

Programming Assignment #5A

Calling Void Functions in an ATM-like Service Program

Your program for this assignment should work almost like the ATM-like service program required in Programming assignment#4A, which will repeatedly display a menu of options and then serve the user according to the option the user has selected until the user says he/she wants to quit the program. However, to practice the use of functions, we want to write three **void functions** in addition to the main function and use them in the main function for this task. The following is the suggested layout of your program:

```
#include <iostream>
using namespace std;

//Define the displayMenu function in the following
void displayMenu()
{    // Fill in your code for the displayMenu function
    // ...
}

//Define the checkLeapYear function in the following
void checkLeapYear()
{    // Fill in your code for the checkLeapYear function
    // ...
}

//Define the checkPrime function in the following
void checkPrime()
{    // Fill in your code for the checkPrime function
    // ...
}

//Define the main function in the following
int main()
{    // Fill in your code for the main function
    // calling checkLeapYear and checkPrime ...
}
```

About the void function *displayMenu*: You should implement (define) the *displayMenu* function such that it can display the menu of options to the user when *isplayMenu* is called.

About the void function *checkLeapYear*: You should implement (define) the *checkLeapYear* function such that it can ask the user for an integer and then check to report whether it is a leap year when *checkLeapYear* is called.

About the void function *checkPrime*: You should implement (define) the *checkPrime* function such that it can ask the user for an integer and then check to report whether it is a prime number when *checkPrime* is called.

About the *main* function: Like in Programming 4A, your main function should have a *char* type variable *option* to store the user's choice of options. You should initialize the value of the variable to any character other than 'Q'. Your main function then should set up a *while* loop such that *while the current choice character stored in the variable is not 'Q'*, the loop will do the following things in the body of the loop.

- Call the *displayMenu* function to display a menu of three options **L** (to tell whether a given year is a leap year), **P** (to determine whether a given number is a prime number), and **Q** (to quit).
- Prompt the user to choose one of the options by entering the corresponding character, and your program should then read the input character into the corresponding variable.
- Use the **switch** statement (Section 4.14 in the textbook) to check the character stored in the variable *option* and serve the user accordingly.
 - In case the character is 'L', call the *checkLeapYear* function appropriately to do the job.
 - In case the character is 'P', call the *checkPrime* function to do the job.
 - In case the character is 'Q', display a message to thank the user for using the program and say goodbye.
 - Default (in other words when it is none of the three cases above): display a message to tell the user it is an unknown option that the program can not help.