

# ETERNITY: NUMBERS

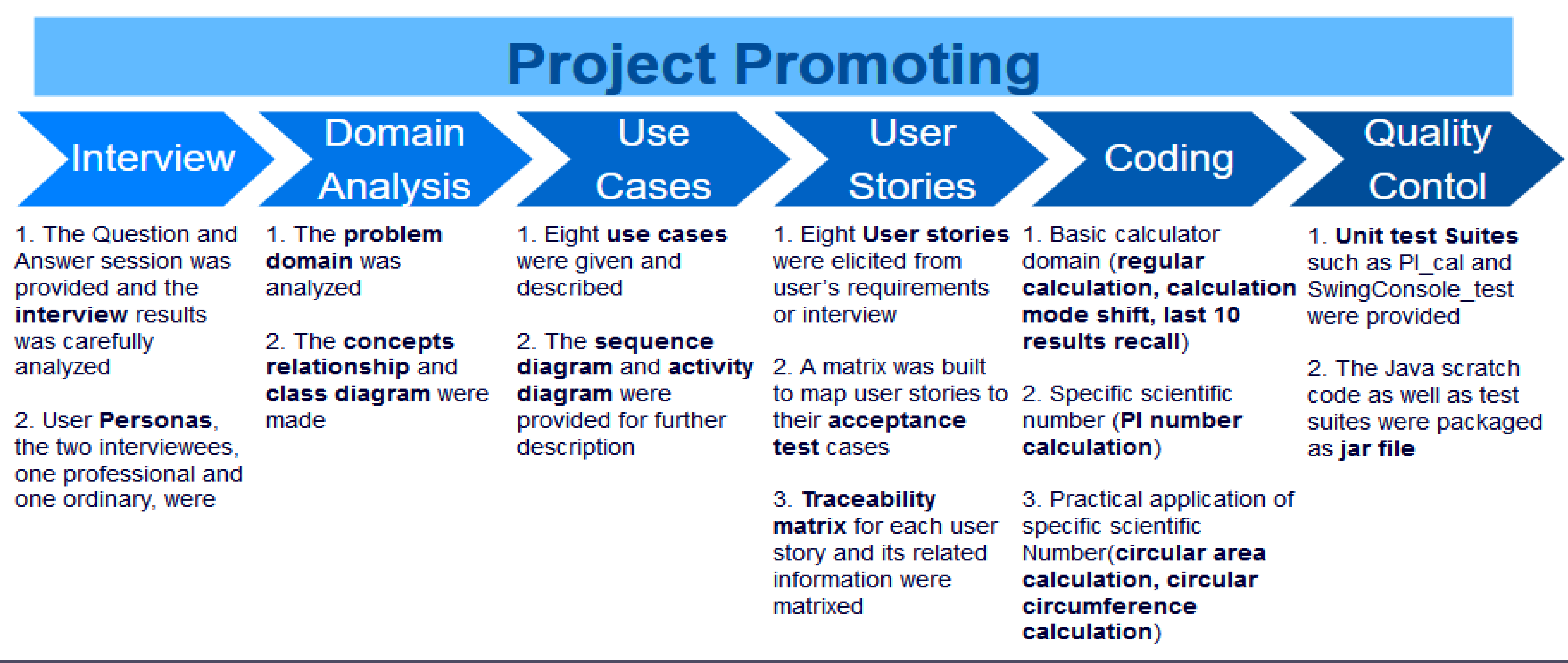
## SOEN 6481 Software Systems Requirements Specification

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### Introduction

- Mode switch between regular arithmetic calculation and scientific calculation regarding PI
- Friendly GUI, customized precision and accuracy, arithmetic capability of PI calculation, circular circumference and circular area calculation and retrieving 10 latest results

### System Development Process



### Critical Decision

#### Critical Decision

- PI calculated by the **arcsin(x) expression of Maclaurin series**:  
 $\pi = 2 * (1 + 1/3 + 2/(3 * 5) + 3 * 2/3 * 5 * 7 + 4 * 3 * 2/3 * 5 * 7 * 9 + .....)$
- Found solution to control both calculation **precision** and **accuracy**
- Prioritized user stories by both **MoSCoW** and **text scale**
- Matrixed all **acceptance tests** regarding user stories in **one** table

#### Lessons

- Building detailed project **schedule**
- Adopting a **change management process** at the early stage
- Learning from past project **failures**
- Running **reviews** regularly and looking at the **successes** and **improvements** needed throughout the process
- Using **uniform** template

### Future Work

Presently, users need to spend time learning how to operate by scripting on console. Improvement on **usability** and richer **functions** are expected. Another **survey** and **interview** are planned to modify the interaction experience.

