CS-6110

OBJECT ORIENTED ANALYSIS AND DESIGN

MINI CASE STUDY - DOCUMENTATION

TOPIC : CAMPUS RECRUITMENT SYSTEM

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ABSTRACT :

Campus Recruitment System aims at providing the compatibility to simplify the process of placement for students. This system consists of a student login, company login and an admin login. This is beneficial for college students, various companies visiting the campus for recruitment and even the college placement cell. The software system allows the students to create their profiles and upload all their details including their marks on to the system. The admin can check each student's details and can remove faculty accounts. The system also consists of a company login where various companies visiting the college can view a list of students in that college and also their respective resumes. The software system allows students to view a list of companies who have posted for vacancy. The admin has overall rights over the system and can moderate and delete any details not pertaining to college placement rules.

INTRODUCTION :

Computer based information systems are designed to improve existing systems. It has a user friendly interface having quick authenticated access to documents. Nowadays we all are using the internet to do multiple things . Likewise ,This system can be used as an application to manage student information related to placement. The system handles student as well as company data and efficiently displays all this data to respective sides. This System does all work regarding placement like collecting student records, Authenticate & activate the student profiles, Notifying eligible students via automated Email message, Check the number and percentage of placed & unplaced students(generating placement reports). Proper login with time & role based secured access is provided to Placement cell, Company, College staff and students.

EXISTING SYSTEM AND PROBLEM STATEMENT :

Since the automated systems are demanded now-a-days, educational infrastructures like colleges need their manual systems. One of such systems which is of major importance is placement automation for campus recruitment. During on-campus interviews, a *large number of individuals apply* [1]. This proves to be a task to the organization since it is a *very time consuming process to manage data* [2]. Manual records tend to contain data which are *redundant* [3]. Maintaining each student and employees data with a large number of fields is a *tedious process* [4] and takes more time to retrieve back too and also increases the *risk of errors* [5] . An organization goes through many numbers of updates each day which is hard to convey to students regularly. This big problem is the *searching; sorting and updating of the student data* [6] and no notification method available for giving information to students except the notice board. For every recruitment process is *time taking and a large number of resources are required* [7], using this system will **save time, reduce cost and accurate methods** are followed for recruiting candidates.

PROPOSED SYSTEM :

The proposed Online Placement system is intended to avoid all the drawbacks of the existing system. It will add some more features than the existing system. The proposed Online Placement system is a cost effective way of doing the manual processes done in the existing system. This helps the organization to win the war in the existing competitive world. It provides the facility of maintaining the details of the students. It will reduce the paperwork and utilize the maximum capabilities of the Setup and organization as well as it will save time and money which are spent in making reports and collecting data. It can be accessed throughout the organization with proper login provided.

OBJECTIVE :

The main objective of the Recruitment process system is to make it easy for students to apply for placements and recruiters to hire for their companies. It acts as a mediator between the students, placement cell and companies. In order to avoid the above existing placement problem we are planning to design a system for online placement, so that placement activities become more interactive, automated and effective.

1. Reduce the paperwork and create a database of students.
2. Save time & work load for TPC.
3. Easy to access.
4. Avoid fake Entry and faulty information.
5. Only eligible students get a chance.
6. Improve accuracy in result.
7. User friendly interface.

SCOPE :

This system has a big scope to do. Students can maintain their information. Notifications are sent to students email addresses about the companies. Students can access previous information about recruitment. This project has a large scope as it has the following features which help in making it easy to use, understand and modify it:

- Automation of Placement Procedure
- No Need to do Paperwork
- To save the environment by using paper free work
- To increase the accuracy and efficiency of placement procedure
- Management of Student Data
- Analysis of overall Placement

1. USE CASE MODELLING

ACTORS :

ACTOR	DESCRIPTION
STUDENT (primary actors)	A student can register himself. After registration, he will be directed to his homepage. Here he can update his profile, see notices and see the examination details and all.
ADMIN (secondary actors)	The secondary actor who maintains the students and employer details and acts as the intermediate between student and the company
EMPLOYER (secondary actors)	A company can register itself, conduct online examinations, approve or disapprove candidates attending examinations and provide results about the selected candidates.

IDENTIFIED USE CASES:

PERFORM LOG IN : The system needs the actors to log in first, to use the system.

GET HELP : This is used as an extension to the perform login use case.

EDIT PROFILE: The students can upload their details which are required by the companies like AREA OF EXPERTISE , RESUME , CPGA etc which can be viewed by the companies to send notices. A student can edit his profile at any point of time to remove faulty information or change in his data uploaded.

CHECK NOTICE: The primary actors are able to check the notices which are sent by the companies that match their profile for the job.

REGISTER JOB: A student , after receiving the notice from the company can register for the vacancy position and can follow the set of instructions given by the employer.

UPDATE : If any faulty information is recorded, the student can edit/update his information in the system.

VIEW INFORMATION: The secondary actors (ADMIN , EMPLOYER) can view the details mentioned by the students in their profile.

SHORTLIST CANDIDATES: The Admin can shortlist profiles which are submitted by the students by removing profiles which don't meet the requirements of the respective employer.

TEST: A series of tests which are conducted by the company through the software within a limited timeframe and the validation is done automatically.

