

University of Lincoln
School of Computer Science
CMP9133M – Advanced Programming
Workshop 1

Task1:

Create a C++ Console App Project, with only a main function for computing the factorial of a given number read from standard input. This task will introduce you to basic control structures (loops), user input, and basic mathematical operation in C++.

Test Case:

Input: > task1.exe 5

Output: 120

Mathematically, the factorial of a number, n is $n!$, which is given by either

1. $n! = 1 \times 2 \times 3 \times \dots \times (n-2) \times (n-1) \times n$
2. $n! = n \times (n-1)!$

Task2:

Create a C++ program that defines a simple bank account class. The class should have the following properties and methods:

1. Properties:

- Account Number
- Account Holder Name
- Balance

2. Methods:

- Constructor: Initialize the account with an account number, account holder name, and initial balance.
- Deposit: Accept an amount and add it to the balance.
- Withdraw: Accept an amount and deduct it from the balance. Make sure the withdrawal doesn't exceed the available balance.
- Display Account Information: Display the account number, account holder name, and balance.

The program will prompt the user to enter the bank account number, account name, and initial balance, and then create an instance of the `BankAccount` class using the provided input. It will then demonstrate the usage of the class by performing deposits and withdrawals and displaying account information.

You can use the template provide on blackboard called `bank_account.cpp`.

Test Case:

Input: > bank_account.exe

Output:

```
Enter Bank Account Number: 987654
Enter Account Holder Name: Alice Johnson
Enter Initial Balance: 1500

Deposited $500 into account.
Withdrawn $200 from account.
Account Number: 987654
Account Holder: Alice Johnson
Balance: $1800
```