project 01: help and hints



Application Development



The goal of this project is to give you concrete experience working with a Java program to perform simple integer computations, and to display the results of these computations. You will also demonstrate your ability to find information in a Java program and deduce what it means from context. In addition, you are expected to demonstrate the skills of following instructions and honoring requirements.

This project might seem like a giant step from the problems you were working on in chapters 1 and 2, and that is okay. Some of the code may be unfamiliar to you, however, if you apply what you know, you should have no problems. Don’t be afraid to jump in and try.

# DELIVERABLES

Your assignment is to:

* Develop an Integer Calculator capable of addition, subtraction, multiplication and division of two integers.
* Modify the Integer Calculator source file comments so it is clear that this project is yours, while still recognizing the work of the original author.
* Test the program and document the results.
* Answer the two questions in the project requirements document.

# PLAN YOUR APPROACH

* Establish an approach for how you will acquire the information necessary to successfully complete a working Integer Calculator. That is, decide what steps you will need to complete to get to "done.”

# DO THE WORK

* Update the calculator source code to make the calculator operate correctly.
* Test the program and document the results of your testing.

# SUBMIT YOUR DELIVERABLE

* Ensure that you know how, when and where to submit the deliverable.

# 

# HINTS FOR YOUR ASSIGNMENT

# DELIVERABLES

* Define "done" for each deliverable:
  + An Integer Calculator where:
    - The addition, subtraction, multiplication and division of two integers work correctly.
    - Documented proof that the addition, subtraction, multiplication and division of two integers work correctly.
    - Comments in the source code have been updated so it is clear that this is your program, while still recognizing the work of the original author.
    - The two questions from the requirements document are answered.

# PLAN YOUR APPROACH

* Step 1: Download the baseline source code and bring it into Eclipse.
* Step 2: Find the places in the baseline source code where you need to add the code to correctly make the program do the addition, subtraction, multiplication and division.
* Step 3: Find the places in the baseline source code where you need to modify the comments.
* Step 4: Test the calculator program, and document the results.
* Step 5: Answer the questions, per the requirements.
* Step 6: Submit your work.

# DO THE WORK

### Step 1: Download Files from the LMS

On the LMS you will find an Integer Calculator project baseline, where most of the code to make the Integer Calculator program function has been provided. Download the baseline source code and bring it into Eclipse following the approach you used with Exercise02.

Just as you did with that exercise, you must rename the folder so that it starts with your Student ID. In this case, however, your Student ID must be followed by a blank space, then followed by the string, “Program1.” (Example: AZrimsek Program1)

The folder must contain a source code folder named “src.” Within the “src” folder you will find two “Package” folders: “IntegerCalculator” and “IntegerCalculatorMain.” Within each “Package” folder you will find one class file, each ending with “.java.” A “main” method will be found in the “IntegerCalculatorMain.java” class file in the “integerCalculatorMain” package in the “src” folder in the project folder.

### Step 2: Update the Integer Calculator Source Code

In the project baseline source code you will find comments and code similar to the following:

/\*\*\*\*\*\*\*\*\*\* This is where the code for addition needs to go \*\*\*\*\*\*\*\*\*\*/

result = 0; // Replace this line with your code

Replace the instances similar to the above with valid code as required to make the calculator function properly.

You do not need to create any other package folders or class files to complete this assignment. Also, you do not need to create or view any of the .class files.

## Step 3: Update the Comments

You are expected to submit a well-documented program following the style provided in the baseline. One important element is to change the authorship to your name. If you have doubts about whether your program is adequately documented, please show your program to the professor for guidance.

## Step 4: Test the Program and Document the Results

## Step 5: Answer the Questions

Answer the two questions asked in the requirements document based on your study of the program and, more importantly, the comments in the program.

You do not need to know more than what you have understood from chapters 1 and 2 from the textbook to answer these questions. You must place these questions and answers in your Engineering Notebook entry.

## Step 6: Submit Your Work

As mentioned above, you must record your work in your Engineering Notebook.

The contents of your Engineering Notebook entry must include the following:

1. Images of the calculator application window that shows the output your program will produce. Capture images for each of the four functions. These images will prove that your program is working properly. You must demonstrate that you understand the program and how to exercise it.
2. For each of the window images that you capture, you must explain what is being shown and why you believe this output is indeed what should be displayed. (*e.g.* Since the application does not show which button was pressed, you must specify which button you pressed to produce the result. You should also show the errors that the program detects and explain what is wrong with the input, in order to justify the fact that the error message is being displayed.)
3. You are ready to zip the folder containing the source code into an archive and upload it to the LMS when you have:

* Produced the program that you believe satisfies all that you have been asked to do
* Produced a detailed Engineering Notebook entry
* Checked all of these items against the Grading Form (Project1 GradingForm.xlsx)

Complete the above tasks before the specified deadline.