PUBLISH RESULTS: After the validation of the results , the students are shortlisted according to the pre conditions mentioned by the company. These shortlisted students can attend the interviews and follow the instructions from the company further.

MANAGE PLACEMENT : The Admin manages the overall placement process, anything that doesn't pertain to the rules is seen through.

INTERVIEW : The employer conducts an interview with the students who have cleared the aptitude test.

MANAGE STUDENTS : Admin can verify the students profile and notify if there is any faulty information and request them to update their profile to continue the place process.

MANAGE COMPANY : Admin can verify the company profile and notify if there is any faulty information and request the company to update the profile for further process.

VIEW JOB STATUS : The verified students can receive information about the process in applying for the job which are updated by the company and can receive notices about placement process.

POST JOB : The company can post the details , job vacancies and can recruit students.

CHECK NOTICE : The student can check for any notices about job vacancies and information related to the recruitment process.

PERFORM LOGOUT : Actors can log out of the system once they have performed required actions.

FULLY DRESSED USE CASES (for important ones):

1) USE CASE NAME : CREATE PROFILE

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : the student must have logged in to their respective registered account

STAKEHOLDERS & INTEREST :

STUDENT - Upload his resume , personal information and select his field of interest.

ADMIN - Can check the profile and send notice if he find any faulty information

EMPLOYER : After verified by admin , employer can send notice if the area of interest of student and employee requirement are matched

MAIN SUCCESS SCENARIO :

Student can log in to their registered accounts

- Student logs in to his profile
- Enters the required details

- Uploads resume through the software
- Edit faulty information which are notified by the admin during verification

EXTENSION (Failure case):

If login fails, the student can't create a profile, so the student must retry.

2) USE CASE NAME : CHECK NOTICE

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : Logged in to the registered account

STAKEHOLDERS & INTEREST :

STUDENT - Can check any notice regarding job offers , faulty information found by admins so that he has to update his profile or apply for a job, etc

ADMIN - Can send information regarding job vacancy , faulty info found in profile of students , jobs matching his profile , etc

MAIN SUCCESS SCENARIO :

- Student logs in
- After getting verified by admin students can receive notice
- View job offers , test dates , information interview sent by the companies

3) USE CASE NAME : REGISTER JOB

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : Matches his area of interest and should be a verified profile .

STAKEHOLDERS & INTEREST :

STUDENT - Register for a job offered by the company which matches his profile

EMPLOYER - Wants to hire employee for his company

MAIN SUCCESS SCENARIO :

- Student logs in to his verified profile
- Views jobs offered
- Gets notification for the job which matched his profile
- Registers for the vacant place offered by the company

EXTENSION :

- Can't register for a job if his profile does not meet requirements of the company.

4)USE CASE NAME : UPDATE

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

SECONDARY ACTORS: Employer, Admin.

LEVEL : User goal.

PRECONDITION : Notice sent from ADMIN regarding any faulty information

STAKEHOLDERS & INTEREST :

STUDENT - Can update his current information if there is any faulty information found.

MAIN SUCCESS SCENARIO :

The student has updated his profile with right information in his profile after being notified by the admin.

EXTENSION :

Check for mistakes and retry again

5)USE CASE NAME : VIEW INFORMATION

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

SECONDARY ACTORS: Employer, Admin.

LEVEL : User goal

PRECONDITION : Registered account of the student

STAKEHOLDERS & INTEREST :

ADMIN - To verify the final registered accounts and shortlist them according to the requirements of the job.

EMPLOYER : To find the area of expertise of students and to view their resume uploaded through the software system.

STUDENT : To view their finalized profiles.

MAIN SUCCESS SCENARIO :

- Able to view their finalized profile.
- The Admin can shortlist students based on viewing their profiles .
- The employer can view the profile of the students who are interested in the job and can access their resume.

6) USE CASE NAME : SHORTLIST CANDIDATES.

SCOPE : Campus recruitment system

ACTORS : Student,Admin

LEVEL : User goal

PRECONDITION : The student's account who has applied for the job must have been verified .

STAKEHOLDERS & INTEREST :

STUDENT - Can know if they are shortlisted or not.

ADMIN - Shortlists the students profile according to the requirements of the employer.

MAIN SUCCESS SCENARIO :

Shortlisted students can continue with the aptitude test.

EXTENSION : In case the profile is not shortlisted , the students placement procedure stops and the student must wait for another job vacancy notice.

7)USE CASE NAME : TEST

SCOPE : Campus recruitment system.

PRIMARY ACTORS : Student

SECONDARY ACTOR : Employer .

LEVEL : User goal.

PRECONDITION : The student must have been shortlisted by the admin.

STAKEHOLDERS & INTEREST :

STUDENT - Attend the entrance test to continue the placement process.

EMPLOYER - Conduct the aptitude test to filter out the students according to their performance

MAIN SUCCESS SCENARIO :

- If clears the test , can continue in the placement process

EXTENSION (failure case): Incase the performance is not satisfied, his placement procedure stops and the student must wait for another job vacancy notice.

8)USE CASE NAME : PUBLISH RESULTS

SCOPE : Campus recruitment system

ACTORS : Admin , Employer

LEVEL : User goal

PRECONDITION : The student must have cleared the aptitude test conducted by the employer

STAKEHOLDERS & INTEREST :

EMPLOYER - A list of shortlisted students is created by the employer based on the student's performance in the test.

