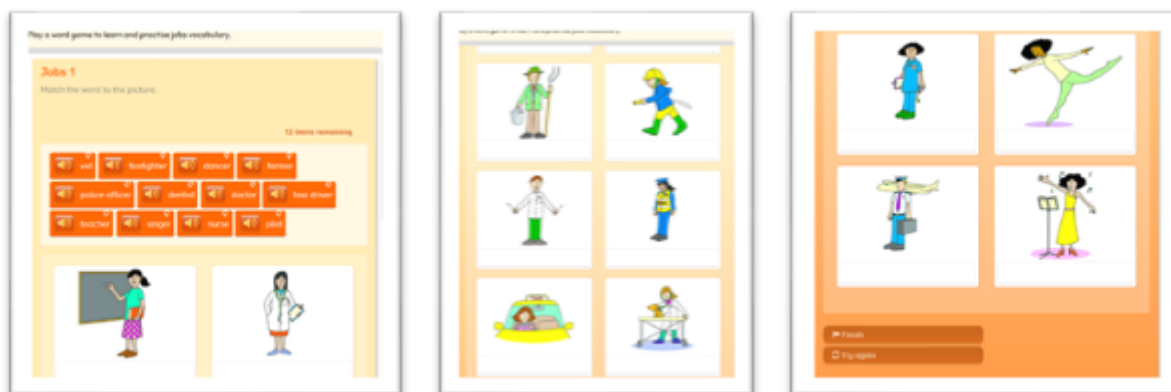
➢   **Comments**

It a very simple game for small kids.

➢   **Possible inspiration**

Perhaps it would not be out of place to enrich the C-Game with a similar game intended for smaller children, which would thus attract to the exploration of the city and the profession in it.

4.3   Jobs that care

Country: United Kingdom
Language: EN
Availability: Online, free of charge
Webpages: http://www.jobsthatcare.co.uk/

Jobs that care is a quiz for those that would like to be employed in health and social care services. The game is designed to help increase the number of young people that seek employment in health and social care. Knowledge of Health and Social Care is tested. It is available also as online app.

The introductory screen (Picture 13) looks like the game is happening in the city which is not true. It is only a genre image that is not inside the game. The quiz has quite simple rules (Picture 14), questions (Picture 15), game plan (Picture 16), as well as simple ending page (Picture 17).

The rules: It´s your first day of your new job and you are keen to get to work on time. Navigate the fastest route to work and arrive early to make a good first impression? You are on the bus. Click on a blue spot to begin your journey. Answer the question. The timer stops while you answer. Correct answer: select your next step on the path. Incorrect answer: try again with new question.
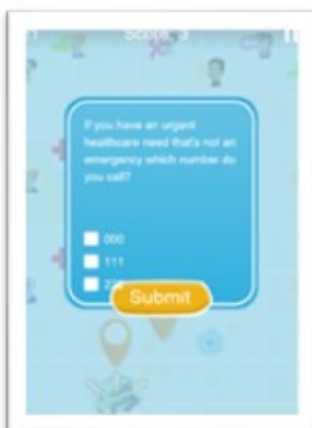
Picture 13: Introductory screen JobsThatCare – the city with health and care
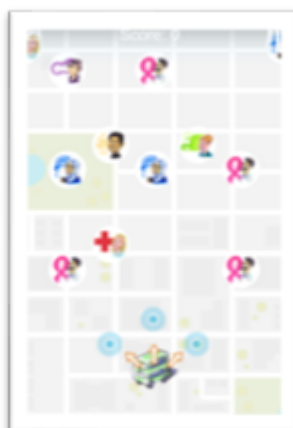
Picture 14: JobsThatCare rules
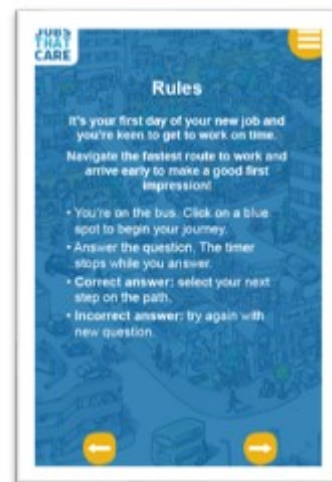
Picture 15: Example of questions

Picture 16: Example of selection of questions

Picture 17: JobsThatCare last page

➢ **Comments**

This is a knowledge quiz from one professional area.

> ➢ **Possible inspiration**

We included this application as inspiring due to the image of the city from the home screen. According to our graphic designer, however, it would be very difficult to paint in vectors whole C-Game city with all the necessary buildings, roads, cars, buses, greenery, parks, etc.

Within the C-Game it is also possible to give the user similar task as in "Jobs that care" to imagine that he/she is about to start work on the first day in new job and to be able to specify job´s requirements and duties to make a good first impression.

4.4 Career Quest

Country: USA
Language: EN
Availability: Online, free of charge
Webpages: http://j.whyville.net/smmk/fortune/outside
                    http://j.whyville.net/smmk/fortune/hex

CareerQuest™ is a free Serious Game designed to help students ages 8 to 15 expand their awareness of possible future careers. It enables students to get through career exploration of 555 different occupations within areas ranging from Performing Arts to Medical Technologies. The occupations are divided into 6 career clusters (Picture 18) which are then further subdivided into Career Areas.

There are 26 Career Areas in total. A Career Area consists of occupations that do similar work tasks. For example, actors and fashion models are in the same Career Area because these occupations share similar tasks. When you drill down to an occupation while playing CareerQuest, you'll see that it's grouped together with similar occupations. The 26 Career Areas are organized into 6 Career Clusters, depending on how the Career Area broadly relates to working with data, ideas, people, or things.

Picture 18: CareerQuest introductory screen

Picture 19: Adjust your avatar (guest-7893)

First task is to change appearance of the avatar (Picture 19) and enter to the game. The tasks are given in the box under "Current Quest" (Picture 20). First is assignment of occupation to one of the six Career Clusters:

- Administration and sales
- Arts
- Business operations
- Science and technology
- Social services
- Technical

Picture 20: Current Quest

Picture 21: Selection of the Career Cluster – "cold"

The answer whether the assignment was successful should be "cold", "warm", "hot" (Pictures 21 "COLD", 22 "HOT"). Nevertheless of correctness of the answer, the user can enter to the Career Area and select an occupation (Picture 23) and read its description (Picture 24).

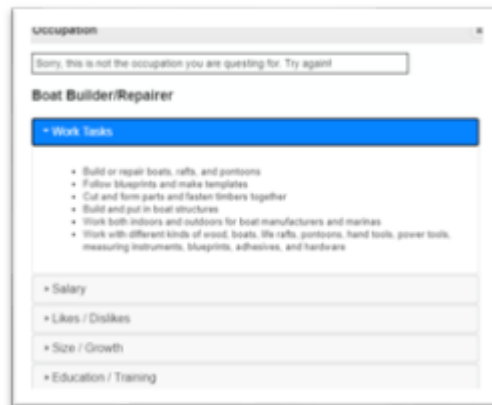**Picture 22: Selection of the Career Cluster – "hot"**

Picture 23: List of occupations under Career Area "Construction & Maintenance"

Each of occupations is described in 5 parts (Picture 24):
- Work tasks
- Salary
- Likes / dislikes
- Size / Growth
- Education / Training

➤ **Comments**

Career Quest is a serious game that aims to inform users about which professions focus on working with people, data, ideas and things. The user learns to estimate Career Clusters and Career Areas of randomly selected occupations. The game is equipped with a database with descriptions of occupations, average wages, position of occupations in the labour market, etc.

➤ **Possible inspiration**

We discussed the C-Game city design possibilities and we can take inspiration from the Whyville map (the portal of which the Career Quest is a part). In the initial phase, it is possible to think that the city would be grey (Picture 25). Gradually, as the student builds the buildings and places the relevant professions in them, the buildings will be coloured (Picture 26). In the same way, elements such as roads and greenery could be coloured after reaching a certain goal (Picture 27).

