Assignment2-OOM (Tut-2)

Ans1

Professors
↓
Courses

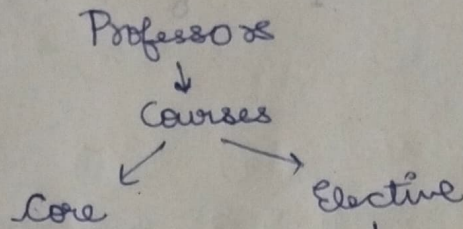Core ↙   ↘ Elective
                    ↓
• given list of Electric Courses
  can't choose one chosen in
  previous semester

• Student can choose preference
                    ↓
• a course given based on
  their CGPA.

Additional information → No. of students alloted to a subject

① Student → This class will store info of student such as their name, Id and elective subjects alloted, frm that make selection about subject he can take.

② Professor → This class will contain its name, adress, and list of Courses offeed

③ Courses → class which have info about Course Id whether it is elective or core courses.

④ Elective Courses → This class will inherit from courses class and store additional info about elective course such as list of student who can learn the subject

we need to create addition list in subject class that store Id of courses student can take.

we also need a specific map for store (student-alloted, elective course) pair

Methods

- get student Info ()
- get Proffesor Info ()
- get subject Info ()
- get Elective Subject Info ()
- get Allot Elective Subject ()
- get NumberOf StudentsAllotedTo subject ()

] Static methods

] Instance method

Inheritance

Courses
↓
Elective Courses

The Elective subject class can inherit from subject class because an elective subject is a type of subject.

Ans 2

① $y = x+y$
$x = x+1$

00 11 21 32 42 ⑤

② $y = y+x$

00 11 23 36 410 ④

③ $y = y+2$
If $(y > 4)$ {
  $y = y-1$;
}

02 14 25 36 47 ⑧

⑤ If $(y < 5)$ {
  $x = x+1$;
  If $(y < 3)$ {
    $x = x-1$;
  }
}
$y = y+2$

02 14 36 48 ④

11 34 59 ②

⑦ $x = x+1$;
$y = y+x$

Ans 3 The value of each field of 'game' object is

home = NULL;
visitor = NULL;
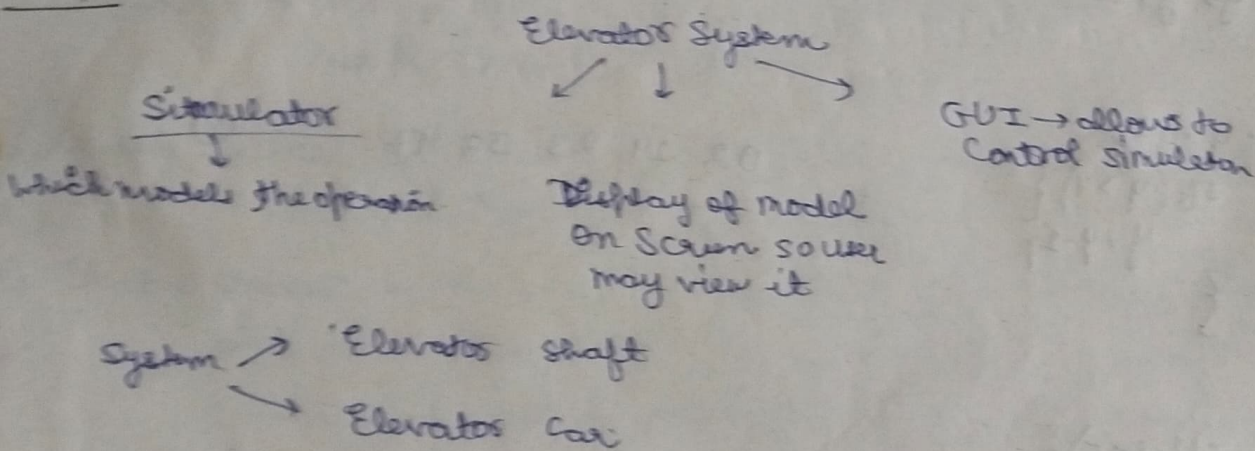homeScore = 0;
visitorScore = 0;

b) The value of each field of giants will be

name = NULL; } b/c initialized as string
city = NULL
no. of wins = 0
no. of losses = 0

c) After executing statements 'Team Angels' and 'BasketBall Game WorldSeries' two references have been declared but no object has been initialized. So only Total 2 objects will be there

d) Neither 'Angel' Nor 'WorldSeries' consume memory at this point because they are just references not objects.

Ans 4

Elevator System

Simulator → which models the operation

Display of model on Screen so user may view it

GUI → allows to Control Simulator

System → Elevator shaft
        → Elevator car

PC - 1   Door → opens and close
              closed during trip b/w floor
              Elevator shaft connects to door on each floor

PC - 1   Elevator starts on 1st floor will all doors closed

PC-III   Each time a unique person is created that travel in life
person walks across floor to elevator.
when button pressed, it illuminated

PC-IV   Elevator must remember the result the floor after
carrying the current Passenger to other floor.

PC-V   The Person, when does not req elevator remain on same
floor

PC-VI   . User → when pressed 1 → create person on first floor
              When pressed 2 → create person on second floor
         Cannot Create User on if already has user on that floor

PC-VII   . Sound linking

Sol   1) User Class :

   o Represent person
   • Properties : Current floor, destination, inside/not
   • methods : move inside elevator, press button,
                  press floor buttom

   2) Elevator Class :

   o Represent elevator.
   o Properties : current floor, pressed floor, empty/filled
                   list of pressed button, whether open/close
                   colour of button, Sound of button ring

   • methods : move to a floor, open door, close door, reset floor
                  press elevator button.

   3) Elevator Shaft class:
   • Represent the elevator shaft, managinging elevator
     arrivals at floor.

• methods : notify elevator arrival , reset floor button

4 floor class:
   • Represent a floor
   • Properties : floor No. , list of pressed buttons
   • methods : press floor button , reset floor button

5) AudioPlayer Class.
       • Handles playing various audio uses like door
           sounds, bell rings , clicks , elevator music

6) GUI class.
       • Implement GUI
       • Allows the User to interact with simulation.

7) Simulation Controller . Class :
       • Coordinate the entire simulation
       • Manages the flow of event , updates the elevator's
           position , handles user input.