COMPX202 - Mobile Computing and Software Architecture

# Assignment 2 - Experimenting with a big Java Package: JavaFX

### Due on Friday 20th March at 8pm

The goal of this exercise is to experiment with the JavaFX system for building user interfaces. JavaFX is the recommended library for making user interfaces in desktop applications with the current version of the Java language and development system.

JavaFX is described in the documentation here (overview) and here (full API).
You should also look at the explanations and resources in Week 3 materials.

This assignment has 3 parts:

1. Taking a 'sample' program (different from the one examined in class) and experimenting to find out how it works.
2. Extending or rewriting the sample program to layout a form in JavaFX.
3. Adding callbacks to make your program interactive.

You must update the README file of the project and commit it in your repository as part of your work.

# Instructions

1. Fork this repository using the button at the top of the project page.
2. Make sure that the visibility of your project is private. (Settings > expand Permissions > Project visibility: Private; Save changes).
3. Add your teachers, Andrea (*azanibellato*) and Min-Hsien (*samminweng*) as collaborators to your project so we can check your commits when marking. To do this, go to Settings, then Manage Access (you may be asked to insert your password again), then click on "Invite a collaborator". Insert the teacher's username - azanibellato, then click on the green button to add. Repeat with the other teacher - samminweng. Note: If you don't give us access to your repository you will lose the points on repository usage(see Grading).
4. Clone the new repository to your computer using Git. Develop and test the program on your computer

as described below.

5. Remember to commit and push regularly as you work on the project! Good Git usage, with regular commits having useful messages, will be required in the grading.
6. There are questions asked for each task and locations for answering each question in this document (after the task descriptions). You should answer them in your copy of this document, which will be the README for your version of the project.

# Task 1

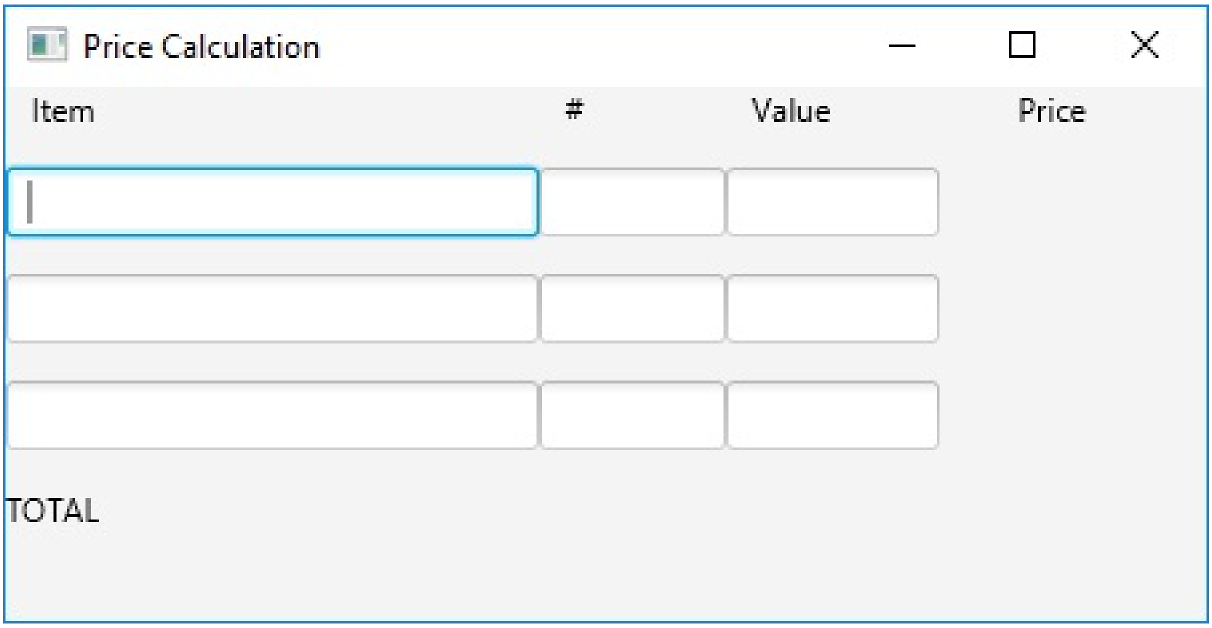
1. The project includes a sample JavaFX program - called A2.java. Make sure that your clone of the repository includes A2.java. Try compiling and running it. Find out what the program does when you enter text into the text boxes. Answer Question 1 (below).
2. In the same way as demonstrated in the lecture, experiment with A2.java. Make changes to the program. Run it and see what effects your changes have. You should focus on features not seen in the lecture. To demonstrate your work, answer Question 2. Your experiments should be different from those tried in the lecture and should be distinct, not be minor variations on a theme.
3. Three new JavaFX classes used in A2.java are: HBox, Text and TextField. Question 3 asks you to describe them.