Picture 25: Whyville grey map
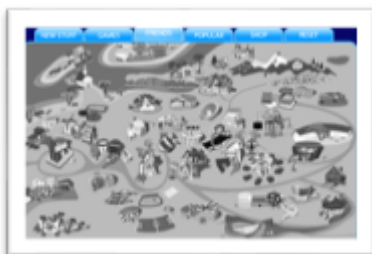
Picture 26: Whyville partly coloured map

Picture 27: Whyville fully coloured map

For the C-game we will create a database of occupations with their description, and it would only be a matter of sufficient financial resources for programming to create, in addition to the city, a similar serious game for classifying occupations into Career Clusters and/or Career Areas.

It could be considered option to let the player modify player´s avatar (gender, shape and colour of hairs, style and colour of dress, colour of eyes, etc.).

In this game, the match mark of the answer is "COLD" - the answer is wrong, "WARM" - the answer is within reach, "HOT" - the answer is correct.

5 Games to plan future career based on living costs

5.1 Claim your future

Country:	USA
Language:	EN
Availability:	Online, free of charge
Webpages:	https://fame.claimyourfuture.com/

The USA game was created by the Finance Authority of Maine. Claim Your Future® is a game that encourages students to explore education after high school, future careers, and money management. It can be played using the hand held game kit, or online. The program is flexible and can be played with a wide range of audiences from elementary-age students, through middle school, high school and beyond. It can be utilized as a one-time classroom activity, after school activity, or can be used in career guidance.

Through the site, students are able to choose a career and navigate through different spending choices. The game offers:
-   125 unique career options, including descriptions and key vocabulary
-   A printable budget worksheet
-   Additional financial education resources
-   An Educator's Guide, which includes budget worksheets, a detailed lesson plan, and homework activities for students.

Picture 29 shows the entrance to the game after a very simple registration and obtaining a code (Picture 28) and game instructions (Picture 29). First task is to choose an occupation and the system show average yearly income.

Picture 28: Claim your future entrance screen

Picture 29: Game code and instructions

In pictures 30 and 31 are possibilities to choose housing and food. Accordingly to the chosen level the system calculates the rest of money.

Picture 30: Chose your level of housing

Picture 31: Choose your level of food

When playing the game in the classroom, students are each assigned a unique Claim Your Future game wheel, representing a specific career, college degree, and monthly income. Educators are encouraged to discuss various career and college options and lead students through a monthly budget activity.

Through the game, students are guided to understand the strong connection between the choices they make today and their opportunities in the future. They also learn that higher education leads to more career options and higher-paying jobs.

➤ **Comments**

The game offers a very simple tool for gaining basic financial literacy and orientation in the average wages of various professions. The economic model is simple and well developed. The game can be used by both students and adults.

Although this game has a different goal than the C-Game, we can take inspiration from its way how the registration is done, simple economic model, teachers guide with detailed lesson plan, and homework activities for students.

5.2   Můj život po škole – My life after school

Country: Czech Republic
Language: CZ
Availability: Online, free of charge
Webpages: https://www.mujzivotposkole.cz/

The Czech My life after the school (Můj život po škole) took inspiration from USA game Claim your future. The game begins with player´s decision of way how to choose an occupation. The first two options are for those that have an idea on future job. Third is for undecided ones (Picture 32) who have to choose 5 of 26 job characteristics (Picture 33).

Picture 32: How do you like to choose your occupation?   Picture 33: Which is your dream job?

The system recommends several occupations (Picture 35) resulting from matching the choice of job characteristics with occupations´ description. For already decided groups of occupations are presented (Picture 34). After selection of one group the list of occupation shows in the same form (Picture 34). Infographics are available for the selected profession (Picture 36).

Picture 34: How do you like to choose your occupation?
Picture 35: Which is your dream job?
Picture 36: Selected occupation infographics

User can choose one of the 176 occupations and then selects level of life costs like accommodation (with parents, alone, sharing room), travel, food, clothes etc. In system there are average salaries and it calculates monthly spending and tells the user how much his/her costs of life are covered by the salary.

➢ **Comments**

The game is based on the game Claim your future. It is extended by the possibility of choosing a profession before entering the game.

➢ **Possible inspiration**

Possible inspiration can be in infographics are available for the selected profession. However, we have limitations in the databases for its elaboration, because we do not have data on the labour market and average wages, which form the basis of infographics.

We will use the game list of occupations (Annex 3) for checking the complexity of our future occupational database.

5.3 JA Plan your future

Country: USA
Language: EN
Availability: Online, free of charge
Webpages: http://educgames.ja.org/economics/

Junior Achievement Plan your future offers two modes of play – quick and regular (Picture 37). The second one offers first easy self-assessment of interest (Picture 38), and then to choose a personalised avatar. The introduction includes a challenge: *"Now that we know who you are, it´s time for you to become who you want to be. Your first decision is whether to stay in school, or drop out and start working right away."*

Picture 37: Plan your future first screen   Picture 38: Interest self-assessment

The self-assessment (Picture 38) contains 25 interests (Annex 2) distinguished by colour into 4 groups: people (green), things (red), ideas (yellow), data (blue). Some of the interests are two-coloured. Groups of interests are not evenly represented. The most numerous group is things (11,5), ideas (7,5), people (5), and the smallest group is data (1). The task is to move 7 interests to the picture of the "head".

First task is to consider two options – Find a Job or get High School Diploma (Picture 39). The game supposed that the player is 14 years old. When deciding for education a week schedule opens (Picture 40) where the player has to consider time for studying, leisure, internship, and part-time job. After a while the player is 3 years older (18 years), and if worked has also some money. The player has again to consider to find a job or to continue learning.

Picture 39: It is time to think about future

Picture 40: Virtual High School Schedule

When choosing learning after some while the player is 20 years old and the story continues. If choosing a job a budget appears with all living costs and income (Picture 41). Further the player has to choose level of housing (Picture 42), level of food, a car, and level of insurance. Then it is possible to click on several buildings in the city picture that offer jobs, goods, and entertainment.

Picture 41: Overview of living costs and income

Picture 42: Choose your level of food

➢ **Comments**

After playing several times and selecting another set of interests into the self-assessment tool, almost the same jobs have been offered. Likewise, almost the same jobs were offered after the studies regardless of completed education. The city is too small and does not offer various jobs. The economic model on which the game is based looks very simple.

➢ **Possible inspiration**

Self-assessment is done here very simply by moving the symbols of the "brains", which bear the names of different interests (Annex 2). Self-assessment is actually a mini-game which design is playful and fun. The division of interests into 4 groups is inspiring, but it is also possible to use the division into 6 groups according to RIASEC. In both cases, it is necessary to consider the number of interests in total as well as in each group so that the offer for

decision-making is balanced. For the same reason, it is appropriate to consider the interests´ number selected, because to conclude interest predominance from 7 interests seems to be not very convincing.

5.4   JA Build your future

Country: USA
Language: EN
Availability: Online, free of charge
Webpages: https://www.juniorachievement.org/s3/apps/ja-byf/#/career
                  https://play.google.com/store/apps/details?id=com.noggin.byf&hl=en

Junior Achievement Build Your Future™ (Picture 43) allows teens to explore more than 142 careers; see what levels of education are required for each of occupations - from no education to a doctorate; learn about potential income; and then calculate the cost of education, including factoring the cost of attending in-state, out-of-state public universities and private universities. Teens can then adjust the level of money they and their parents will contribute, combined with student loans they may need to secure. At the end of the exercise, teens are given a Return on Investment (ROI) score between 1 and 5. A score of 1 means it will be difficult to pay off the debt accrued based on future income; 5 mean they should have no problem paying off debt with estimated future income.

There are 5 tables: Career Choice (Picture 44), Education (Picture 45), Payment (Picture 46), Calculator (Picture 47), and Return of investment (Picture 48). Career Choice offers selection of 142 occupations with a photo, short description of working activity, education requirement, median salary, projected growth (2010-202), and related careers.

Picture 43: Build your future Introductory page   **Picture 44: Career Choice**

Next step is to fill in the Education (Picture 45) which leads to third step Payment (Picture 46).