MAIN SUCCESS SCENARIO :

- The shortlisted student list is sent to the admin
- The admin can manage the further placement process.

9) USE CASE NAME : MANAGE PLACEMENT

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : Students must have passed the aptitude test conducted by the employer.

STAKEHOLDERS & INTEREST :

ADMIN - Admin can notify the selected students who have cleared the test for the interview process.

MAIN SUCCESS SCENARIO :

The students selected for the interview process can be known.

EXTENSION :

If the student is not available for the interview process, his job opportunity

Is cancelled.

10) USE CASE NAME : INTERVIEW

SCOPE : Campus recruitment system

ACTORS : Student, Employer.

LEVEL : User goal

PRECONDITION : The student must have been cleared the test and must be available for the interview.

STAKEHOLDERS & INTEREST :

STUDENT - Interact with the interviewer and HRs of the placed company

EMPLOYER - One to one interaction with the selected students to know additional information about them and select accordingly.

MAIN SUCCESS SCENARIO :

- Final selected students list will be sent to the admin .
- The final selected students list can be published.

11) <u>USE CASE NAME : Manage student</u>

SCOPE : Campus recruitment system

ACTORS : Admin

LEVEL : User goal

PRECONDITION : The students profile must have been registered

STAKEHOLDERS & INTEREST :

STUDENT - To get the profile verified by the admin.

ADMIN - Admin checks for any faulty information and manages the profiles by removing them .

MAIN SUCCESS SCENARIO :

- The profile verified can only be used to access all the features that the system offers.

EXTENSION :

- If the profile is not verified by the admin , it has to be updated again

12) <u>USE CASE NAME : Manage company</u>

SCOPE : Campus recruitment system

ACTORS : Admin

LEVEL : User goal

PRECONDITION : The company profile must have been registered.

STAKEHOLDERS & INTEREST :

ADMIN - Admin checks for any faulty information and manages the profiles by removing them .

EMPLOYER - To get his account verified by the admin

MAIN SUCCESS SCENARIO :

- The profile verified can only be used to access all the features that the system offers

EXTENSION :

- If the profile is not verified by the admin , it has to be updated again

13) USE CASE NAME : Check notice

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : Must have a registered account.

STAKEHOLDERS & INTEREST :

STUDENT - The student can check for any notices about job vacancies and information related to the recruitment process.

MAIN SUCCESS SCENARIO :

- The students get notified and can act accordingly.

14) USE CASE NAME : View Job Status

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : The student must have applied for the job .

STAKEHOLDERS & INTEREST

STUDENT - The student can know how far they reached in the placement process.

MAIN SUCCESS SCENARIO :

- The student can receive information about the process in applying for the job and being called for the placement process.

15) USE CASE NAME : Post job

SCOPE : Campus recruitment system

PRIMARY ACTORS : Student

LEVEL : User goal

PRECONDITION : The company must have registered and verified by the admin.

STAKEHOLDERS & INTEREST

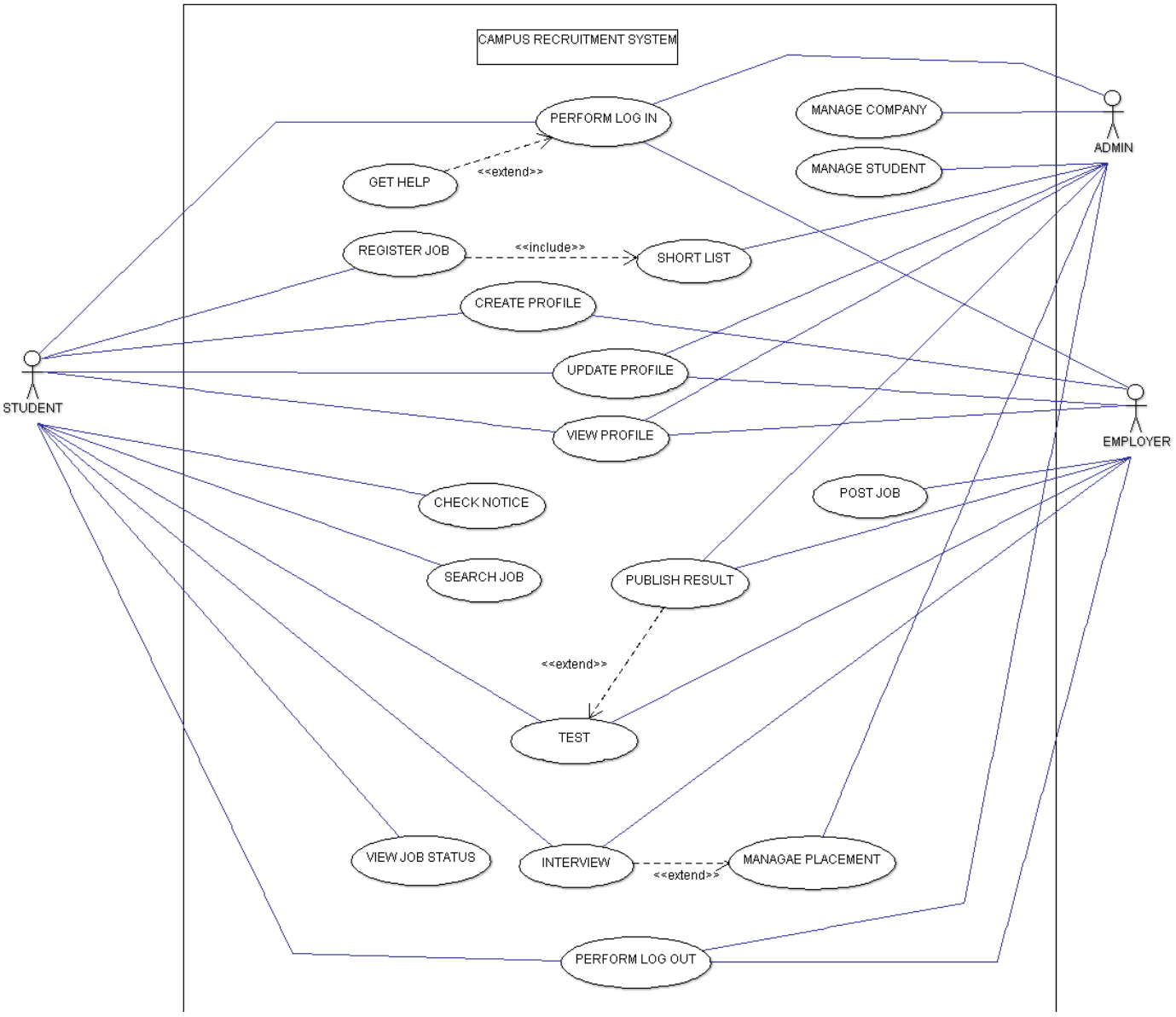
STUDENT - The student can know about the job vacancies and apply.

