

## Criterion A: Planning

### Defining the problem

The client and the advisor Ms xx is currently teaching different subjects in IBPYP 5<sup>th</sup> grade in the EuropeanSchool. At the end of each topic, she makes her students write quiz in order to test their knowledge. Once, after the test my cousin who was in her class last year, came to me and told that she revised topic, but got bad mark, because what seemed to be important for her was not for the teacher. Finally, she asked me for help. I decided to create little game to help her because she likes computer games.

I went to Ms xx to be aware of what they are learning; xx told me that several students had the same problem and asked to create a program for whole class. She promised to collaborate with me if I help them.

I asked my Computer Science teacher about this idea and she agreed. Therefore, I decided to help xx by creating the special educational software.

As xx told, the best way to involve all students in learning process is teamwork and competition; we agreed to create a program with two sections: for teacher to create multiple choice questions with correct answers and for students that would allow different teams consisting of 3-5 people to show their knowledge in 5 different subjects: Art, Math, Music, CS, UOI and earn points for their correct answers. Points would be calculated at the end by software showing the leader. Results would be saved, to allow the teacher to identify the best teams. Quiz made in this program could also be sent to students to revise when necessary.

### Rationale for the proposed solution

I decided to use Java OOP to write the programme, because I am studying it. Java can create user-friendly environment, that requires only basic knowledge to use and it can satisfy my clients needs. In addition, the product written in java can be run on every platform; perhaps pupils have different OS at home.

xx has some basic computer skills, so the program should be easy for her to understand and for the students to follow instructions. Java gives the ability to create controls with buttons, Labels, List, TextFields etc. the comfortable interface would be the best solution.

As this program will summarize the topic knowledge, teacher should create questions with answers and save them; this is possible working with RandomAccessFile that can be printed late. Also, teams members, scores, winners should be saved in file.

**Stating success criteria**

- The program should have two buttons/options on the main window: 1<sup>st</sup> – for teacher to create questions/answers; 2<sup>nd</sup> - for students to play;
- The program allows xx/client to create multiple choice questions in 5 subjects with 3 different point value and with correct answer that will be possible to print later;
- Edit and delete the questions will be allowed by the program;
- The program allows xx to create the electronic version of quiz/game (printing the quiz is not required as students will be involved in competition at the lesson);
- The program allows xx in one game to create two teams with max 5 students to play;
- The program allows xx to provide as many game/competitions as she wants.
- Teams will choose subject and level of difficulties by themselves, but questions “choose” program from database created by the teacher.
- During the competition program will show teams their results and who is the winner;
- The program calculates and saves data of students’ achievements (teacher wants to have general picture of improvement compared to previous results);
- xx can share the program to other teachers with the same problem;
- In case of dataentry errors, info messages will appear on the screen.

Words = 407