Picture 45: Education

Picture 46: Payment

Filling in payment options (Picture 47) lead to ROI – Return on investment (Picture 48)

Picture 47: Calculator

Picture 48: Evaluate return on investments

➢ **Comments**

When working with schoolchildren, it is advisable to pay also attention to average salaries when choosing a profession in relation to the costs of living. Nevertheless, it is should not be the only measure in career choice. All 4 games should be taken only as information and to some extent fun not the only tool and way how to make a good career choice.
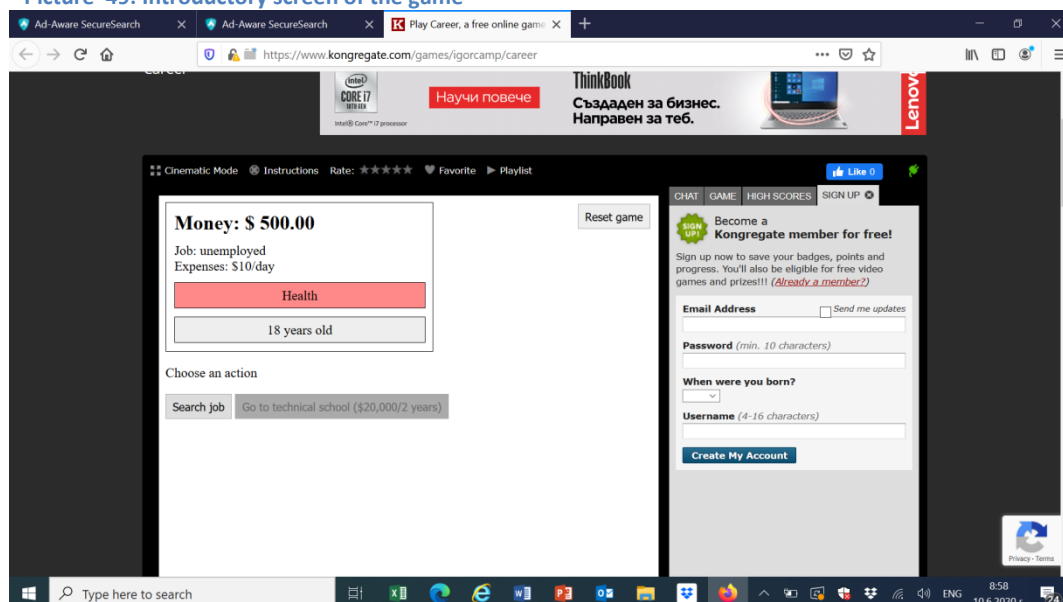
➢ **Possible inspiration**

It would also be appropriate to incorporate the average occupational salaries into C-Game, but this is not feasible. The main reasons are that the project did not take this into account, the data are probable not available for all partner countries in the same format, the data on average salaries need to be updated at least once a year, etc.

5.5 Career by Kongregate

Country: USA
Language: EN
Availability: Online, free of charge
Webpages: https://www.kongregate.com/games/igorcamp/career

Kongregate Inc. created a game (not finished) where a realistic life scenario is created (Picture 49). The player (user) starts with a wallet with 500$ and day expenses. According to the educational level different job position are offered with realistic to the American market salaries. There are upgrade education options which open new job positions with higher salaries.

Picture 49: Introductory screen of the game

➢ **Comments**

When working with schoolchildren, it is advisable to pay also attention to average salaries when choosing a profession in relation to the costs of living which are different in partner countries. Nevertheless, it is should not be the only measure in career choice. All games should be taken only as information and to some extent fun not the only tool and way how to make a good career choice.

➢ **Possible inspiration**

It would also be appropriate to incorporate the average occupational salaries into C-Game, but this is not feasible. The main reasons are that the project did not take this into account, the data are probable not available for all partner countries in the same format, the data on average salaries need to be updated at least once a year, etc.

6   Game-like self-assessment

6.1   Berufe Universum – Universe of occupations

Country: Germany, German Labour Office
Language: DE
Availability: Online, free of charge
Webpages: http://portal.berufe-universum.de/

The game Berufe Universum is intended for students in the last years of primary school. As the name suggests, the environment of the game is a universe in which there are almost 500 planets and it is possible to get a job on each of them. On this trip, students will learn:
-   which occupational fields and occupations suit their interests (self-assessment test),
-   for which professions they are particularly suitable,
-   in which professions they can land well.

Although the game seems to be dynamic with some kind of travelling throughout the universe, it is built on texts which presentation is static. The game is said to last at least 30 minutes. Pupils can print individual texts.

The BERUFE-Universum is a self-service program that is performed anonymously. Students are asked to insert their credentials (Picture 50) to enter the game which allows them to save their results and continue later. Identification of individual users and thus the assignment of stored data is not possible. However, this means that if the user has forgotten their login name or their password, they cannot be reset by the system. In this case, it is necessary to go through the program again from the beginning. After anonymous registration and the welcome page (Picture 51) follows self-assessment test of professional interests (picture 52) which leads to selection of occupations (Picture 53).

Picture 50: Registration form

Picture 51: Game welcome page

A self-assessment test of strengths (Picture 54) follows. Further step are several questions on behaviour related to job conditions (Picture 55).

Picture 54: Self-assessment of strengths   Picture 55: How do you behave

Next step is marking 3 school subjects (Picture 56) and then the overall results shows (Picture 57). It has a shape of universe part with several planets that represent individual occupations. The closer a planet is to the centre the better the occupation fits user's strengths.

Picture 56: School performance   Picture 57: Final report
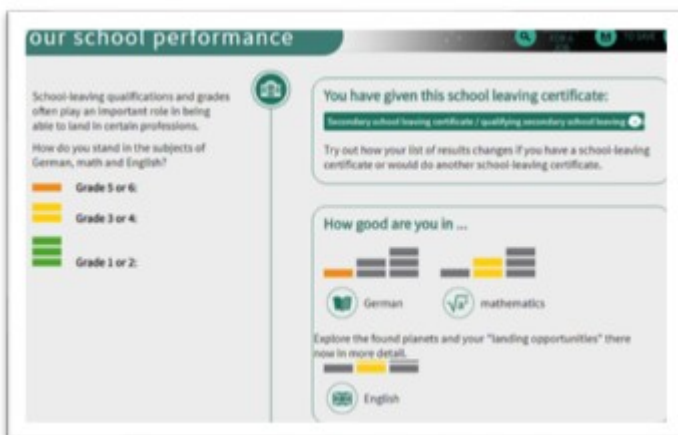
Information on age, gender, class level and social status is used exclusively for statistical purposes and the formation of standard groups within the "control group". Students are free to choose their credentials (login and password) to save their results and continue later. Identification of individual users and thus the assignment of stored data is not possible. However, this means that if the user does not know their login name or has forgotten their password, their login details cannot be reset by the system. In this case, it is necessary to go through the program again from the beginning.

If the program is run at school and the results are required to be printed, first name is required, which is printed on the document in PDF. The result lists are therefore "personalized", and user anonymity is respected (surname is not required).

> **Comments**

The game is handled very professionally and has good results in public employment services.

> **Possible inspiration**

We can take inspiration from the creative way of self-assessment and the anonymous registration.

6.2 KomposyT: Semafor – Traffic lights

Country: Slovakia
Language: SK, HU, Romany
Availability: Online, free of charge
Webpages: https://www.komposyt.sk/pre-ziakov/poradenske-hry/semafor/index.php?tlang=sk&size=big&age=16&gender=f&okres=9&skola=2&year=1&odbor=&intro=hidden

Traffic lights is an online questionnaire using three traffic light colours to answer (Picture 59):
-   Green - you agree with the statement, this activity is very important for you and you prefer it
-   Orange - This activity is moderately important to you
-   Red - you disagree, this activity has no meaning for you

After simple registration (Picture 58) are presented one by one 38 questions aimed to find out what type of career suits the user, personality type, work values and what occupations are most suitable for the user type. The questionnaire does not contain correct and incorrect answers. There is a statement that the questionnaire is anonymous, the data are processed

exclusively for research purposes of the Research Institute of Child Psychology and Pathopsychology in Bratislava.

