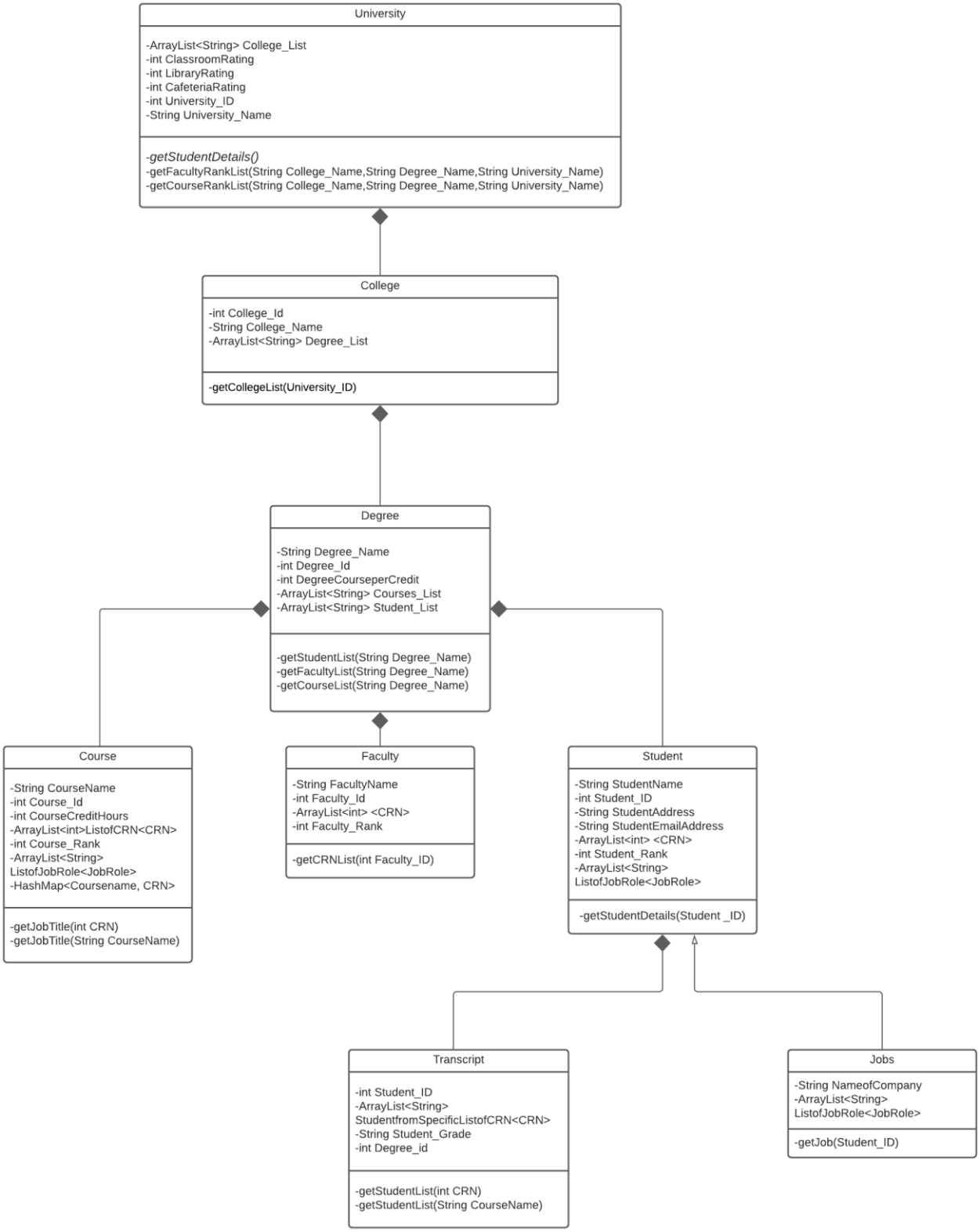
Assignment 3 – 5100 AED

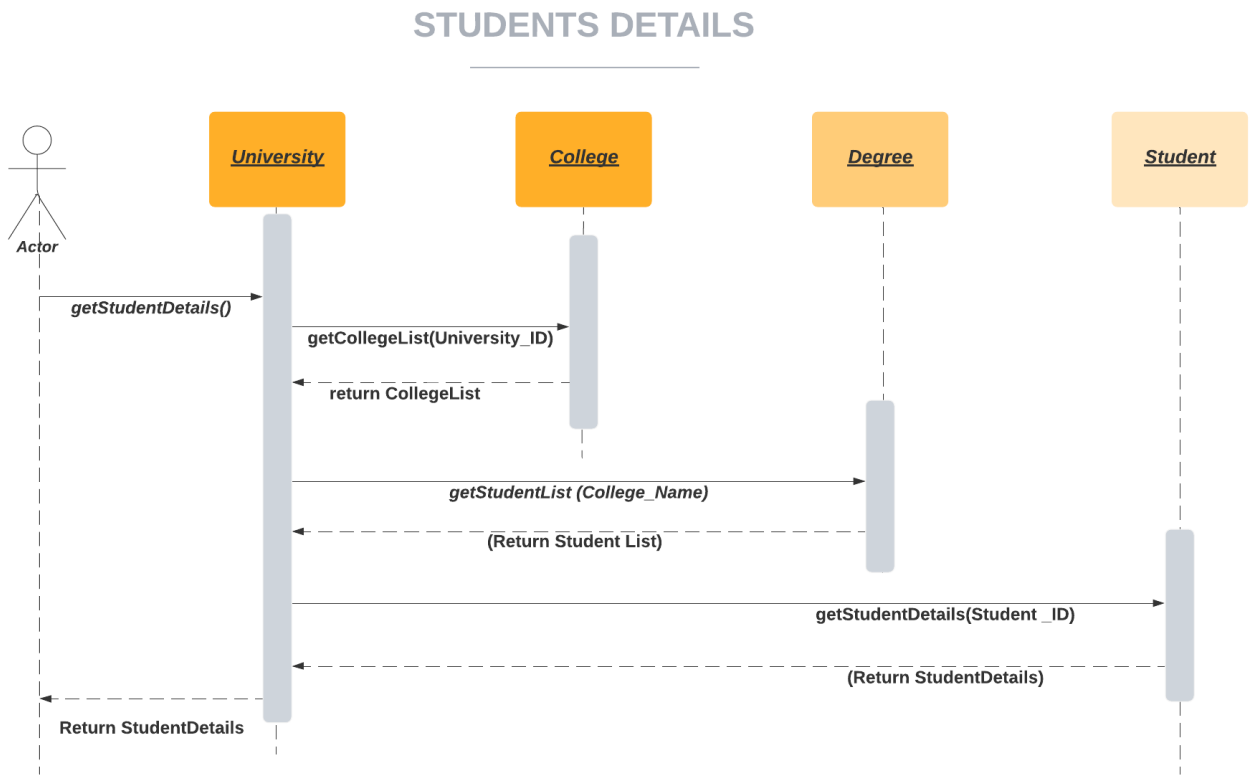
Group members - Akash Sumaria - 1568622, Ujjwal Gupta - 1517165, Vinit Harsora - 2194175

