

## Criterion A: Planning

### Computer Science for Kids

#### Defining the Problem

Client/advisor Ms xx is a primary school teacher at the European School; She wants to start teaching basics of Computer Science for elementary school children to give them basic knowledge and skills for future. She wants to start with covering several units in the beginning: how to represent numbers in computer, solve logical problems like finding missing terms in the numeric sequence, solving “Super Silly Squares” etc. It’s not easy for her to find way which will be entertaining and educational and to get kids involved in such difficult subject.

In April, 2013 Ms xx came to our computer class during the brake and talked about her problem with our Computer Science teacher. She described what she wanted: to have computer program with friendly interface, because it would make children study with more joy.

As she was talking about her problem, I thought that it was good material for my Internal Assessment because Ms xx wanted to have IT solution for her problem. Computer Science teacher approved this idea.

In order to analyze this issue I decided to meet Ms xx to make an interview and find out details for my future software.

(xx, 2013)<sup>1</sup>

#### Rationale for Proposed Solution

I think effective java program helps me to solve Ms xx’s problem. It’s possible to create separate sections for teacher and for student. Teacher will be able to prepare activities for students in advance, in order to make children practice about certain topics.

For students, there will be made several game-type exercises according to unit they chose before starting game; Checking students works takes a long time and it requires hard work from teacher, thus program itself will be able to check whether student’s answers. Java-program will “create” files (RandomAccessFiles) where teacher writes activities and reads data from it; thus, teacher can see what she has already used to avoid repetition also this will make her able print any material she wants.

According with these requirements, I decided to make my program in Java because of:

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<sup>1</sup>xx (xx). Computer Science for Kids. (xx, Interviewer)

- I am learning it at school
- Platform independence
- With help of Netbeans IDE, process of writing program becomes more easy
- Using Java it's possible to provide user friendly interface for kids and for teachers
- With Graphical interface easy use buttons and assign them with different methods: delete, edit, add, clean, open window, check etc.
- After creating one type of activities for teacher and for student (methods, object, file), it will be easy to create another one (copy and change a little);
- Easy to manipulate with RandomAccessFiles: read and write in;

### Stating Success Criteria

1. Program will allow teacher to add activities in txt file, change/edit, delete and print activities accordingly any time
2. Program will provide friendly interface for teacher and for kids
3. It will be easy for kids to follow instructions and solve problems/tasks generated by the program
4. Program will provide an option to enter any units/topic student/teacher wants
5. Program will provide a list of already used material to avoid repetition (for teacher)
6. Program will provide Auto Check of students work, throwing message whether answer is correct or incorrect
7. In case of data entry errors, program automatically gives warning messages to teacher
8. It will be easy to back up all files with activities created by teacher

Word Count: 427