Picture 58: SEMAFOR – registration screen   Picture 59: SEMAFOR – example of self-assessment question

> ➢ **Comments**

It is not a game but self-assessment questionnaire.

> ➢ **Possible inspiration**

Inspirational is the use of the traffic light.

6.3   Profitest infoabsolvent

Country: Czech Republic
Language: CZ
Availability: Online, free of charge
Webpages: https://www.infoabsolvent.cz/Profitest

Profitest is a test created for the population of pupils attending currently eighth and ninth grade of elementary schools. It is designed to help with career orientation.

It is a lengthy test with several parts:
- Completion of marks from 8 subjects (mathematics, mother tongue, foreign language, natural history, physics, chemistry, history, geography) (Picture 60)
- Test for memorizing the positions of digits in the table 8x8 (Picture 61)
- Test for completing number series
- Aptitude test
- Interest test

Profites is not a game but a set of self-assessment psychometric tests leading to career orientation.

➢ **Possible inspiration**

We can build a platform that will provide career guidance psychometric tests to the school children. In this way, it will be easier to identify and guide the kids to more suitable occupations.

6.4 Career aptitude test

Country:	Netherlands
Language:	NL, EN, DE, FR, ES
Availability:	Online, free of charge
Webpages:	https://www.123test.com/career-test/

Career aptitude test is self-assessment focused on job personality. It is based on Holland RIASEC codes and resulted to learn what kind of work environments and occupations suit the user best including a list of occupations that fit their career personality.

Career aptitude test takes five to ten minutes to complete. The test consists of 15 sets of 4 pictures that show specific work activities (Picture 62). The user task is to choose only one work activity that appeals for them the most attractive (the user is able to imagine him/herself performing the occupation), and one that appeals not at all attractive (the user would in no way want to do such work).

Instructions say:

Do not choose a work activity based on the status or money associated with it. Do not make your choice based on gender or race. Just imagine yourself performing the task shown and decide if you would like to do it or not.

If you like doing the activity, click the ✔ on the picture. If you do not like doing the activity, click the ✘ on the picture. You must choose a like and dislike for each set.

Picture 62: Example of 3 sets consisting of 4 pictures
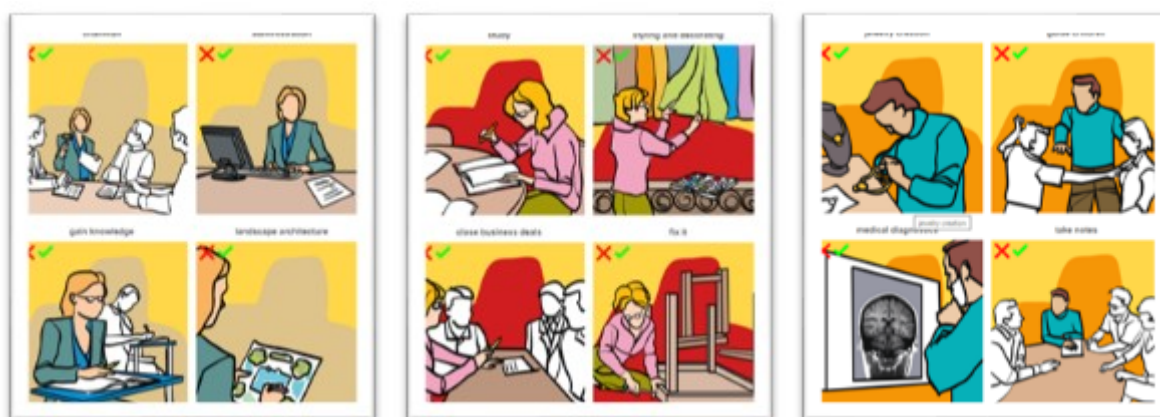
➤ **Comments**

Career aptitude test is not a game, nevertheless, because of the pictures; it looks not such boring like other test based on texts.

➤ **Possible inspiration**

Processing of Career aptitude test can be inspiring for development of the C-Game. The test is based on RIASEC, is short using 90 images of occupations. This kind of self-assessment is for pupils aged 12-14 much more favourable then any text based self-assessment.

7 Strategic and development games

7.1 SimCity

Country: USA
Language: EN, CZ, DK, DE, ES, FI, FR, IT, JP, KR, NO, PL, PT, RU, SE, TW
Availability: Online, charged
Webpages: https://www.ea.com/cs-cz/games/simcity

SimCity is one of the very popular strategy games developing virtual cities – city building simulation video game (Picture 63). It gave users options to make decisions within a

relatively simple economic model combined with an urban simulation model. Most of players do not realize that SimCity is just about the economics of things, and instead, they focus on "just" beautifying their city.[3]

The game is still under development and there are more versions. The series includes six main games (SimCity, SimCity 2000, SimCity 3000, SimCity 4, SimCity Societies and SimCity) and three spin-offs, Sim City: The Card Game, SimCopter and Streets of SimCity.[4] The influence of SimCity on the further development of building strategy games and economic simulations is relatively large; as it turned out that it is possible to create a very commercially successful game in which there is no war.[5]

Players have four elements which they can use: buildings built automatically by people living in the city, buildings with a certain fixed meaning built by the player himself, infrastructure and finally decorative elements such as a park. In order to develop the city successfully, it is first necessary to create plots and determine for which types of buildings it is intended. The plots are intended for three types of buildings (Picture 64): residential buildings, commercial buildings (shops, banks…), and various types of factories.[6]

Picture 63: SimCity screen shot[7]

Picture 64: SiMCity 3 types of plots[8]

It only depends on the player how the individual plots are distributed on the surface of the simulated world, but it is necessary to keep in mind that the different types of buildings interact. This means, for example, that commercial buildings and factories attract new immigrants, and if these plots are close to residential buildings, transport to work is

3   TIŠNOVSKÝ, P. Historie vývoje počítačových her. 67. Část – budovatelské strategické hry SimCity a Moongave. Available at: https://www.root.cz/clanky/historie-vyvoje-pocitacovych-her-67-cast-budovatelske-strategicke-hry-simcity-a-moonbase/
4   Wikipedia, Maxis. Available at: https://en.wikipedia.org/wiki/Maxis#SimCity_series
5   TIŠNOVSKÝ, P. Historie vývoje počítačových her. 67. Část – budovatelské strategické hry SimCity a Moongave. Available at: https://www.root.cz/clanky/historie-vyvoje-pocitacovych-her-67-cast-budovatelske-strategicke-hry-simcity-a-moonbase/
6   ibid
7   NEWMAN, H. SimCity Build has become the most played SimCity ever, ESA Mobile claims. Available at: https://venturebeat.com/2015/06/06/simcity-buildit-has-become-the-most-played-simcity-ever/
8   MANAGER, J. SimCity 2013 needs a lot of Improvements by DIRTCOLINS. Available at: http://worldsims.org/files/2012/10/simcity-strategy1-05641.png

simplified. However, on the other hand, factories generate pollution, so that the residential buildings around the factories practically never develop into villas, but rather in the grey periphery. In a city where the individual plots are close to each other, there will be frequent traffic collapses, but the densely built-up city has the advantage that one police or fire station will be able to guard a larger number of buildings. Finding a balance leading to the sustainable development of the city may not always be easy.[9]

➢ **Comments**

In SimCity is that practically everything related to everything. Residents do not want to live next to a landfill. On the contrary, the price of land will rise if you build, for example, a park or a hospital in the neighbourhood. If there is a shortage of schools the crime increases. The variability in the selection of buildings is fun and gives the city the opportunity to specialize, for example in industry or tourism. The game is dynamic. If one problem is solved in the city, another will appear.

