Project 1

Object Oriented Programming
and Data Structures

Deadline: November 4, 2013

Project Description

The goal of this first project is to use object oriented programming in solving real world problems. The students are expected to familiarize themselves with open source coding community, libraries and APIs.
A group comprising of two to three should be formed for each project. Please note that this project should serve as a base for the completion of project 2.

Presentation

Each group will give a 10 minute presentation about the project. This presentation should cover the API used and discuss it's functionality. The presentation should also briefly touch the expected outcome of project 2.

Marks Distribution

Project using open source APIs/library:

- Presentation (35 marks)
  - Clarity of Presentation (10 marks)
  - Presentation style, timing, speaking skills (10 marks)
  - Question answer session (15 marks)
- API configuration (30 marks) (Installation of library, using library to perform some very basic operation)
- Illustration of API usage (40)
  - Proper comments, proper tabs, ... (10 marks)
  - Using a basic Class that utilizes functionality of that API (15 marks)
  - Number of functions used to illustrate API/library (15 marks)

Alternatively, if you wish to code the project from scratch (language used for alternative task is limited to C++), the mark distribution would be as follows:

- Presentation (20 marks)
- Complexity of task achieved (40 marks)
- Coding style (20 marks)
- Viva (20)

Suggested APIs

Please note that you are free to use "any kind" of API/library/language. You can develop an android application, write a twitter data scraper, use image processing library, create a google/facebook app or use a gaming library to create your very own game. A list of some good and easy to use APIs using C++ language are given below, we will also have a demonstration of some of these APIs in class. Please do not fret about second project yet, just pick up an API you find interesting. You'll get ideas of Project 2 while working on them.

- SDL (Gaming) (Maximum of 4 groups)
- Allegro (Gaming) (Maximum of 5 groups)
- SFML (Gaming) (Maximum of 4 groups)
- openCV (image processing library **(highly recommended)**) (Maximum of eight groups)
- Twitter API set (TwitCurl) (a web programming interface to use twitter data) (Maximum 2 groups)
- OpenGL and DirectX (advanced gaming APIs, hardware acceleration, use of video cards, many other features) (Advance 2D and 3D rendering Libraries)
- Windows API set (basic interface for developing windows application)
- Many more-Google search your word of interest (website development API, gaming API, Facebook API, Google API, ...) and you'll get a plethora of relevant APIs

Collaborative work is encouraged in using these APIs :).

Coding from scratch

If anyone is taking this path, please discuss the project with me before submitting the proposal.

What's next??

Please form a group as soon as possible, select a project for completion and submit the proposal by **10:40am, Friday, October 4, 2013**. 10 marks would be deducted on late submission of proposal.

1 Honor Code

It is the responsibility of each group member to participate equally for the completion of task. The question/answer, viva and code checking would be exhaustive for each group. Serious actions would be taken against anyone found in breach of the honor code. (copying project, etc, not knowing what's happening in code (other than what's happening at library level).