Thanks very much for advice and support provided by **Prof. Kamthan** and **TAs**. Also high appreciate team members for their valuable support, particularly those from **Adil** and **Maqsood**

### References

[1] "What is User Story and Acceptance Criteria", Available: <https://www.softwaretestinghelp.com/>

[2] "What is Requirements Traceability Matrix (RTM)?", Available: <https://www.guru99.com/traceability-matrix.html>

[3] "How (and why) to write great User Stories", Available: <https://www.freecodecamp.org/news/>

[4] "How to write agile test case requirements", Available: <https://www.getzephyr.com/insights/>

[5] "Difference between Acceptance Criteria Vs Acceptance Tests", Available: <http://www.softwaretestingclass.com/>

### Implementation

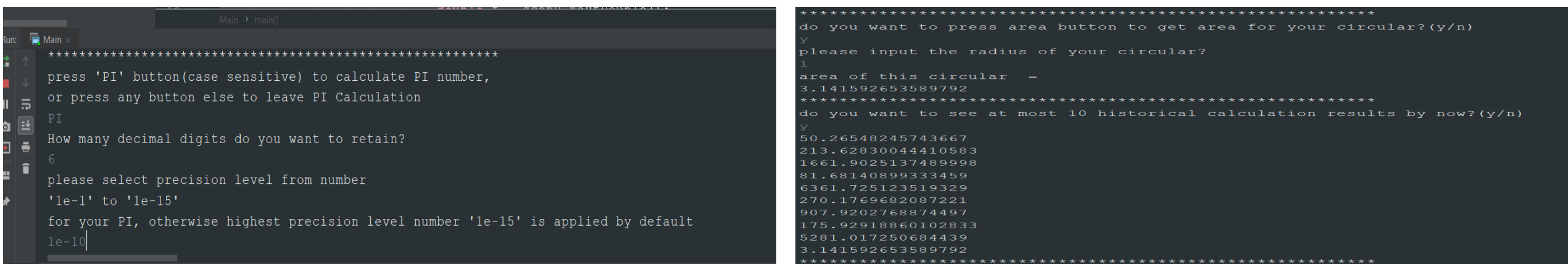


Figure 1. Left, Precision Control; Right, Latest Results Recall

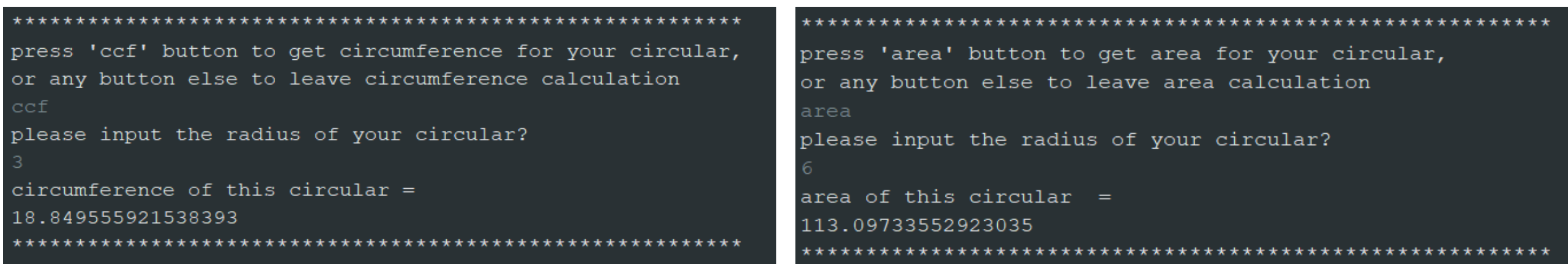


Figure 2. Left, Circumference Calculation; Right, Area Calculation.