EMPLOYER - The company can post the details and job vacancies and can recruit students.

MAIN SUCCESS SCENARIO :

- The job posted can be notified to the students.

USE CASE DIAGRAM :



2. DOMAIN MODELLING

IDENTIFIED CLASSES :

Campus	admin	employer	company	student
Job	feedback	issue	notice	profile
Test	placement	interview	verify	result
Resume	upload	shortlist	person	recruitment system

REFINED CLASSES :

GOOD CLASSES

admin	company	student
Job	profile	result
Test	placement	interview
person	recruitment system	

ATTRIBUTES (excluded)

verify	notice	Resume	upload	shortlist

ROLES (excluded)

employer

IRRELEVANT (excluded)

Campus	feedback	issue

DATA DICTIONARY :

ADMIN : Manages overall proceedings of the placement system and verifies the data uploaded by the students and the company for further processing.

COMPANY : Manages hiring procedure of the students through the recruitment software.

STUDENT : Can create a profile and apply for the job which matches his profession. The student must attend the aptitude test conducted by the company and must clear the test to attend the interview held by the employer in the particular company.

JOB : Paid position in the company for the candidates who are selected through the series of tests and interview.

PROFILE : A student maintains a profile which includes his qualification , field of interest , work experience etc. students can upload their resume in their profile which can be further verified by the admins.

RESULT : Results are published by the Admins which includes the details of the students who cleared the test round and are selected through the interview process.

PLACEMENT : Maintains all the operations of the placement. Company conducts a test and the interview process is held for the student selection .

TEST : Tests are conducted by individual companies based on the job they offer, it has attributes like grade scored by the student and a final report to indicate the student’s performance.

INTERVIEW : A part of the final placement process, which checks performance .

PERSON : Has common Attributes , it is the base class for student , admin and company.

RECRUITMENT SYSTEM : Checks for verification of the persons and maintains placement.

ATTRIBUTES :

ADMIN	• Verify student details • Notification • Shortlist • Post report • Manage company
COMPANY	• Package • Post job • Update details • Create report
STUDENT	• View notice • Department • Resume • Gender • Qualification • Check status • Attend placement
JOB	• Job type • Job name • Vacancies • Description
PROFILE	• Update • Edit • Delete • Create
RESULT	• Selected candidates • Approve recruitment • Reject recruitment
TEST	• Grade

	• Results
PLACEMENT	• Test code • Placement ID • Placement student's id
INTERVIEW	• Check performance
PERSON	• Name • User ID • Email • Password • Age
RECRUITMENT SYSTEM	• Check (user id ,password) • Recruitment code

ASSOCIATION and MULTIPLICITY :

ASSOCIATION : Company *hires* students (1..*).

JUSTIFICATION : Each company which uses this RECRUITMENT SYSTEM SOFTWARE can hire one or more students.

ASSOCIATION : Students *register* Jobs (1, 1..*).

JUSTIFICATION: Each and every student can register for one or many jobs which are posted by the company.

ASSOCIATION : A company *offers* Job (1,1..*).

JUSTIFICATION : A company can offer as many as job roles to the students to register.

ASSOCIATION : Student *has* a Profile (1,0..1).

JUSTIFICATION : Each student can have only one profile . a new user has no profile , so they have to create a profile to continue the process

ASSOCIATION : Admin *verify* Profile (1,1..*).

JUSTIFICATION : Each and every admin present can verify any number of profiles which are created by the students.

ASSOCIATION : Company *checks* Profile (1,1..*).

JUSTIFICATION : All companies can reach any number of profiles which are verified by the admins after the creation.