## Task 1 Questions

```
Question 1
What does A2.java do when you enter text?

*Put your answer here*

Question 2
Describe three experiments you conducted on A2.java and in each case explain what y

*Put your answer here*

Question 3
For each of the classes HBox, Text and TextField briefly describe (a) the purpose o

*Put your answer here*
```

# Task 2

In this section you will extend the A2.java program to display a form that looks like this.



The idea is that the form allows a user to enter up to 3 items that might be purchased in a shop. For each item the user can enter the name of the item, the number being purchased and the unit price(value). In Task 3 it will be extended to continually update labels at the right to display total price for each item and at the bottom the total price for all items. Your task here is to decide on a layout using VBox and HBox. A good solution will make use of font size and other parameters give a good appearance. You can assume that none of the prices displayed are never greater than $999.

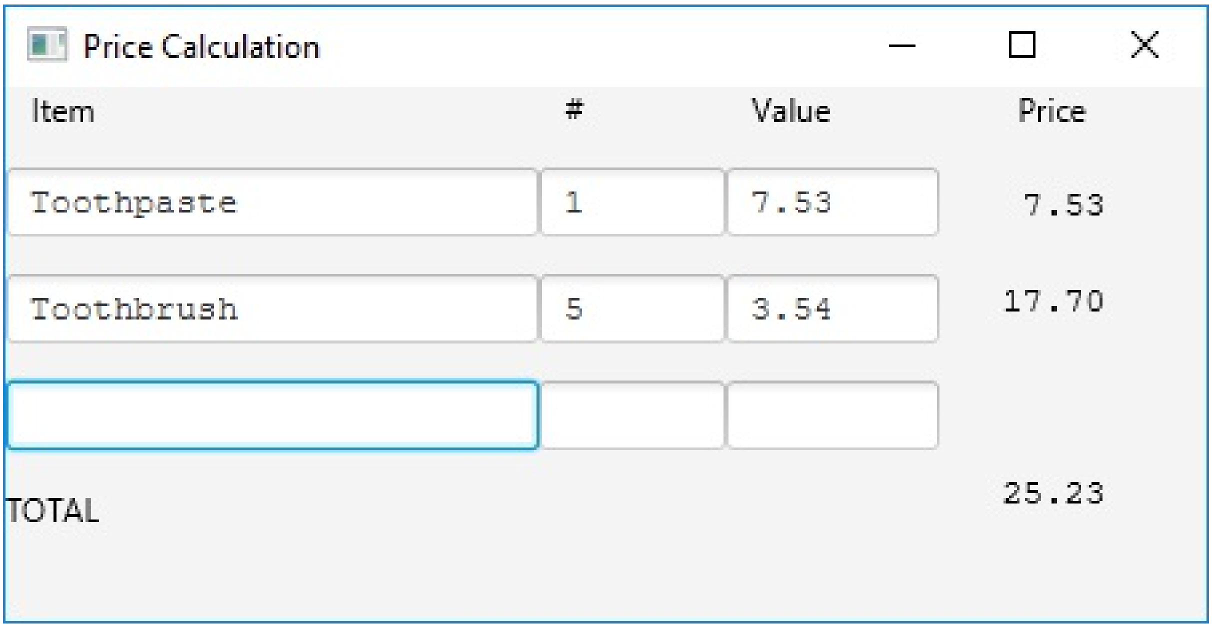
## Task 2 Questions

```
There are no questions for this section.
```

# Task 3

Using callbacks on key release for each text box: update your program to calculate item prices and final
totals. (Update the display on every key entry to the program). If values entered are not valid numbers,
don't display prices.

The screen shot shows the program with some data entered.



Price Calculation

| Item | # | Value | Price |
|---|---|---|---|
| Toothpaste | 1 | 7.53 | 7.53 |
| Toothbrush | 5 | 3.54 | 17.70 |
| | | | |
| TOTAL | | | 25.23 |

## Task 3 Questions

```
Question 1.
What would happen if you used the key press event rather than the key release event

*Put your answer here*

Question 2.
Is the use of key release satisfactory?  Are there situations in which edits are no

*Put your answer here*
```

# Submission

Your finished project should be in your GitHub repository (don't forget to commit and push). You must also put your repository in a ZIP folder and submit that through Blackboard.

# Grading

| Weighting | Allocated to |
|---|---|
| 20% | Correct repository usage and settings |

| | |
|---|---|
| 20% | Task 1 questions and modifications |
| 30% | Task 2 code |
| 30% | Task 3 code and questions |