Class Diagram

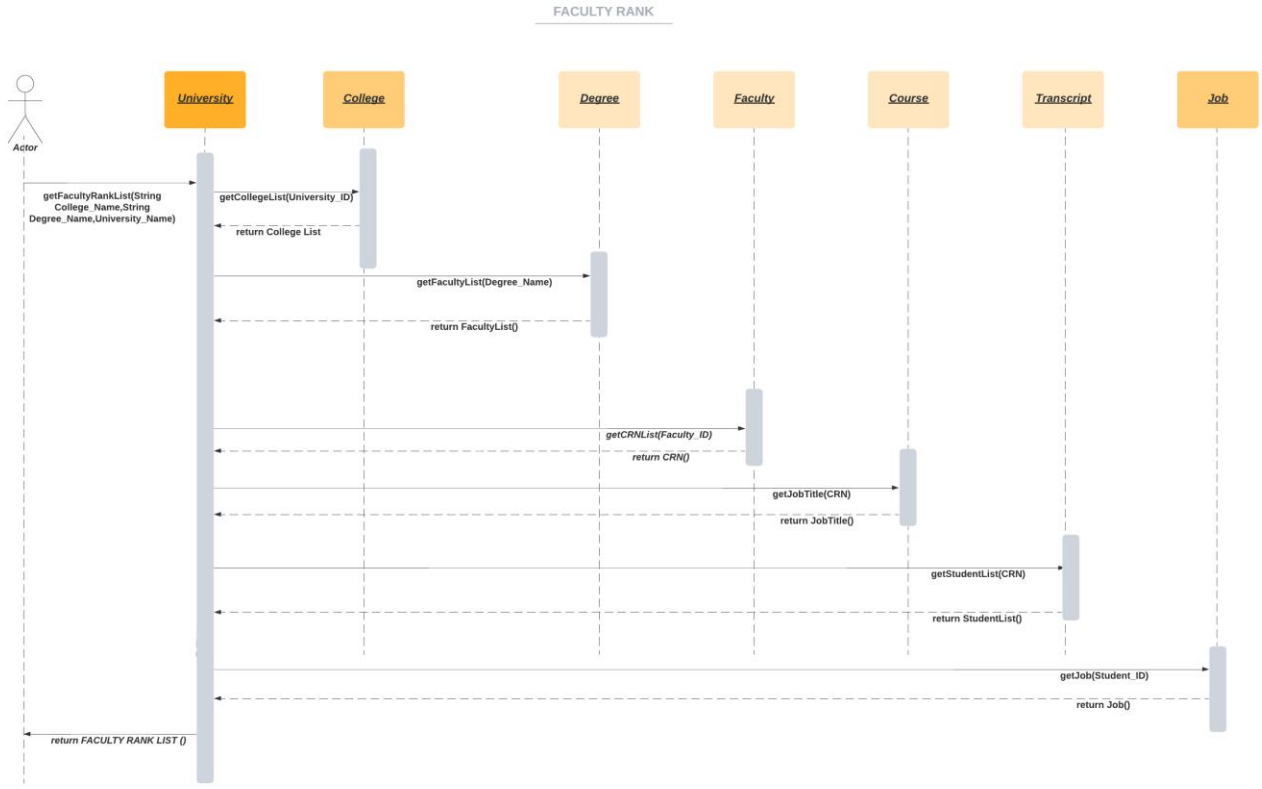


Sequence Diagram

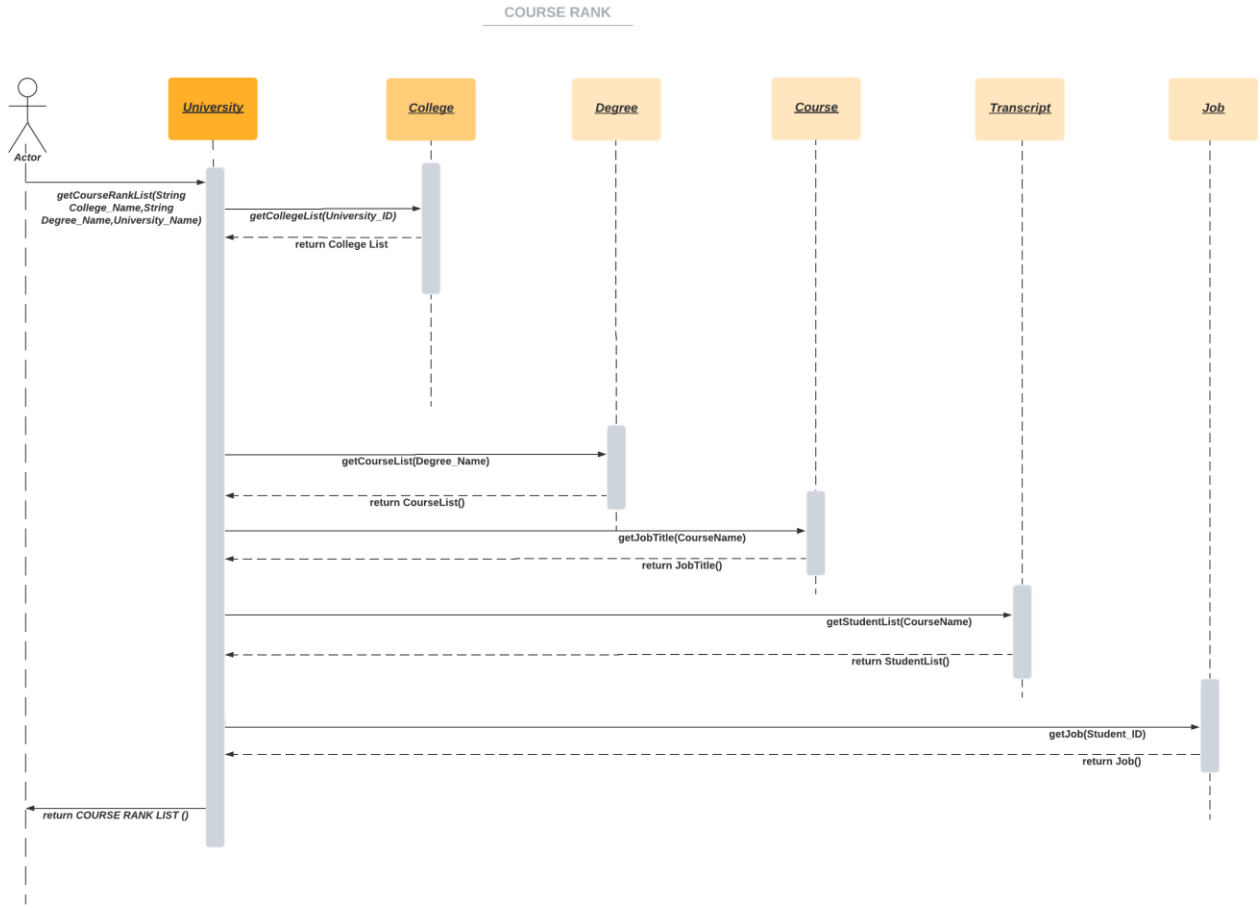
Student Rank



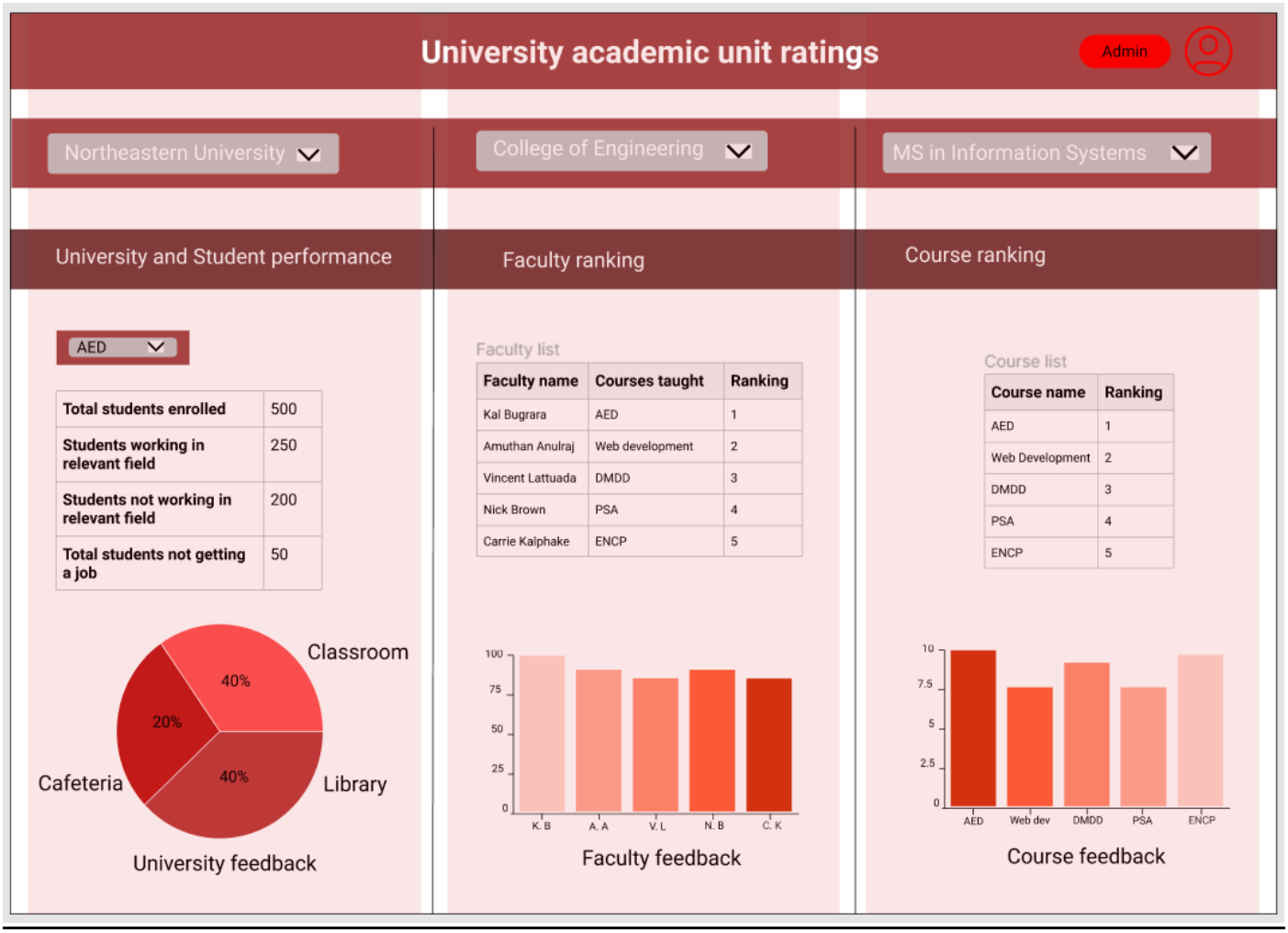
Faculty Rank



Course Rank


COURSE RANK
Actor
University
College
Degree
Course
Transcript
Job
getCourseRankList(String College_Name,String Degree_Name,University_Name)
getCollegeList(University_ID)
return College List
getCourseList(Degree_Name)
return CourseList()
getJobTitle(CourseName)
return JobTitle()
getStudentList(CourseName)
return StudentList()
getJob(Student_ID)
return Job()
return COURSE RANK LIST ()

User Interface



Summary

—> Below is the summary for student and university data representation analysis:

1. To check students 'performance metrics, we need to select the particular university, college, department and respective Course.
2. After selecting all of above it will fetch the data in the table shown in the dashboard.
3. In the table we are showing students performance based on employment data with respect to course selected.
4. For University Performance we are fetching data from the feedback received and plotting it on the pie chart

—>For the Faculty Rank section, If a Student wants to get a list of Faculty rank wise, then the application will perform following steps:

1. Student will request the list to University.
2. University will send a request to College to provide all the list of colleges and College will return the list back to University.
3. Next University will send a request to Faculty to provide list of faculty list with respect to the specific degree and degree will return the list back to faculty.
4. Next University will send a request to Faculty to provide list of CRN taught by the faculty and faculty will return the data back to University.
5. Now University will send request data from Course to provide the job title for that particular CRN and it will be sent back to University by Course Entity.
6. Further more University will ask list of CRN for the list of students from transcripts and transcripts will return back the data.
7. Moving on University will ask to Job entity to provide the job title for the specific student and the Job entity will hence give the data to the University
8. After that we are checking relevancy of student's job title with possible job roles after studying the course and ranking the faculty based on no of matches.
9. Finally University will send the data back to the Student will the rank List of Faculty.