ASSOCIATION : Recruitment system *checks* Person.

JUSTIFICATION : The RECRUITMENT SYSTEM checks the Person's user Id and password in order to login to their respective accounts to continue the process through the software.

ASSOCIATION : Recruitment system *maintains* Placements.

JUSTIFICATION: RECRUITMENT SYSTEM will maintain all the information and data and runs the placement process.

ASSOCIATION : Admin *manages* Placements (1..*,1..*).

JUSTIFICATION : Admins can also manage the placement process and maintain records about the placements.

ASSOCIATION: Admin *publishes* Results (1..,1..*).

JUSTIFICATION: After the placement process gets over , Admins can publish the results which contains the list of student's details who are selected for the job.

ASSOCIATION: Students *attend* Placements (1,1..*).

JUSTIFICATION: Each Student can attend the placement process which they have registered for and continue the procedures.

ASSOCIATION: Company *conducts* Placements (1,1..*)..

JUSTIFICATION : Companies can conduct one or more placement process through the RECRUITMENT SYSTEM depending on the vacancies in job roles.

ASSOCIATION : Job *requires* profile

JUSTIFICATION : A student or a company has to access their profile first , to use the Job class.

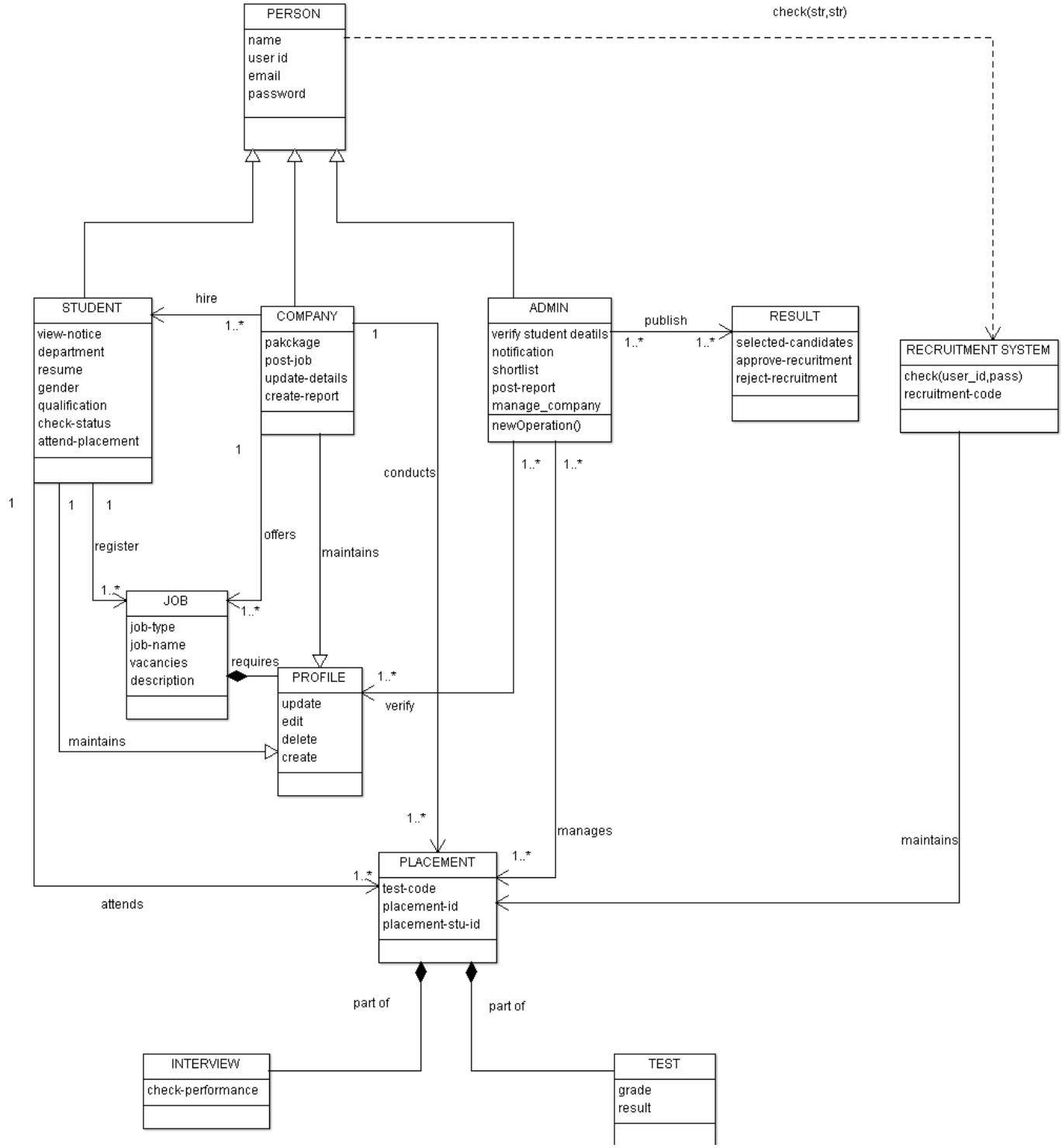
ASSOCIATION : Test *is a part of* placement.

JUSTIFICATION : The first step in the placement process is to take up a test.

ASSOCIATION : Interview *is a part of* placement.

