

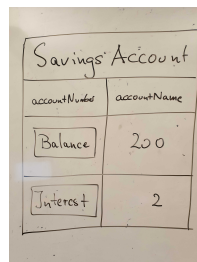
## Tutorial problems – Wed 11 Dec and Fri 13 Dec 2019

**10min** Ask whether there are any questions. Collect these by writing them on the board and decide with the whole group which of these to address in the 10 minutes available for question answering. The answering of the question may also be put to the end of the tutorial.

**40min** Students to work in small groups (of 2 or 3) to develop a GUI for the SavingsAccount class. They should write a **Pane** with two buttons to display the current balance and the interest earned (obviously a full implementation would have further functionality).

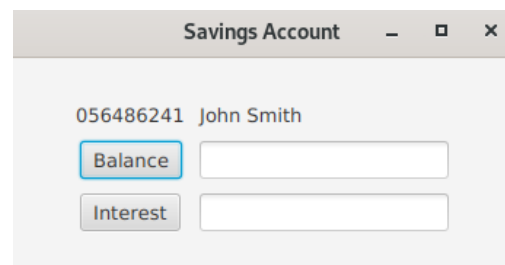
First they should make a handwritten

Then write a JavaFX program that produces something like:



A handwritten sketch of a GUI layout for a Savings Account. It is a 2x2 grid. The top-left cell contains the text 'Savings Account'. The top-right cell contains the text 'accountName'. The bottom-left cell contains a box labeled 'Balance'. The bottom-right cell contains the text '200'. Below the 'Balance' box is a box labeled 'Interest'. Below the 'Interest' box is the text '2'.

|                 |             |
|-----------------|-------------|
| Savings Account | accountName |
| Balance         | 200         |
| Interest        | 2           |



A screenshot of a JavaFX application window titled 'Savings Account'. The window displays the account number '056486241' and the account name 'John Smith'. Below this, there are two buttons: 'Balance' and 'Interest'. Each button is next to a text input field. The 'Balance' button and its input field are highlighted with a blue border.

Use a **GridPane** for the display.

For implementing the program above they should use two ways:

- (a) the first without an **FXML** file,
- (b) the second using a **Controller** and an **FXML** file.

Students may use their laptops and make use of the fragments provided.