

COMP 354 Iteration 1 Eternity Project

Team I

Concordia University

Friday June 5, 2020

Overview

1 Team

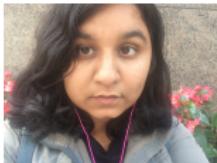
2 Requirement Gathering

3 Product

The Team



Avnish: $\sinh(x)$



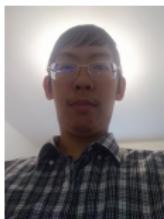
Swati: e^x



Emanuel: $\log_{10}(x)$



Clément: 10^x



Hong Phuc: MAD



Tara: x^y



Anik: $\sin(x)$

Team Roles

| Name | Primary Role and Responsibility | Secondary Role |
|-----------|---|--|
| Hong Phuc | GUI and Web application, prototyping | Implementation of new technologies |
| Swati | Organizing and planning agenda for team meetings | High-level vision, scope management |
| Anik | Set up of initial repository GUI for local application | Questions regarding the Python ecosystem |
| Avnish | Technical Writer | Latex |
| Clément | Major presenter, quality control | Best practices, PEP documentation |
| Tara | Minor presenter, Team liaison | Ensuring requirements are followed |
| Emanuel | Technical writer, subject matter expert for math algorithms | Algorithm optimization |

Collaboration patterns [1]: Project management

- Regular meetings once a week
- Agenda
 - Meeting transcriber ensures that discussions are on track
- Questions are gathered by the meeting transcriber
- Status Update: done, doing, to-do

Collaboration Patterns [1]: Centralizing work

- Focus on real-time information and feedback



1

1

<https://discord.com/branding>

<https://icons8.com/icons/set/google-drive>

<https://github.com/logos>

Code Reviews

- One individually assigned to each Pull Request
- Asymmetric
- Additional techniques used:
 - Inputs and discussion from all team members encouraged
 - Continuously enforce quality standards

Gathering Requirements



2

²<https://unsplash.com/s/photos/brainstorm>

Interview Questions

- Demographic of people who use a calculator
 - Professional/educational background
 - Calculator Usage
- User needs
 - Degree of precision
 - Input box vs. button selection
 - Numeral system required
- Separate requirements into needs and preferences
 - Ease of use
 - Aesthetics
 - Features
 - Platform
- Frustrations with current device

Interview Model

- Hourglass [2]
 - Open-ended questions
 - Followed by specific questions
 - Finished with open-ended questions
- Findings
 - Many interviewees went back to clarify a previous question answered



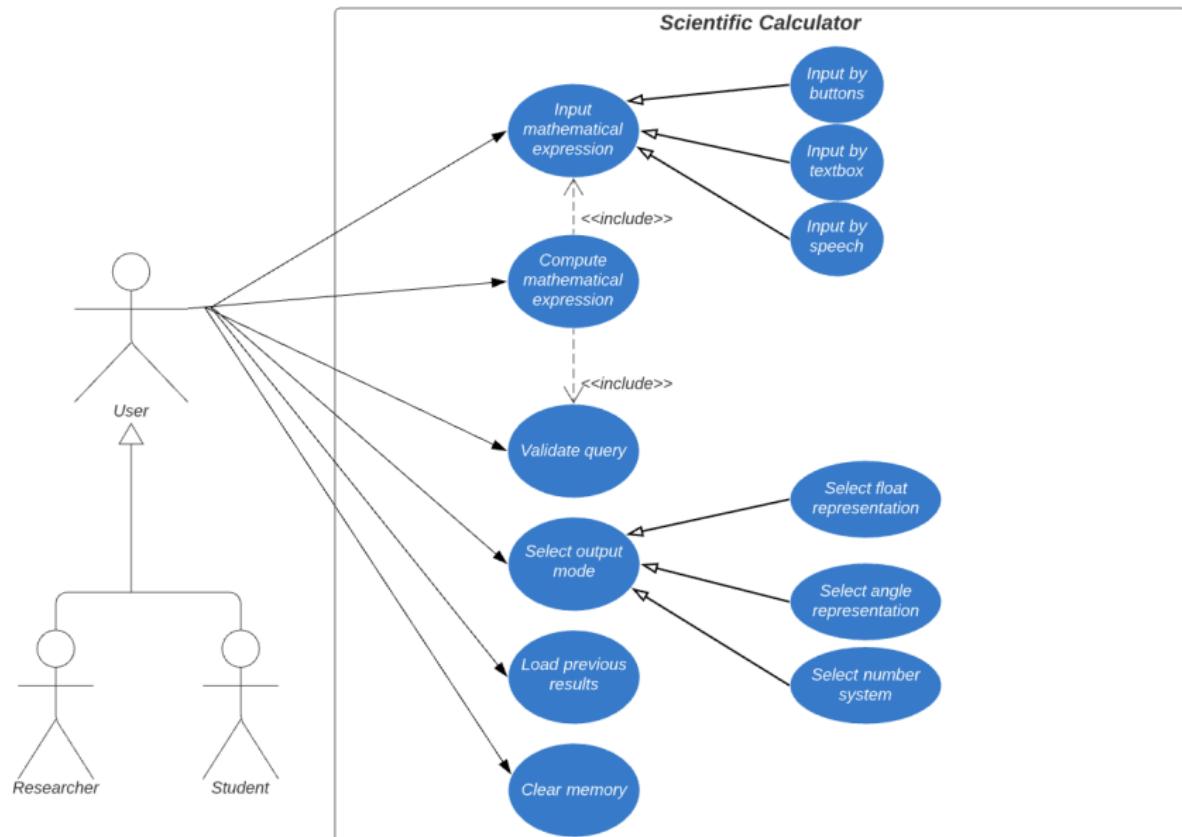
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³ <https://unsplash.com/s/photos/hourglass>