JUSTIFICATION : The final step in the placement process is to attend the interview .

DOMAIN MODEL :



3. CLASS MODELLING

METHODS USED IN CLASS MODEL :

Admin

setNotice()	Admin can set notice about any updated information given by the company.
verifyAccount( )	Admins can verify accounts registered by students for any faulty information.
addReport()	They can add reports about the placement process , performance of students , etc..
addResults()	After the test round , admins can post the results of students.

Company

addPackage()	Companies can add details about the job they are offering.

updateDetails()	Can modify the existing details to the updated version.
getReport()	Used to get the student's report about their performance throughout the placement process.
addJob()	Used to add jobs which are available along with their details.

Student

addResume()	Students can upload their resume .
getDepartment()	To get detail about their department.
getGender()	To get the gender of the students.
checkStatus()	Used to check the activity status of the account.
getNotice()	Students can get notice from admins and companies regarding any job vacancies , test dates , interviews , etc..

Job

getJobInfo()	To retrieve information regarding the jobs posted by the company.
getVacancies()	Used to get vacancies details updated by the company.
register( )	A student can register for jobs
addDescription()	Companies can add details about the jobs offered.

Profile

updateProfile( )	Used to change or add any information in the profile maintained by an individual.
edit profile( )	A profile can be edited if required
deleteProfile( )	Used to delete the profile.
createProfile( )	Used to create a new profile.

Result

listSelectedStudents()	To list the selected students who cleared the aptitude test round.
getRecruitmentDetail()	Used to get details about the recruitment process through the recruitment system.

Test

getGrade()	Used to obtain the grades.
getResult()	Used to get the end results.
getTestReport()	Used to generate a final report of the placement process.

Placement

addTestCode()	To add a test code conducted by the company.
getTestCode()	To retrieve the test code.
getPlacementID()	To obtain placement id which are unique for each placement conducted by the company.
getPlacementStuID()	To obtain the placement ID of students.
addPlacementStuID()	To add placement students ID.

Person

viewDetail()	To get details about the individuals for further processing and verification.
getName()	To get the name of the user.
setName()	To set a name in the profile.
getAge()	To get the age of the person.
createAccount()	To create an account in the software.
deleteAccount()	To remove the account.

setPassword()	To set or reset the password for the account.

System

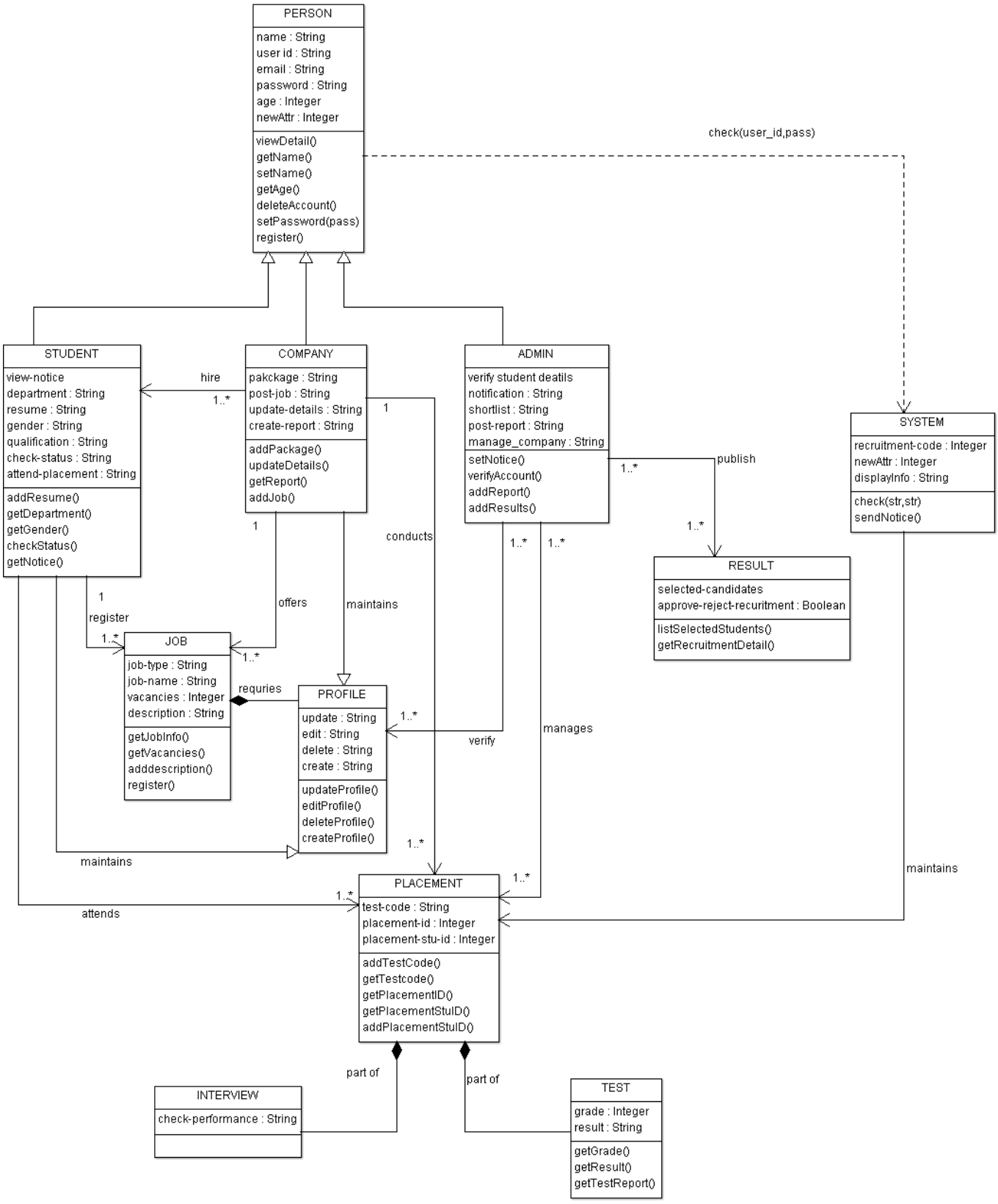
check(str,str)	The system can validate the actor's accounts in the system
send notice()	The system can send notices when required

