

Lab 13: Qt Programming

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Introduction

In today's lab you will make a tiny phone book application. I've given you some starter code, but you still have a ways to go.

Problem 0: Make it

Use `qmake` and `make` to build the project and make sure it runs.

Problem 1: A New Signal

1. `newNumber` needs a signal it can use to send new phone number information to `PhoneBook`.
2. Implement `newNumber::addPress()` to send a signal to `PhoneBook` with a number to add.
3. `PhoneBook` needs to connect `newNumber`'s signal to a new slot.

Hints:

- `Entry` is a `QWidget`.
- If you want to pass an object through a signal, it is best to pass a pointer to something on the heap, rather than trying to pass it by value.
- `PhoneBook::entries` keeps track of all the number widgets, so new entry widgets need to be added to it.
- New entry widgets also need to be added to `PhoneBook::layout` to actually have the widgets show up on screen.

At this point, you should stop and make sure that your code properly displays new phone numbers in the UI when you click the 'Add' button.

Problem 2: The Empire Saves (Back) (and also opens)

1. Add a File menu with Open, Save, and Quit entries to `PhoneBook`.
2. Finish implementing `deserialize()`.
3. Open and Save need to have their corresponding slots completed (see TODOs).
4. Make Quit prompt you before quitting if you haven't saved changes.

Hints:

- `serialize()` converts all the entries to a string that can be then written to a text file.
- `deserialize()` should read data from a string and convert it back into a bunch of entries.

We can serialize entries to a string, write the string to a file, load the string from a file, and deserialize it back to entries! This is how pretty much every fancy program (word, powerpoint, etc) stores data files; their serializers are just a lot fancier than ours.

Epilogue

Make sure to commit your changes to the source files as well as the `.pro` file for compiling your code.