<Late Nighterz>

<Kool Kalculator>
Software Development Plan
Version <1.0>

Revision History

Date	Version	Description	Author
<22/09/23>	<1.0>	<Worked on the group project plan>	<David Donaldson, Humzeh Al-Tamari, Ian Collins, Noah O'Grady, Ky Jost>

Table of Contents

Software Development Plan

1. Introduction

1.1 Purpose

The purpose of this document is to provide a framework for us to complete our semester project in an orderly and timely fashion. The *Software Development Plan* was created by our team to help us stay on track.

The following people use the *Software Development Plan*:

- The entire team will use the *Software Development Plan* to synchronize our work

1.2 Scope

This *Software Development Plan* describes the plan to be used by the Kool Kalculator project to demonstrate the knowledge we gain in Fall 2023 EECS 348 class. The details of individual iterations will be described in the iteration plans.

1.3 Definitions, Acronyms, and Abbreviations

See the Project Glossary.

1.4 References

- Iteration Plans
- Vision Statement
- Glossary

1.5 Overview

This *Software Development Plan* contains the following information:

- Project Overview: This provides a description of the project's purpose, scope, and objectives. It also defines the deliverables that the project is expected to deliver.
- Project Organization: This describes the organizational structure of the project team.
- Management Process: This explains the estimated cost and schedule, defines the major phases and milestones for the project, and describes how the project will be monitored.
- Applicable Plans and Guidelines: This provides an overview of the software development process, including methods, tools, and techniques to be followed.

2. Project Overview

2.1 Project Purpose, Scope, and Objectives

The goal of this project is to develop an app that calculates basic arithmetic problems (e.g., Adding subtracting, dividing, multiplying, exponential and parenthesis). This project is expected to return the results of each equation and show the syntax errors in the statement.

3. Project Overview

3.1 Project Purpose, Scope, and Objectives

The goal of this project is to develop an app that calculates basic arithmetic problems (e.g., Adding subtracting, dividing, multiplying, exponential and parenthesis). This project is expected to return the results of each equation and show the syntax errors in the statement.

3.2 Assumptions and Constraints

Constraints:

- Project must be coded in C++
- Project must be completed by due date
- Project plan must be uploaded on GitHub

Assumptions:

- Project must perform basic arithmetic
- Project must handle errors
- Project must handle parenthesis

3.3 Project Deliverables

Our deliverables are as follows:

- Software Development Plan
- Requirements Document
- Design Document
- Test Cases
- Fully Realized Product
- User Manual

3.4 Evolution of the Software Development Plan

The *Software Development Plan* will be revised at the beginning of each group meeting.

4. Project Organization

4.1 Organizational Structure

Project Manager: David Donaldson

Quality Assurance Engineer: Noah O'Grady, Ian Collins

Configuration Management Engineer: Humzeh Al-Tamari

Scribe: Ky Jost

4.2 External Interfaces

The external groups we will be working with are as follows:

- Dr. Hossein Saiedian
  785-864-8812
  saiedian@ku.edu
  www.people.eecs.ku.edu/~saiedian
- Toye Oloko
  Toye@ku.edu
- Mahitha Bayyapu
  Mahitha.b@ku.edu
- Agraj Magotra
  agrajmagotra@ku.edu
- Liangqin Ren
  liangqinren@ku.edu
- Nemath Shaik
  nymatulla.shaik@ku.edu

4.3 Roles and Responsibilities

Project Manager: David Donaldson

Responsible for: Organizing meetings and keeping the team ahead of deadlines. Also responsible for submitting the project to TA/GitHub.

Contact: d19d374@ku.edu

Quality Assurance Engineer: Noah O'Grady, Ian Collins

Responsible for: Recording and addressing errors in the project, designing, and executing testing scenarios

Contact: nmogrady@ku.edu

Contact: ian-collins@ku.edu

Configuration Management Engineer: Humzeh Al-Tamari

Responsible for: Develop software, debug, and troubleshoot, and document code.

Contact: h886a393@ku.edu

Scribe: Ky Jost

Responsible for: Documenting team meetings, scheduling meetings, keeping a log of team meetings and team member contributions.

Contact: kejost@ku.edu

Anyone on the project can perform Any Role activities.

5. Management Process

5.1 Project Plan

N/A

5.1.1 Iteration Objectives

Iterations:

- Requirements Engineering
  - Determining objectives
  - Developing project plan
  - Creating a requirements document
- Design
  - Plan software used in project
- Construction
  - Code software
  - Develop test cases
  - Create user manual
- Testing
  - Debugging
  - Output validation

5.1.2 Releases

N/A

5.1.3 Project Schedule

Project schedule will be determined based on due dates for various parts of the project.

5.2 Project Monitoring and Control

- Requirements Management: Requirements will be monitored and adhered to according to the Project Description. We will utilize our own requirements document to fully outline our perception of the project.
- Quality Control: The quality control will be monitored during each iteration of the software development process. Before every iterative deployment, the project will need to be able to compute using the desired operations. The test cases from the Project Description will be utilized to ensure quality.
- Risk Management: We will be using GitHub to maintain previous versions of our code.
- Configuration Management: The project will use GitHub to retain and ensure that any changes to the software will be recorded and backed-up. Other project changes will be documented here and in related documentation. The project name “Kool Kalculator” will be used for the main naming convention when relating to the executable, models, and other documentation

5.3 Quality Control

Defects will be recorded and tracked as Change Requests, and defect metrics will be gathered.

All deliverables will be reviewed and cleared by all team members. A review is required to ensure each deliverable is of excellent quality, approved by all team members.

Any defects found will be added as Change Requests. These will be tracked throughout the project to identify trends.

5.4 Risk Management

Risks will be identified in the first phase. Project risk is evaluated at least once per iteration and documented in this section of the document. Risks will be added with each iteration.

5.5 Configuration Management

Changes will be submitted as Change Requests. We will track these changes and discuss them as a group. If we deem them necessary, we will add them to the project plan.

If a team member is to drop out of the class, they will continue to work on the project until it is completed.

6. Annexes

The project will follow the UPEDU process.

Glossary (*more terms will be added as needed*):

- PEMDAS: Parenthesis, Exponential, Multiplication, Division, Addition, Subtraction
- Order of Operations: The specific sequence of arithmetic operations to perform given some arithmetic statement