➢ **Possible inspiration**

Our goal is not to build a game with all the features of SimCity, although it would certainly be interesting for students aged 12-14. Our project budget is not high enough and the time we have to develop the game does not correspond to the complexity of developing such a game which at first glance, may seem like a simple game, but it is not. Certainly we will take inspiration from many of the SimCity principles. For example the role of increasing the city's population through job opportunities, monitoring indicators of health, cleanliness, safety, energy, ecology, industry or general amenities. It is also inspiring that there are advisors for individual areas. In case of any problem, it is possible to use their services and only then decide how to solve the problem.

7.2 Venture Towns

Country:	USA
Language:	EN, JA, KR, CH
Availability:	Online, charged
Webpages:	https://www.nintendo.com/games/detail/venture-towns-switch/, https://play.google.com/store/apps/details?id=net.kairosoft.android.zaibatu3&hl=cs

Venture Towns is a SimCity-style building strategy (Pictures 65, 66) with the difference that the inhabitants of the city gain experience depending on what services are provided in the

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[9]   TIŠNOVSKÝ, P. Historie vývoje počítačových her. 67. Část – budovatelské strategické hry SimCity a Moongave. Available at: https://www.root.cz/clanky/historie-vyvoje-pocitacovych-her-67-cast-budovatelske-strategicke-hry-simcity-a-moonbase/

city, etc. So if you want educated residents who can then work for a law firm, you will not be able to make profits to invest not only in the construction of entertainment establishments, but also in educational institutions and the improvement of the city itself.

Picture 65: Venture Towns – screen example [10]

Picture 66: Venture Towns – screen example[11]

➢ **Comments**

See SimCity.

➢ **Possible inspiration**

See SimCity.

8 Other online career guidance activities

8.1 Balance Careers

Country: USA
Language: EN
Availability: Online, free of charge, public
Webpages: https://www.thebalancecareers.com/career-paths-4161858

The Balance Careers is a career guidance platform for all that are looking to find a new job, advance at their current labour market position, or explore new paths.

➢ **Comments**

The Balance Careers is not a game but we find there the following inspiration for presentation of occupation´s description.

[10]   (Tip na hru) Venture Towns je budovatelská strategie ve stylu SimCity. Available at:
        http://www.androidtip.cz/tip-hru-venture-towns-je-budovatelska-strategie-ve-stylu-simcity/
[11]   Svět aplikací. Available at: https://svetaplikaci.tyden.cz/venture-towns/

Possible inspiration

Inspiration can be the way of presenting individual or group of occupations in a form attractive for the pupils aged 12-14 (Picture 67-68).

Picture 67: One day in the life of an animator

Picture 68: One day in the life of a hospitalist

8.2 Job Labyrinth

Country: Italy

Language: IT, EN, SK, ES, HU

Availability: Online, free of charge

Webpages: http://joblab.cnos-fap.it/

Job Labyrinth is a video game aimed to foster inclusive education, training and youth employability in Europe through an enhanced access to training, and to more efficient and integrated guidance, public and private employment services particularly by disadvantaged youth. The game was created within the ERASMUS+ project.

The game starts with choosing the avatar (Picture 69). The figure is controlled with the keyboard arrows for walking and running. Game introduction is on an information table (Picture 70), game guidelines are missing. You then lead the avatar to walk through the nature, enter the cellar, avoid dangerous places, read information board, etc.

Picture 69: First task: Choose your avatar

Picture 70: Game introduction

Main activities are held in a cellar (its map is on picture 71). One of them gives the task of watching video on European youth policies (picture 72). The tasks focused on policies seem not to be very fun.

Picture 71: Map of the game with numbered stations
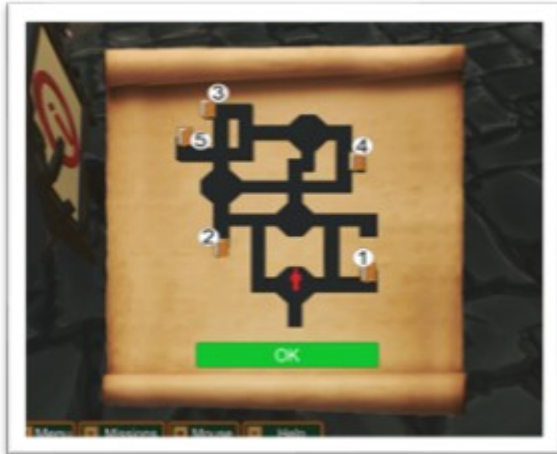
Picture 72: One of the first tasks
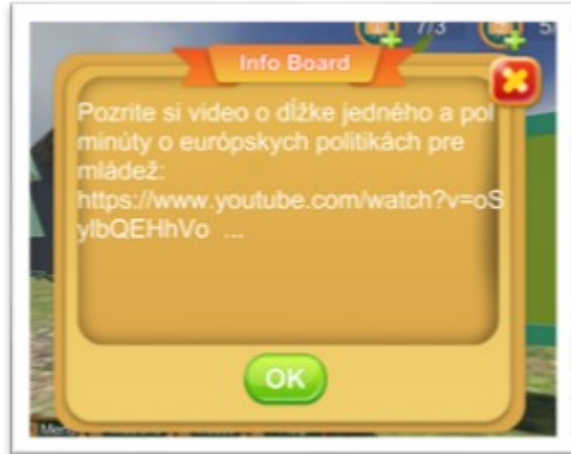
➤ **Comments**

The game requires upload of game base to individual PC. Transitions between individual scenes take time.

➤ **Possible inspiration**

We can make a town with different kinds of buildings which will represent different occupations. For example, a building that will represent the hospital etc. The goal of the player will be to unlock every building and answer questions about the occupations that will provide.

9   Conclusions

We spent hours and hours by searching on internet career guidance games driven by idea to find all from which we can take inspiration for the sake of the development of the C-Game. The result of our desk research is the conclusion that there are not many online serious career guidance games and activities related to career guidance that can be seriously used in career guidance.

Nevertheless, multiple inspirations can be drawn from existing online games and similar activities that have been studied. In the next stage of the project, the inspiration received will be evaluated with respect to the intended results and the target group, in order to make the design of an original and fun C-Game for our target group feasible.

The following list is a selection of good practices, creative approaches, and inspiring examples sorted thematically which have been taken from the online career guidance games and with career guidance related activities. This list will be further discussed with the project partnership, the game designer as well as the game programmer to decide on which of its elements will be utilized for C-Game and how. Afterwards, it is intended be presented also to our target group of pupils aged 12-14.

9.1   List of inspiring examples

➢ **Registration**

In selected web applications there are 2 examples how it is possible to make user friendly and GDPR corresponding anonymous registration (Berufe Universum, Claim your future)

➢ **Virtual game guide**

Virtual game guide, who accompanies the player, gives advice or instructions can take shape of a:
- Advisor (SimCity)
- Job ambassador
- Animal (Paws in Jobland)

Virtual game guide scope:
- Each of career clusters (SimCity)
- Selected career clusters like creative or green career clusters (Career Locker)

- Whole game (Paws in Jobland)

➢ Avatar representing user

Avatar (picture of a person which represents the player) design options:
- Any
- Possibly modified by the player (gender, shape and colour of hairs, style and colour of dress, colour of eyes, etc.) (Career Quest, Job Labyrinth)

Avatar position:
- Moves in the centre of the game (Job Labyrinth)
- Fixed in a position on the most game screens (Career Locker)

➢ Game instructions

Game instructions are very important for to understand the game and the game model as such, the principles and principles of the game. They should be communicated to the player in a simple form at the beginning of the game and before each step that further specifies these rules. (Claim your future)

➢ Game principles

Game principles can be based on:
- Built in scenario indicating the way of play (Excluding Mapa Karier all the mentioned web applications)
- Free use model (Mapa Karier)

Game principles can be:
- Simple working with only few variables, i.e. personal & occupation characteristics & RIASEC types (Mapa Karier, Berufe Universum)
- Complicated working with several variables (Career Locker, The Real Game, Claim your future, My life after school, JA Plan your future, JA Build your future, etc.)
- Complex using economic model involving of the role of increasing the city's population through job opportunities, monitoring indicators of health, cleanliness, safety, energy, ecology, industry or general amenities, etc. (SimCity, Venture Towns)

