Assignment 1

Project Documentation

# Algorithm Design

1. Display program information
2. Prompt user for an integer
3. Check if is actually an integer
   1. If yes, continue
   2. If no, display error message and quit
4. Calculate value of
5. Display given value
6. Display value of
7. Display goodbye message

# Class Documentation

## Description

The class is named EvalFunction. It contains a standard main() method which runs the entire program. Once the main() method is called by the JVM, the program begins execution according to the Algorithm defined above.

## Variables

The class uses the following variables:

* **Scanner** scanner – An input scanner for collecting the user’s command-line input from stdin
* **String** input – A variable that stores the *string value* of the user’s input
* **int** var – A variable that stores the *integer value* of the user’s input\*
* **int** result – A variable that stores the value of the function evaluated at , where is the user’s input as an integer

\* This is necessary because the class uses Integer.parseInt() to verify that the user’s input was a valid integer. If Integer.parseInt() throws a NumberFormatException, the user did not enter a valid integer. If a NumberFormatException exception is not thrown, the converted string (now an integer) is stored in the var variable for later use.

# Test Cases

## Case 1: = 0

**Expected outcome:**

**Actual outcome:** 4

**Test result:** **PASS**

## Case 2:

**Expected outcome:**

**Actual outcome:** 9

**Test result:** **PASS**

## Case 3:

**Expected outcome:**

**Actual outcome:** 86404

**Test result:** **PASS**

# Assumptions

This program assumes the following:

* The user that invokes the program is available to enter data into the console when prompted (meaning that the user is not executing the program remotely or via an isolated process)
* The value of is less than or equal to Integer.MAX\_VALUE and greater than or equal to Integer.MIN\_VALUE
* The value of the function is less than or equal to Integer.MAX\_VALUE and greater than or equal to Integer.MIN\_VALUE