

Programming Exercise 8.3

Password-protected Mortgage Calculator, v.1.0

Purpose. Learn how to use a function to enhance a program, by adding one to an existing program.

Requirements. Rewrite Exercise 5.1's `mortgageCalculatorCin.cpp` program so that it will have password protection. Name the new program `secureMortgageCalculator1.cpp`. Add a function to *prompt the user for a password* – you choose the password. Call the function as the first thing in `main`.

Do NOT exit the program after a certain number of tries. There are unlimited tries. The next exercise deals with limited tries.

When prompting for a password, don't give the user any hints, such as the form or length expected. Allow any alphanumeric or punctuation characters to be entered a password *try*, even if your actual password is fully numeric.

Program I/O. Input: a password from the console keyboard, and then two mortgage calculation inputs. Output: An "invalid" message for each incorrect password entry, then the mortgage calculation output.

Examples. Here's what the output should look like, with user input in **blue**:

```
Enter the password: 123
INVALID
Enter the password: ABC
INVALID
Enter the password: xyz123
INVALID
Enter the password: Rumpelstiltskin

What's the amount borrowed? 270000
What's the annual interest rate? 5.125

Amount borrowed (user input) = $270000
Annual interest rate (user input) = 5.125%
Payback period (programmer input) = 30 Years
Monthly payment (output) = $1470.11
```