CS 200 – Intro to Programming

Assignment 6 [Fall 2018]

Release Date: **Monday** 3rd December 2018, 12:00 PM

Due Date: ***Sunday*** 9th December 2018, 11:55 PM

Please keep in mind the following guidelines:

- Do not share your program code with anyone.
- Do not copy code from the internet.
- If you receive any assistance, mention the part of code in which you received assistance.
- You must be able to explain any part of your submitted code.
- All submissions are subjected to automated plagiarism detection.

Submission:

You have to submit all the .cpp files containing source code. Zip all .cpp files into one file named as <your8DigitRollNumber> .zip and submit the zip file.

Note: Define a class interface separately and its methods separately. Do not write inline code. Your code needs to compile and run to get marks

Task 1: Vector using templates (50 marks)

In this task you'll be implementing a general my_vector class using dynamic memory and templates. Initially the vector should be empty. You'd have to keep *capacity* and *count* member variables to increase the size of vector when required. Implement the following functions for this class:

1. Constructor/Destructor for this class
2. push_back(x) adds x at the end of your array; resizes the vector first if required.
3. pop_back() removes the last value inserted
4. remove(x) removes x from the vector, and shifts rest of the elements
5. You have to overload [ ] operator for the vector class. Returns the value at the ith index

[10 + 10 + 10 + 10 + 10 = 50 Marks]

Task 2: Appointment Book (20)

Write a program that converts 24-hour time to 12-hour time. Sample execution:

```
> Enter time in 24-hour notation:
13:07
> That is the same as: 1:07 PM
> Again? (y/n)
y
> Enter time in 24-hour notation:
10:65
> There is no such time as 10:65
> Try again:
> Enter time in 24-hour notation:
16:05
> That is the same as: 4:05 PM
> Again? (y/n)
n
> End of Program
```

You will define an exception class called *TimeFormatMistake*. If the user enters an illegal time, like 10:65, your program will throw and catch a *TimeFormatMistake*.