Practical 7 (Weeks 11&12)

Task 7.1: Download **Combined.cpp**. Add a line of code to the constructor and destructor respectively of each class to indicate the constructor/destructor is called. For instance, add the following statements to class A's constructor and destructor:

```
cout << "A's ctor is called" << endl;
cout << "A's dtor is called" << endl;
```

Run your code and explain the outcome of the code to your tutor.

Task 7.2: Download the file "`Task7_2.zip`" from vUWS and run the code in your computer. This program contains a set of classes - `datetype`, `addressType`, `personType`, `extPersonType` and `addressBookType` – as an abstraction of *date type*, *personal address type*, *person details type*, *extended personal details type* and *address book data type*, respectively. The purpose of the program is to store up to 500 addresses in an array (`list[500]` in class `extPersonType`). The data can be loaded from a text file (an example of such a file is included, named "`dataIn.txt`") via the function `loadData()` in class `addressBookType.` The class also includes a nearly empty function `saveData()`, which aims to save the address book into a text file "`dataOut.txt`". Fill the missing code in this function so that all the data in the array can be saved into the file.

Hint: *Download the reference code as examples for file input and output.*

Task 7.3: Write a program that reads text file "`mathsheet.txt`" and outputs it to another text file with the answer of each question. For instance, if the input is "`7 × 3 =`", output "`7 × 3 = 21`".

Hint: add a function getMonth() to the Date class.

Task 7.4 Write a program that randomly generates 100 dates, store them into four vectors of date objects according to their seasons and write them into a text file (see "date_season.txt" for an example). The dates generated must be within 1000 days after 1/1/2000.

Task 7.5: Download the file *Communication.zip.* Understand the code and change it so that 100 date objects are randomly generated in **Sender** class, passed via **Coordinator** class to **Receiver** class and then printed in the Receiver class.

Hint: *Use the header file Date.h from Task 7.4 to generate date objects. These date objects can be stored in a vector for convenience of communication.*

Task 7.6: (Assignment 2 pre-check) Complete Tasks 1-3 of Assignment 2 and show your code to your tutor. Note that your tutor is not in the position to mark your work at this stage. They could tell you if you are in the right direction or not but may not tell you exactly what you have done is correct or not.