CRC TABLE :

CLASS	**RESPONSIBILITY**	**COLLABORATION**
ADMIN	Manages overall proceedings of the placement system and verifies the data.	Student, Company,Profile,Result
COMPANY	Manages hiring procedure of the students through the recruitment software.	Student,Profile,Job,placement
STUDENT	Can create a profile and apply for the job.	Placement,Profile,Job
JOB	Paid position in the company for the candidates who are selected through the series of tests and interviews.	Student,Company,Profile
PROFILE	Including his qualification , field of interest , work experience etc. students can upload their resume in their profile which can be further verified by the admins.	Student,Company,Admin
RESULT	Includes the details of the students who cleared the test round and are selected through the interview process.	Admin.
TEST	Tests are conducted by individual companies based on the job they offer, it has attributes like grade scored by	Placement, Company,Student.

	the student and a final report to indicate the student's performance.	
PLACEMENT	Maintains all the operations of the placement. Company conducts a test and the interview process is held for the student selection .	Admin, Company,Student
INTERVIEW	A part of the final placement process, which checks performance .	Placement, Company,Student.
PERSON	It is the base class for students , admin and company.	Student,Admin,Company
RECRUITMENT SYSTEM	Checks for verification of the persons , sends notification and maintains placement	Person

CLASS DIAGRAM :



4. SEQUENCE DIAGRAM

Sequence Diagrams are interaction diagrams that detail how operations are carried out. They capture the interaction between objects in the context of a collaboration. Sequence Diagrams are time focused and they show the order of the interaction visually by using the vertical axis of the diagram to represent time, what messages are sent and when.

Purpose of Sequence Diagrams :

- Model high-level interaction between active objects in a system
- Model the interaction between object instances within a collaboration that realizes a use case
- Model the interaction between objects within a collaboration that realizes an operation
- Either model generic interactions (showing all possible paths through the interaction) or specific instances of a interaction (showing just one path through the interaction)

SOME IDENTIFIED SCENARIOs and Their System Sequence Diagram:

- INTERACTION's : Profile management
  Search for Jobs
  Apply for Jobs
  Placement Process

NOTE :

- All classes have been used in the following four system sequence diagrams.
- Notes have been included for further clear clarity on messages
- All have been drawn using the StarUml tool.

SEQUENCE DIAGRAM FOR PROFILE MANAGEMENT :

Actors involved :

Student, Admin and Company.

Classes involved :

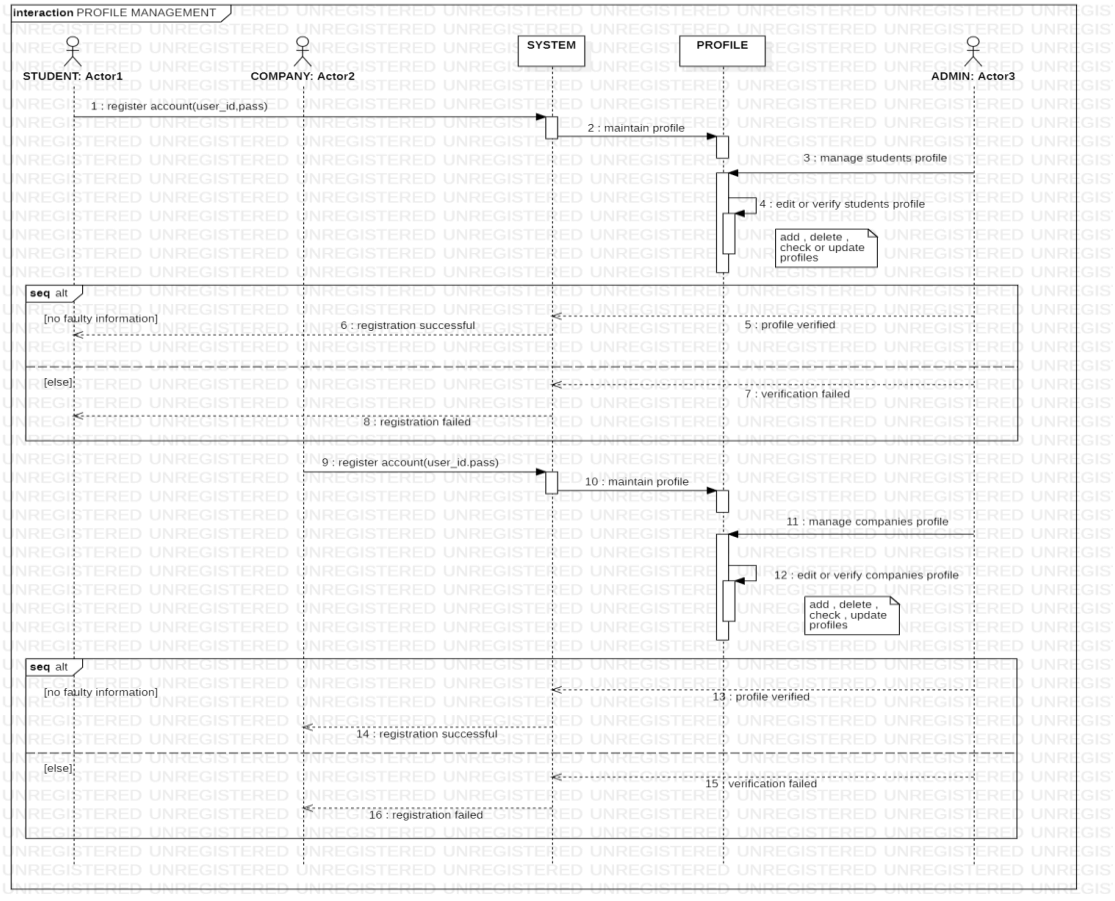
System , Profile.

