ETERNITY:NUMBERS

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Introduction

The purpose of this poster is to present a brief description of the project Eternity:Numbers. My project deals with the Euler Number. It represents the critical decisions made and the important lessons learned during the course of this project.

Requirement Elicitation

The approach used for this was interviews of potential users. Two experts from their respective fields were chosen, who are very likely to use this calculators, so their opinions about the interface and the functions of the calculator were taken.From these interviews, a persona template as below was created.

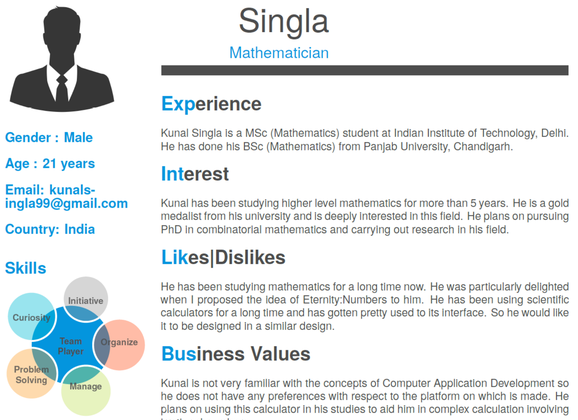

Fig. 1: Persona Template

UML

On the basis of the persona template and the interviews, I used UML to create a basic layout and understanding of the actual implementation of the calculator. There are a number of UML diagrams available, but I choose class diagrams and use-case diagrams to model the code.

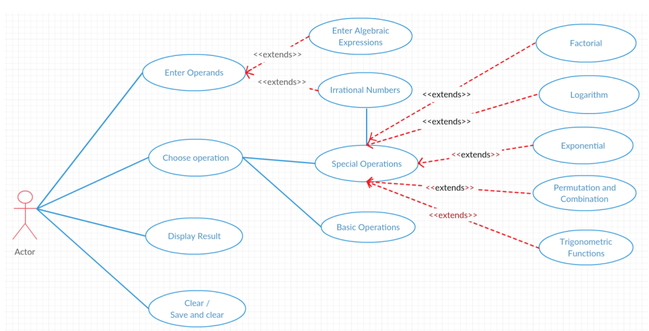

Fig. 2: Use Case Model

USER STORIES

After the modelling of the calculator, user stories were written down.The following user stories were implemented:

- 1. Basic Arithmetic Operations.
- 2. Storage of the previous answers.
- 3. Natural Logarithm using Euler number.

For accountability, a traceability matrix was also built to match the user stories to their correct sources. The format used for user story formation is provided below.

	Use-Cases	User-Stories	Interviews	Surveys	Global	Persona
US1				x		
US2	x		x			
US3	x		x			x
US4					x	
US5	x		x			x
US6	x					
US7	x		x			
US8					x	

IMPLEMENTATION

- On the basis of the user stories and use case diagrams, the implementation was done in Java.
- Only three user stories with the highest priority were implemented and GUI was also avoided due to a shortage of time.
- The final implementation was command line based, but it satisfied the three selected user stories to the fullest.

LESSONS LEARNED

- During the course of this project, I learned to use a very interesting document preparation tool called Latex.
- I also learned the process of conducting interview of a client to gather the requirements of a project.
- Improved my skills of using UMLs to model the user stories and user requirements.
- I learned the process of writing user stories and traceability matrix.
- Working on the project also increased my knowledge about the Euler Number(e).

IMPORTANT DECISIONS

- The choice of the interviewees was the first major hiccup. The interviewee had to be familiar with the Euler's Number and had to posses a basic knowledge of how desktop applications are made. so, I decided to choose two interviewees; one is an MSc(Mathematics) student and the second is a software engineer
- The choice of interview questions was also very tough as the interview was done under time constraints
- The design of the persona template was decided as a team which was assigned by the professor.The persona template as well as the interviews became the basis for the basic modelling of the project. Some of the questions were also agreed upon by all the team members.
- During the designing of the use case diagram, I realized that it would be better to make it as abstract as possible because it becomes more and more difficult to implement and follow.
- During the formation of user stories, assigning priorities was critical as well as very confusing as the user stories with the highest priority had to be implemented first.

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