—>For the Course Rank section, If a Student wants to get a Rank list of the Courses, then the application will perform following steps:

1. Student will request the list to University.
2. University will send a request to College to provide all the list of colleges and College will return the list back to University.
3. Next University will send a request to Degree to provide list of Course list with respect to the specific degree and degree will return the list back to the university.
4. Next University will send request data from Course to provide the job title for that particular Course Name and it will be sent back to University by Course Entity.
5. Further more University will ask list of Course Name for the list of students from transcripts and transcripts will return back the data.
6. Moving on University will ask to Job entity to provide the data for the specific student and the Job entity will hence give the data to the University.
7. After that we are ranking the course based on relevant job which students gets and growth in 5 years.
8. Finally University will send the data back to the Student with the rank List of Courses.

Pseudo-code snippets

getStudentDetails

```
getStudentDetails(){

    //Creating objects
    College college = new College();
    Degree degree = new Degree();
    private ArrayList<Student> studentList;
    private ArrayList<String> CollegeList;
    Transcript transcript = new Transcript();
    private ArrayList<Integer> SGPAList;

    //Getting studentlist
    CollegeList = college.getCollegeList(University_ID);
    studentList = degree.getStudentList (College_Name);

    //Foreach loop of studentList
    for(Student s : studentList){
        SGPAList = transcript.getGPA(s.Student_ID);
    }
    //Populate the table
}
```

getFacultyRankList

```
getFacultyRankList(String College_Name,String Degree_Name,University_Name){
    Degree degree = new Degree();                College college = new College();
    private ArrayList<String> CollegeList;       private ArrayList<Faculty> facultyList;
    Faculty faculty = new Faculty();             private ArrayList<String> CRNList;
    Course course = new Course();                Transcript transcript = new Transcript();
    private ArrayList<String> CJobTitle;         private ArrayList<Student> StudentList;
    Job job = new Job();                         private ArrayList<String> SJobTitle;
    //getting college list
    CollegeList = college.getCollegeList(University_ID);
    //Getting faculty list
    facultyList = degree.getFacultyList(Degree_Name);
    //Foreach loop of facultyList -> getCRNList from Faculty class
    for(Faculty f : facultyList){
        CRNList = faculty.getCRNList(f.Faculty_ID);     }
    //Foreach loop of CRNList -> getJobTitle and getStudentList from Course and Transcript classes respectively
    for(String c : CRNList){
        StudentList = transcript.getStudentList(c);
        CJobTitle = course.getJobTitle(c);    }
    //Foreach loop of StudentList -> getCRNList from Student class
    for(Student s : StudentList){
        SJobTitle = job.getJob(s.Student_ID);    }
    //Compare Course->JobTitles with Student->JobTitles
    for(String Cjt : CJobTitle){
        for(String Sjt : SJobTitle){
            int count = 0;
            if(Sjt.contains(Cjt))
            {
                count++;
            }
        }
    }
    //Returning the count i.e Faculy rank
    return count;
}
```

getCourseRankList

```
getCourseRankList(String College_Name,String Degree_Name,University_Name){
    Degree degree = new Degree();
    College college = new College();
    private ArrayList<String> CollegeList;
    private ArrayList<String> courseList;
    Course course = new Course();
    private ArrayList<String> CJobTitle;
    private ArrayList<Student> StudentList;
    Transcript transcript = new Transcript();
    private ArrayList<String> SJobTitle;
    Job job = new Job();
    CollegeList = college.getCollegeList(University_ID);
    // get course list under degree name
    courseList = degree.getCourseList(Degree_Name);
    //Foreach loop of CRNList -> getJobTitle and getStudentList from Course and Transcript classes respectively
    for(String c : courseList){
        StudentList = transcript.getStudentList(c);
        CJobTitle = course.getJobTitle(c);}
    //Foreach loop of StudentList -> getJob from Student class
    for(Student s : StudentList){
        SJobTitle = job.getJob(s.Student_ID);}
    //Compare Course->JobTitles with Student->JobTitles
    for(String Cjt : CJobTitle){
        for(String Sjt : SJobTitle){
            int count = 0;
            if(Sjt.contains(Cjt))
            {
                count+=Sjt.length();
            }
        }
    }
    //Returning the count i.e Faculy rank
    return count;
}
```