Examples of possible basics of the game:
- Unlocking the buildings by answer questions about the occupations that are located inside the given building (Job Labyrinth)
- Imagine to be in the position of the City Mayor which task is to maintain and completely manage and operate the city in a complex of services, industry, education, social, health, communal and other services (SimCity)

- Imagine the first day in new job and to be able to specify job´s requirements and duties to make a good first impression (Jobs that care)

➢ City design

Position of the city in the map can be:
- Fixed – position of each of the building has its pre-determined plot, the same is valid for communications, parks, greenery, etc. The player cannot move with anything (Mapa Karier)
- Optional – the player can place everything elsewhere (SimCity)
- Mixed – some of the city requisites can be fixed (lake, river, see) and the rest optional

Distinguishing the game level by colours
- Non changeable colours (Mapa Karier)
- Change of colour (Career Quest):
    o grey if any of the building is not built
    o coloured buildings that are built or occupied by the proper occupations
    o whole city coloured in the final stage of the game

Game design can be:
- 2D (Mapa Karier)
- 3D (Job Labyrinth)

➢ Interest self-assessment

Most of the web applications explored contain some sort of interest self-assessment which content as well as presentation differ. Most of the self-assessments are based on Holland´s RIASEC occupations (Profitest infoabsolvent, Career aptitude test, Plan your future). As source for comparison can be used the List of interests from JA Plan your future (Annex 2).

➢ Information about occupations

Way of presentation information about occupations:
- Avatar bearing the specific features of the given occupation in the style of clothing, its colour, headgear, tools in hands, etc. with possibility to choose avatar´s gender (Mapa Karier)
- Infographics in style "One day in the life of an <occupation>" (Balance Careers) or a poster (My life after school)

The occupational databases can be used as source of data:
- Occupational database (Annex 3) (My life after school)
- List of occupations and buildings (Annex 1) (Mapa Karier)

The data in the occupational databases are divided into several professional groups according to certain keys (Career Locker, My life after school, Career Map). These clusters thus contain occupations that have certain characteristics similar.

➢ **Correctness of the choice of answer**

Ways of correctness of the choice of answer can be:
- Like in kids game hot & cold: "COLD" - the answer is wrong, "WARM" - the answer is close, "HOT" - the answer is correct (Career Quest)
- In Traffic lights – "RED" - the answer is wrong, "ORANGE" - the answer is close, "GREEN" - the answer is correct (KomposyT: Traffic lights)

➢ **ePortfolio**

ePortfolio is a useful personal tool in which the pupils can save information of their skills, interests and values, activities and favourite subjects. ePortfolio can be under certain conditions shared with the school guidance counsellor or teacher (Career Locker). Websites that offer this type of service must properly comply with the GDPR.

➢ **Teacher´s guide**

Teacher's Guide has several functions (Claim your future):
- It is essential to acquaint the teacher with the game, include instructions for working with the class team, a detailed schedule of individual lessons or homework for students.
- An equally important function of the handbook is its marketing role. It should be publicly accessible, shared and promoted among teachers.

➢ **Activity for users up to the age of 12**

A suitable form for the preparation of a younger age group than our target can be the enrichment of the C-Game with a simple game like Learn English Kids, which can attract small children to explore the city, buildings and professions that reside in them (Learn English Kids), and maybe also to learn languages.

10 Annex 1: Mapa Karier: Buildings and occupations (CZ version)

Č.	Budova	Počet povolání v budově	Povolání
1	analytická laboratoř	1	laboratorní diagnostik
2	archeologický průzkum - vykopávky	1	archeolog
3	architektonická kancelář	3	architekt, interiérový architekt, krajinný architekt
4	autobusové depo	4	řidič autobusu, řidič taxíku, dispečer dopravy, dispečer parkoviště
5	automobilka	4	přesný mechanik, tovární archivář, operatér výrobní linky, mechatronický technik
6	autoservis	7	automechanik, autolakýrník, auto diagnostik, autoklempíř, autoinstalatér lpg, obsluha mycí linky, mechanik motocyklů
7	banka	7	daňový poradce, osobní srážce, bankovní pokladník, finanční poradce, bankéř, specialista na investiční účetnictví, zaměstnanec služby atm
8	benzínka	1	obsluha čerpací stanice
9	betonárna	1	brusič kamene
10	bezpečnostní agentura	1	instalátor bezpečnostního zařízení
11	burza	2	makléř, specialista "compliance",
12	centrum krizového řízení	5	horský záchranář, příslušník pohraniční stráže, hydrolog, specialista na řešení krizí, plavčík,
13	centrum sociálního zabezpečení	1	sociální pracovník
14	centrum vzdělávání	4	učitel cizích jazyků, osobní trenér, teletutor, tutor
15	cestovní kancelář	5	horský turistický průvodce, cestovní agent, referent cestovní kanceláře, průvodce městem, tester turistických destinací,
16	cirkus	2	Iluzionista, akrobat,
17	čistírna odpadních vod	2	obsluha zařízení na čištění odpadních vod, technik nakládání s odpady,
18	dětský domov	1	koordinátor pěstounské péče
19	divadlo	9	herec, kostymér, parukář, loutkář, scénograf, tanečník, osvětlovač, choreograf, rekvizitář
20	dopravní středisko	1	instruktor řízení
21	drobné řemeslné služby	3	sklenář, zámečník, obuvník
22	drobné řemeslné služby	3	pokrývač, stavební malíř, podlahář
23	dům módy	3	módní návrhář, produktový manažer, modelka
24	farma	6	včelař, technik venkovského cestovního ruchu, technik zemědělské mechanizace, půdní vědec, zemědělský poradce, rekultivátor půdy

Č.	Budova	Počet povolání v budově	Povolání
25	filharmonie	6	šatnářka, dirigent, varhaník, zpěvák, houslař, klavírní technik
26	filmové studio	7	ředitel, kaskadér, scénárista, pyrotechnik, kameraman, producent filmu, filmový barvář
27	finanční úřad	1	referent finančního úřadu
28	fotografické studio	2	fotograf, kameraman,
29	hangár	2	letec, letecký inženýr,
30	hasiči	3	hasič, náčelník státní hasičské služby, požární technik
31	hospic	1	doktor - specialista na paliativní léčbu
32	hotel	9	hotelový manažer, manažer stravování, vrátný, hotelový osobní asistent, bookmaker, krupiér, recepční, animátor volného času, stevard
33	hudební klub	2	dj, pořadatel akce,
34	hutní závod	3	hutník, galvanizér, slévat
35	chov hospodářských zvířat	6	zootechnický technik, chovatel kožešin, dojička, chovatel krav, chovatel koní, genetik
36	ict firma	4	systémový analytik, ict bezpečnostní specialista, specialista počítačových sítí, key account manager - manažer pro největší klienty
37	ict servis	3	elektronický technik, systémový programátor, servisní technik dronů
38	inspekce silniční dopravy	1	technik silniční dopravy
39	interaktivní agentura	10	textař, lovec módních trendů, trendsetter, webmaster, seo specialista, analytik webového provozu, plánovač médií, distributor letáků, privacy broker
40	jaderná elektrárna	2	inspektor radiologické ochrany, inspektor jaderného dozoru,
41	kancelář soudního vykonavatele	1	komorník
42	klenotnictví	2	klenotník, specialista na drahokamy,
43	konferenční centrum	2	tajemník, pořadatel konferenčních akcí,
44	kosmetický salón	3	kosmetolog, kosmetička, vizážista
45	kostel	2	kněz, varhaník,
46	kovárna	3	kovář, zvonař, zbrojař
47	kožedělná výroba	3	brašnář, koželuh, kožešník
48	krejčovství	5	krejčí, modysta, technik módního průmyslu, pletař, ruční švadlena,
49	kulturní centrum	4	malíř, arteterapeut, animátor kultury, knihovník
50	laboratoř budoucích profesí	25	youtuber, mimozemský důlní inženýr, virtuální asistent, sociální média ninja, data scientist, etický hacker, meziplanetární cestovní kancelář, 3d tiskový operátor, chovatel hmyzu

