Scientific Calculator

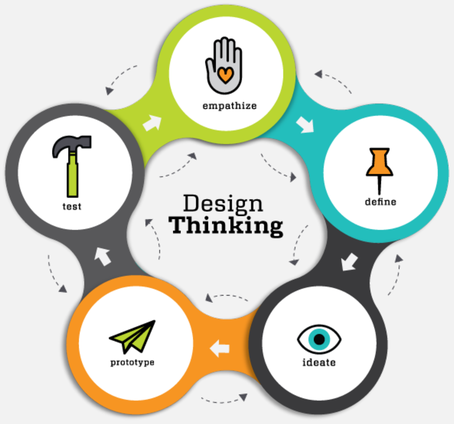
Anand Kacha (40047673)

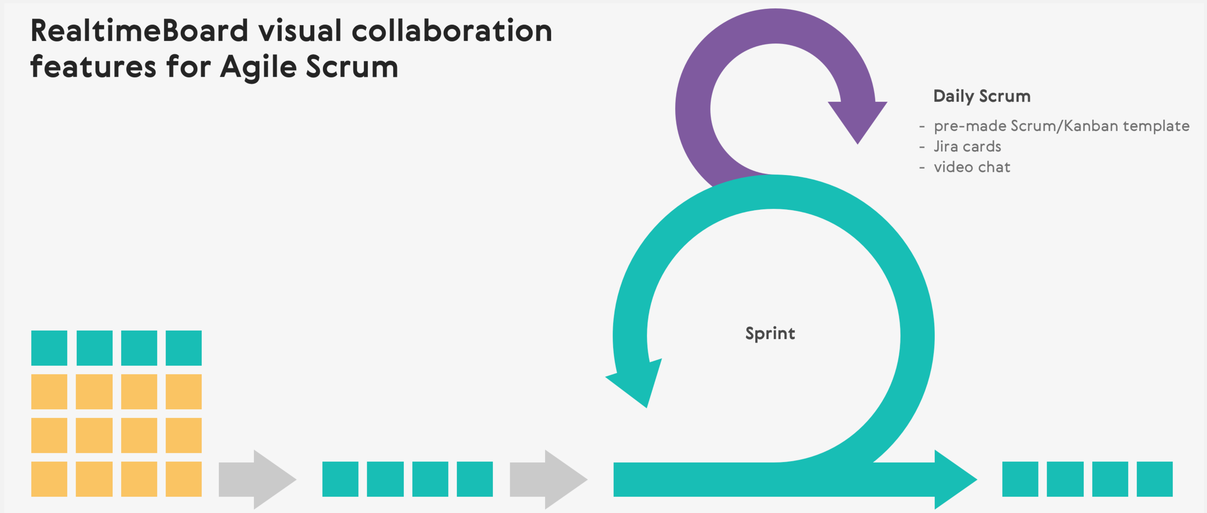
Department of Computer Science and Engineering, Concordia University

Objectives

The purpose of the project is to carry out a number of activities, resulting in a set of interrelated artifacts of a calculator:

- Research about the problem domain
- Interview the potential users
- Brainstorm and mind map with the team to create a persona
- Construct UMLs for the problem domain
- Design the user stories
- Construct the backward Traceability Matrix
- Begin the development of the calculator





Introduction

The calculator exhibits the use of a certain ETERNITY:NUMBERS. The number which is included in the project is Gelfond's number. It is a transcendental number. It can be represented as e^{π}. The potential user base include the students, researchers and professionals from the physics and mathematics field.

Critical Decisions

1. Because the Gelfond's constant is not known to many researchers, it is difficult to identify the target market. The decision of keeping the constant in the product has several factors:

- It can be useful in the product considering the future possible use of the constant.
- Since it has only couple applications, it is not likely to be used more frequently.

2. The decision to choose the kind of user in-

Critical Decisions

-terface is also critical. Though many researchers are familiar with command line interface. Some might prefer the GUI.

3. While constructing the domain model, the functions to include in the product was a difficult decision due to several reasons:

- The researchers preferred more personalized product than a generic one
- The product design must cover the larger market in the physics.

Difficulties Faced

- Most of the research individuals do not use conventional social media platform, it was initially difficult to reach out to them.
- With limited information gathered about the ETERNITY:NUMBERS assigned from the target market, it was difficult to brainstorm about the persona and the target product.
- Prioritizing the user stories is one of the most difficult parts about the user stories.
- Coming up with the right reference point for the user stories in relevantly new product is a difficult task.

Lessons Learnt

- The market research is not fruitful unless you completely understand the problem domain.
- Brainstorming ideas with team members gives better vision to the product design.
- Each user story may not be related to the product interface. Some user stories define the internal functionality and may not show visible work for the customers.
- Estimating the user story points may not be accurate at the beginning. The accuracy comes with experience.