ASQ editor

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2 March 2016

1   Introduction & Motivations

ASQ is a Web application for creating and delivering interactive HTML5 presentations. It is designed to help teacher to make more powerful presentations capable of collecting real time answers from students and providing feedback to them. The potential for platform adoption is currently limited by the fact that so far the slides are created in HTML, CSS and JavaScript which can be cumbersome, slow and error-prone for non-programmers. The purpose of this bachelor project is to build an easy and powerful question editor to simplify the interaction of the future ASQ users, moving from pure code editing

```html
<section id="m-slide-1">
  <asq-exercise max-num-submissions="1" assessment="self">
    <asq-multi-choice-q selected-values='["op1", "op2"]' multi>
      <asq-stem><h3>Here you can pick as many as you want</h3></asq-stem>
        <asq-option name="op0">Option 0</asq-option>
        <asq-option name="op1">Option 1</asq-option>
        <asq-option name="op2">Option 2</asq-option>
        <asq-option name="op3">Option 3</asq-option>
    </asq-multi-choice-q>
  </asq-exercise>
</section>
```

to an easy graphical interface similar to the figure below. Also questions should be automagically integrated into existing PPT/PDF presentations during upload.
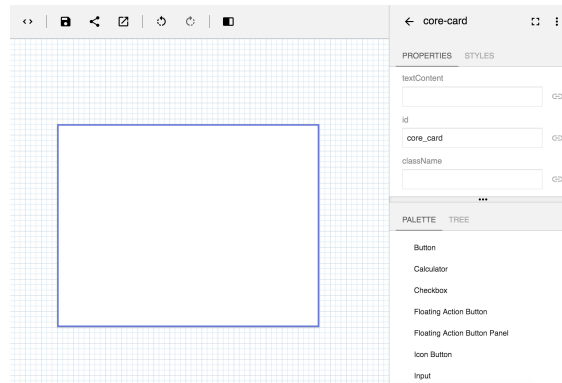
2 Project description

The ASQ editor will be made from scratch using all the functionalities offered by the latest pertinent Web technologies, such as [1]Polymer 1.0 for the front-end and Node.js and Express.js for the back-end.

The editor is a key feature of the ASQ platform since it will be one of the most used components of this web application. It needs to be easy to use but also rich in functionalities and possible customisations in order to satisfy various kinds of user. To accomplish all these requirements, the editor, will have a core structure based on plugins that will increase the flexibility and the longevity of the editor and the entire platform.

Summary of functionalities

- Ability to visually create questions with a simple and user friendly interface

- Very flexible and extensible structure, capable of supporting different question types in the form of plug-ins

- Ability to specify solutions to questions

- Storing and retrieving questions from the ASQ server

- Exporting the questions HTML code for direct embedding into existing presentations

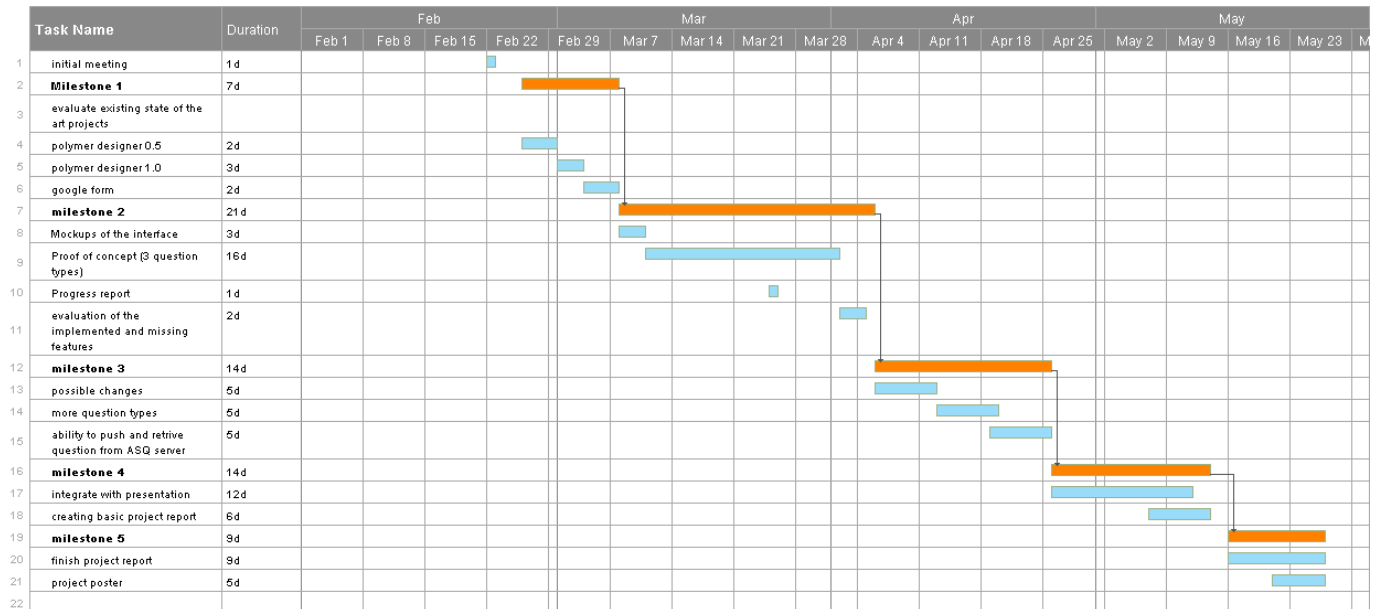- Ability to inject questions into existing presentations during upload

3 Project Goal

The goal of this project is to have a fully functional question editor, able to manage at least 3 types of questions so that these can be injected into an existing presentation.

4 Project Milestones

The project can be divided in 5 different milestones

- Milestone 1: Analysis of the state of the art in editors for Web Components, and Forms (Polymer Designer, Google Forms)

- Milestone 2: Creation of a proof of concept in order to verify main ideas. It should support at least 2 question type (asq-multi-choice-q, asq-text-input-q).Due to the extremely flexible nature of the editor, a lot of effort will be spent in designing and implementing the graphical user interface and the structure beneath, that is the reason why the second milestone is the longer one.In case of unresolved problems, part of milestone 2 will be transferred on milestone 3.

- Milestone 3: Expansion of editor functionalities and possible changes. Support for more question types (asq-buckets, asq-highlight), ability to push new questions to ASQ and retrieve existing questions from it.

- Milestone 4: Implement the ability to inject questions into existing presentations

- Milestone 5: Time dedicated to thesis report and poster

5 Project gantt chart

#	Task Name	Duration
1	initial meeting	1 d
2	**Milestone 1**	7 d
3	evaluate existing state of the art projects	
4	polymer designer 0.5	2 d
5	polymer designer 1.0	3 d
6	google form	2 d
7	**milestone 2**	21 d
8	Mockups of the interface	3 d
9	Proof of concept (3 question types)	16 d
10	Progress report	1 d
11	evaluation of the implemented and missing features	2 d
12	**milestone 3**	14 d
13	possible changes	5 d
14	more question types	5 d
15	ability to push and retrive question from ASQ server	5 d
16	**milestone 4**	14 d
17	integrate with presentation	12 d
18	creating basic project report	6 d
19	**milestone 5**	9 d
20	finish project report	9 d
21	project poster	5 d
22		

References

[1] *Polymer is a software library used to define and style Web Components. The library is developed by Google. Modern design principles are implemented as a separate project using Google's Material Design design language.*