Č.	Budova	Počet povolání v budově	Povolání
51	lékárna	2	farmaceutický technik, farmaceut,
52	lesnictví	4	dřevorubec, lesník, provozovatel lesních strojů, hraničář
53	letiště	7	meteorolog, pilot, stevard, letecký dispečer, kontrolor letového provozu, obsluha pohybu robota
54	loď	3	námořník, námořní mechanik, technik námořní navigátor
55	loděnice	4	stavitel lodí, lodní inženýr, svářeč podvodní, opravář jeřábů v loděnici
56	lyžařský areál	2	technik lyžařského zařízení, lyžařský instruktor,
57	makléřská společnost	2	pojišťovací makléř, specialista kontrolingu - to je ale účtař, ne makléř!!,
58	mateřská školka	2	učitel mateřské školy, opatrovník dítěte,
59	metro	1	dispečer metra
60	mlékárna	2	mlékař, výrobce sýra,
61	muzeum	7	archivář, umělecký restaurátor, muzeolog, konzervátor, etnograf, turistický informační pracovník, historik
62	nadace	5	fundraiser, projektový manažer, humanitární pracovník, správce sociálních sítí, tazatel,
63	nakladatelství	4	novinář, korektor, editor, kritik
64	nákupní centrum	10	kadeřník, květinář, cukrář, hodinář, pekař, falešný zákazník, knihkupec, tatéř, osobní nakupující
65	náměstí	1	taxikář
66	námořní záchranná stanice	1	plavčík
67	nemocnice	5	anesteziologická sestra, biomedicínský inženýr, psychiatr, toxikolog, zdravotnický záchranář,
68	nemocnice	8	chirurg, lékařský záchranář, eletroradiolog, zdravotní sestra, porodní asistentka, zdravotní bratr, gynekolog, hygienik,
69	obchodní škola	1	učitel odborného předmětu
70	observatoř	2	astronom, astrofyzik,
71	obytný dům	4	blogger, domácí pomoc, hodinový manžel, domovník
72	opravna kolejových vozidel	4	železniční mechanik, auditor kolejových vozidel, servisní technik železničních tratí, posunovač
73	orgán technické kontroly??	1	poradce adr ??
74	otevřený důl	2	obsluha povrchové těžby, studnař,
75	ovocná a zeleninová plantáž	4	chmelař, zahradnický inženýr, polní zemědělec, technik zahradník
76	papírna	1	papírenský technik
77	parlament	1	politik
78	patentový úřad	3	patentový zástupce, metrolog, legalizátor
79	pila	2	programátor obráběcích strojů, obsluha pily,

Č.	Budova	Počet povolání v budově	Povolání
80	plynárna	3	plynový technik, technik těžby plynu, operátor vrtných zařízení
81	podzemní důl	3	horník, technik důlního zařízení, důlní záchranář
82	pohřební ústav	1	hrobník
83	pojišťovna	4	likvidátor pohledávek, upisovatel, pojišťovací agent, pojistný matematik
84	policejní stanice	6	policista, policejní vyjednavač, velitel policie, kriminolog, člen protiteroristické jednotky, profiler
85	poradenská kancelář	7	informační makléř, telemarketér, obchodní analytik, gamifikátor, digital death manager, hr obchodní partner, devops inženýr
86	pošta	3	kurýr, listonoš, poštovní úředník
87	pozemní stavby	4	obsluha silniční techniky, pískovač, obsluha věžového jeřábu, zeměměřič
88	právnická firma	2	notář, právní poradce,
89	provinční úřad	2	technik administrativy, auditor životního prostředí,
90	průmyslová laboratoř	4	chemický laboratorní technik, parfémář, klimatolog, technický analytik
91	přírodní medicína	2	sběratel bylin, osteopat ,
92	přístav	8	celník, přístavní a terminálový technik, potápěč, kapitán přístavu, průzkumník mořského dna, jeřábový technik, řidič v doku, provozovatel podvodního stroje,
93	psychologická klinika	5	psychoterapeut, psycholog, psychoonkolog, terapeut závislosti, podpora paliativních pacientů,
94	rádiová stanice	3	zvukový technik, rádiový hlasatel, softwarový editor
95	radnice	6	koordinátor projektů eu, urbanista, ekonom, ekolog, specialista na sociální marketing, auditor
96	realitní kancelář	3	odhadce nemovitostí, správce nemovitostí, realitní agent
97	rekreační objekt	4	asistent zdravotně postižené osoby, pečovatel, podolog, pracovní terapeut
98	restaurace	9	kuchař, číšník, sommelier, dodavatel potravin, manažer restaurace, barista, pořadatel stravovacích služeb, barman, přípravář pokrmů
99	rybářský přístav	3	námořní inspektor, chovatel ryb, rybářská stráž
100	řemeslná dílna	2	dekorativní keramika, sochař,
101	řeznictví	3	chladicí technik, řezník, technik řeznické linky
102	sad a zahradnictví	4	pěstitel, arborista, producent biopotravin, ochranář přírodního prostředí
103	salaš	1	bača
104	sanatorium	3	fyzioterapeut, masér, doktor infekčních chorob
105	skansen	1	košíkář
106	sklárna	2	sklář - vyfukuje skleněné předměty, operátor sklářského

Č.	Budova	Počet povolání v budově	Povolání
			zařízení,
107	služby občanům	6	pořadatel svateb, soukromý detektiv, kominík, elektrikář, exekutor, finanční poradce
108	softwarový dům	8	vývojář mobilních aplikací, tester počítačových aplikací, specialista na rozpoznávání řeči, návrhář počítačových her, olfaktonik, specialista na umělou inteligenci, herní tester, vývojář webbotů,
109	soud	7	právník, soudce, simultánní překladatel, úředník-stenograf, soudní prostředník, správce, probační úředník
110	sportovní hala	7	sportovec, instruktor fitness, sportovní trenér, taneční instruktor, instruktor bojových umění, sportovní manažer, wellness instruktor
111	sportovní hřiště	8	dietetik, instruktor jízdy na koni, údržbář zeleně, sportovní hlasatel, analytik sportovních her, tiskový mluvčí, žokej,
112	státní zastupitelství	1	státní zastupitel
113	stavební dozor	2	stavební inspektor, specialista bezpečnosti práce,
114	stavební firma	7	stavbyvedoucí, tesař, zedník štukatér, přípravář betonář, pokrývač, hrnčíř, montér ocelových konstrukcí
115	stavební firma	6	stavební technik, svářeč, dlaždič, cestář, mostní stavební inženýr, rozpočtář výstavby
116	stěhování kanceláře společnosti	4	řidič traktoru, ruční balič, zasilatelský technik, logistický technik
117	studio grafického designu	5	návrhář webu, kartograf, ilustrátor, návrhář designu, operátor cad ,
118	supermarket	4	prodavač, obchodník, prodejní technik, marketingový specialista
119	škola	8	učitel domácího jazyka, učitel zdravého životního stylu, logoped, asistent učitele, ředitel školy, školní poradce, ekologický pedagog, asistent učitele dítěte cizince,
120	telekomunikační společnost	3	telekomunikační technik, telekomunikační montér, optoelektronik
121	televizní stanice	7	moderátor, reklamní technik, tlumočník znakového jazyka, specialista na multimediální animace, videografie, image mixer, lektor filmu
122	teplárna	1	technik tepelné elektrárny
123	tiskárna	3	knihař, počítačová grafika dtp, tiskař
124	továrna na domácí spotřebiče	3	tvůrce vstřikovacích forem, instalatér domácích spotřebičů, key acccount manager
125	továrna na nábytek	4	skladník, čalouník, návrhář průmyslového designu, technik dřevařské techniky
126	tramvajové depo	1	řidič tramvaje
127	trh / bazar	3	novinář, pouliční prodejce, starožitník
128	truhlářství	2	tesař, řezbář,
129	účetní a poradenská firma	2	nezávislý účetní, účetní,