Interview: Key findings

- Precision is extremely important
- Existing calculators contain a lot of unnecessary buttons and features
- Split findings on local or web application
 - Mobility when conducting experiments or for exams
 - Preference for desktop application when working at computer

Summarized Use Case [3]



Product

```
31     def __init__(self, path, debug):
32         self.file = None
33         self.fingerprints = set()
34         self.logduplicates = True
35         self.debug = debug
36         self.logger = logging.getLogger(__name__)
37         if path:
38             self.file = open(os.path.join(path, 'seen_requests'), 'a')
39             self.file.seek(0)
40             self.fingerprints.update(self.file.read().split(os.linesep))
41
42     @classmethod
43     def from_settings(cls, settings):
44         debug = settings.getbool('SUPERVISE_DEBUG')
45         return cls(job_dir(settings), debug)
46
47     def request_seen(self, request):
48         fp = self.request_fingerprint(request)
49         if fp in self.fingerprints:
50             return True
51         self.fingerprints.add(fp)
52         if self.file:
53             self.file.write(fp + os.linesep)
54
55     def request_fingerprint(self, request):
56         return request_fingerprint(request)
```

4

³ <https://unsplash.com/s/photos/code>

Tech Stack

- Choice of technologies influenced by team strengths and user requirements
- Python: familiar & versatile
 - A language we were all comfortable with
 - Rapid iterations
 - Option of a GUI vs. CLI calculator
 - Native language recognition libraries
- Keeping our options open:
 - Electron for a local desktop front-end
 - Flask or nodejs for a web implementation

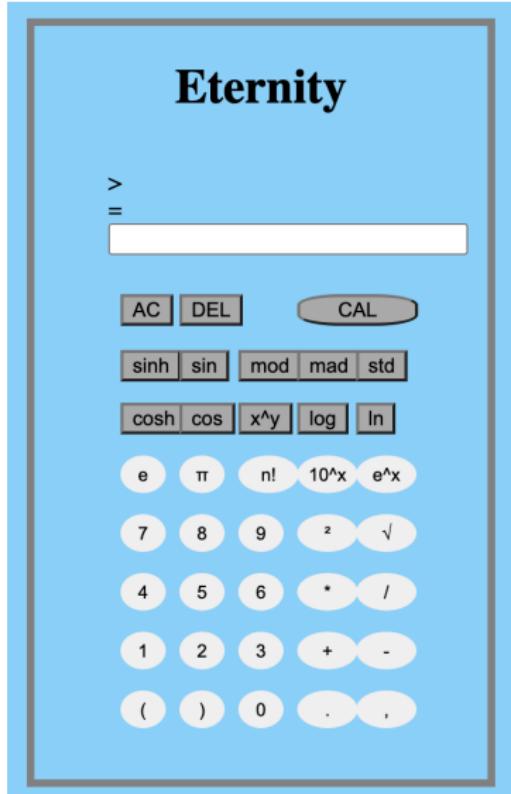
Inclusions/Exclusions

- Information from users gave us a clear idea on what should be built
 - Some ideas were not feasible in the timeframe
 - Speech recognition
 - Radian and degree conversions
 - Scope & reasoning
 - Essential features/functionality - for iteration 1
 - Features/functionality to be looked at a later point

Iteration 2: Organizational improvements

- Collaboration techniques
 - Buddy system
 - Role rotation
 - Better project & team wiki

Our Product



References

- [1] A.M. Ansiul Huq & N. Adabi, "Collaboration Patterns" presented to Class, COMP 354, Montreal, Qc., Canada, 05, 29, 2020.
[PowerPointslides]. Available:
https://drive.google.com/drive/folders/1ubZfwsSh_mQtd0wkPU0CgCpdBdNA6ibu, Accessed on: 06 01, 2020.
- [2] P. Kamthan, Class Lecture, Topic: "Introduction to Interviews." Concordia University, May., 2020.
- [3] P. Kamthan, Class Lecture, Topic: "Introduction to Use Case Modeling." Concordia University, May., 2020.