BITS, Pilani – KK Birla Goa Campus
Department of CS&IS

CS/IS F213 Object Oriented Programming
CS/IS C313 Object Oriented Programming and Design

Lab-5 *Dt.03.09.2014*

The pre-lab work for the lab is as follows.

1. Read **Ch 1, 3, 4, 6** from *UML Distilled, Martin Fowler with Kendall Scott, Pearson Education, 2nd Edition, 2000*.
2. Download **ArgoUML-0.34.tar.gz** from **OOP-DC-Official** folder and run the **argouml.sh** script to run the ArgoUML software.
3. Read up on IRCTC at the following links.
   http://www.irctc.com/Company_Profile.html

   You will be required to draw the use case diagrams for IRCTC website.

The in-lab work for first lab is as follows.

Question-1
Draw the UML diagrams for the following classes with relations.
*use suitable data-types for all the variables.

A) A class named University in which UniversityName, Year of Establishment, Rank, Dean, Capacity are the constraints and getName(), getDean(), setRank(), setCapacity() are the functions.

B) Department class: UniversityName, BranchName, BranchId, Hod, StudentCapacity, ProjectList, FacultyList are constraints and getbranchName(), getId(), getHod(), setStudentCapacity() are the functions.

C) Science class: extends Department class and subDivision is an extra constraint.

D) Engineering Class: extends Department class and addProject() is a function.

E) Course class: deptName, courseName, courseNo,CourseId are constraints, gradesList is a private constraint and studentList is a protected constraint. addGrade() is a private function and getcourseName() ,getCourseId() are functions in this class.

F) An Interface named Address which has constraints Hostel, RoomNum and setHostel(), setRoom() as functions.

G) Student Class: which implements Address has Name, ID, Branch, Room, are variables and CGPA, courseList are private constraints. getName(), getId() are functions and getCGPA() is a protected function.

H) Search Class: Returns all the student class details with the respective protected and private

I) Transcript class: Depends on the student class and has the courseList, GradeList, semester, GPA, CGPA as the private variables and has respective get functions for all the above variables.

J) Professor class: ProfName, researchArea, courseList are constraints and contactDetails is private constraint. getCourseList() is a function and getcontactDetails() is a protected function.

Question-2

A) Draw a use case where a student from student class can enrol in a course.

The post-lab work for first lab is given below. (to be check in next lab)

Question-3

A) Draw the use case diagram for train ticket booking section of IRCTC web portal.
B) Extend the above use case diagram for the case of SMS based mobile train ticket booking.
C) Extend the above use case diagram for booking flights, retiring rooms, hotels and lounges.

References:

Additional information on IRCTC
https://www.irctc.co.in/eticketing/loginHome.jsf
http://www.digitalsoch.com/blog/irctc-case-study
http://www.iamwire.com/2011/11/irctc-face-of-e-ticket-in-india/1862

ArgoUML user documentation
http://argouml.tigris.org/