Č.	Budova	Počet povolání v budově	Povolání
130	úklidová společnost	3	čistič, průmyslový horolezec, deratizátor
131	úřad práce	2	personální poradce, kariérový poradce,
132	úřad sociálního pojištění	2	úředník sociálního zabezpečení, úředník pro ochranu osobních údajů,
133	veterinární klinika	8	veterinář, úpravář vzhledu domácích mazlíčků, veterinární laborant, zoopsycholog, veterinární technik, cvičitel psů, hlídačka domácích mazlíčků, zoo fyzioterapeut,
134	větrná elektrárna	5	elektroinženýr, inženýr pro obnovitelné zdroje, energetický inženýr, solární montér, montér elektrické energie,
135	vězení	3	vězeňský ředitel, vězeňský pedagog, specialista na sociální rehabilitaci
136	vlakové nádraží	7	strojvedoucí, vlakvedoucí, průvodčí vlaku, železniční technik, vedoucí směny, výpravčí, technik automatizovaného řízení vlakového řazení
137	vnitrozemský přístav	2	technik vnitrozemského rybolovu, technik vnitrozemské plavby,
138	vodárna	3	instalatér, mikrobiolog, meliorant
139	vodní elektrárna	1	inženýr vodní elektrárny
140	vojenská základna	3	voják, důstojník, dálkový operátor vojenské techniky
141	vulkanizační závod	1	vulkanizátor
142	výroba obuvi	1	technik obuvi
143	výrobce plastů	1	technik chemické technologie
144	výrobce potravin	5	obchodní zástupce, technik potravinářské technologie, mlynář, obsluha potravinářských strojů, manažer značky,
145	výrobce umělých hnojiv	1	provozovatel chemického zařízení
146	výrobce zdravotnického vybavení	3	technik servisní techniky, instalátor bio analytických systémů, telemedicínský inženýr
147	výrobní provoz	4	náborář, kontrolor průmyslových výrobků, návrhář osobních dopravních prostředků, řidič vysokozdvižného vozíku
148	vysoká škola	9	biotechnolog, anatechnolog, bioinformatik, chemik, oceánolog, demograf, fyzik, biolog, geograf
149	vysoká škola	4	materiálový inženýr, automatizační a robotický inženýr, geolog, geofyzik
150	webhostingová společnost	6	administrátor databází, ict technik, správce počítačových systémů, cloudový specialista, analytik kybernetických systémů, vývojář blockchainu
151	zámečnická dílna	2	zámečník, soustružník,
152	zařízení na čištění města	3	inženýr životního prostředí, obsluha recyklačního zařízení, provozovatel sběru odpadů
153	zařízení na zpracování ovoce a zeleniny	2	potravinářský technolog, mykolog,

Č.	Budova	Počet povolání v budově	Povolání
154	zařízení na zpracování plastů	2	operátor strojů na zpracování platů, specialista kontroly kvality,
155	závod na výrobu keramiky	1	stavební keramik
156	zdravotní středisko / klinika	5	odborník na péči o sluch, oční technik, lékařský asistent, dermatolog
157	zubař	5	zubař, ortodontista, zubní asistent, protetik, dentální hygienista ,
158	zvláštní škola	4	fyzioterapeut, speciální pedagog, tyflopedagog, pedagog neslyšících
159	železárny	2	ocelářský technik, obsluha lisu kovu,

Č.	Budova	Počet povolání v budově	Povolání

11 Annex 2: JA Plan your future – List of interests

	Interests	People	Things	Ideas	Data
1	Baking		0,5		0,5
2	Biking		1		
3	Camping	0,5	0,5		
4	Clubs	0,5		0,5	
5	Collecting		1		
6	Computer games			1	
7	Earning money		0,5	0,5	
8	Family	1			
9	Friends	1			
10	Gardening		1		
11	Hiking	0,5	0,5		
12	Internet			0,5	0,5
13	Listening to music		0,5	0,5	
14	Movies		0,5	0,5	
15	Painting			1	
16	Pets		1		
17	Playing music		1		
18	Reading			1	
19	Science			1	
20	Shopping	0,5	0,5		
21	Skateboarding		1		
22	Snowboarding, skiing		1		
23	Team sports	0,5	0,5		
24	Volunteering	0,5	0,5		
25	Writing			1	
	Sum	**5**	**11,5**	**7,5**	**1**

12 Annex 3: Kam po škole – List of occupations (CZ version)

Advokát
Agronom
Analytik kybernetické
    bezpečnosti
Animátor cestovní kanceláře
Antropolog
Aranžér
Arborista - technik
Archeolog
Architekt
Asistent
Asistent pedagoga
Asistent zubního technika
Astronom
Auditor
Automechanik
Bankovní pokladník
Bankovní pracovník
Barman
Biolog
Botanik
Brusič kovů
Burzovní/investiční makléř
Celní deklarant
Copywriter
Cukrář
Čalouník
Číšník/servírka
Daňový poradce
Delegát
Dentální hygienista
Dispečer v dopravě
Dozorce, příslušník vězeňské
    správy
Dramaturg
Ekolog
Elektrikář
Exekutor
Fakturant
Farmaceut, lékárník
Farmaceutický asistent
Finanční analytik
Finanční poradce
Florista
Fotograf
Fyzioterapeut
Geolog
Grafik

Hasič
Herec
Hlavní účetní
Hydrolog
Chovatel a jezdec koní
Instalatér - topenář
Interiérový designér
Jazykovědec, lingvista
Jeřábník
Kadeřnice
Kalič
Kameník
Karosář
Klempíř
Knihař, restaurátor knih
Knihovník
Kominík
Konstruktér
Korektor
Kosmetička, vizážistka
Kovář
Krejčí
Kuchař
Kurátor
Kurýr
Laboratorní asistent
Lakýrník
Lékař
Lektor, instruktor
Letecký mechanik
Letuška/stevard
Lisař
Logistik skladových operací
Logistik v dopravě a přepravě
Malíř-natěrač
Marketingový pracovník
Masér
Masér ve zdravotnictví
Maskér
Mechanik optických přístrojů
    a brýlové techniky
Mechatronik
Módní návrhář
Nákupčí
Nástrojář
Notář
Nutriční asistent
Nutriční terapeut

Obchodní zástupce
Obkladač
Obráběč kovů
Operátor v zákaznickém
    centru
Optometrista
Osobní trenér
Ošetřovatel
Ošetřovatel zvířat v zoo
Pedagog volného času
Pekař
Personalista
Pilot
Pokrývač
Policista
Popelář
Porodní asistentka
Poštovní doručovatel
PR specialista
Pracovník poštovní přepážky
Praktická sestra
Prodavač
Prodejce v cestovní kanceláři
Producent v umění
Programátor
Programátor CNC strojů
Projektový inženýr ve
    stavebnictví
Projektový manažer
Průvodce cestovního ruchu
Průvodčí/stevard
Psycholog
Puškař
Realitní makléř
Recepční
Redaktor
Revizní technik elektrických
    zařízení
Revizor v osobní dopravě
Řezník - uzenář
Řidič nákladní dopravy
Řidič osobní dopravy a MHD
Řidič sanitky
Skladník
Sladovník - pivovarník
Slévač
Sociální pracovník
Sociolog

Sommeliér

Soudce

Speciální pedagog

Správce IT

Statik

Státní zástupce

Stavbyvedoucí

Strážný, pracovník ostrahy

Strojvedoucí

Svářeč

Švadlena, šička

Tesař

Tiskař

Tiskový mluvčí

Tlumočník a překladatel

Trenér sportovních družstev

Truhlář, stolař

Účetní

Učitel na VŠ

Učitel v MŠ

Učitel ZŠ, SŠ

Úklidový pracovník

Veterinář

Vinohradník a vinař

Voják z povolání

Všeobecná sestra

Výpravčí

Webdesigner

Zahradník

Zámečník

Zdravotnický laborant

Zdravotnický záchranář

Zedník

Zemědělec farmář

Zpěvák

Zubní instrumentář

Zubní technik

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Online career guidance games for pupils aged 12-14

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