Two alternate flow's have been included

- To notify whether profile registration is complete or not for the student.
- To notify whether profile registration is complete or not for the student

Description :

The Profile management scenario will be common for the student and the company where both register their accounts in the campus recruitment system , and the accounts are also verified by the Admin for any faulty information. The system notifies the student and the company on their registration status.



SEQUENCE DIAGRAM TO SEARCH JOBS :

Actors involved :

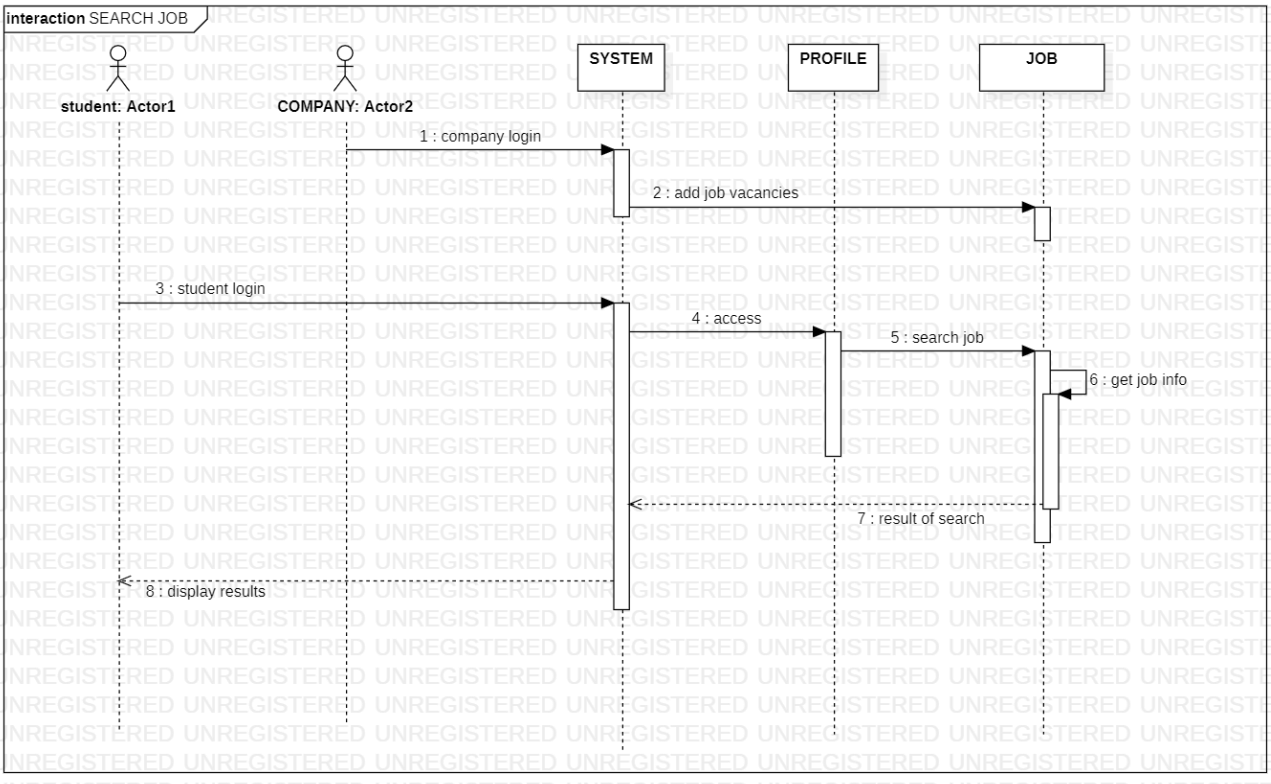
Student , Company.

Classes involved:

System , Profile, Job.

Description :

The student can search for jobs by maintaining a profile in the recruitment system after logging in . Likewise , a company can post job vacancies in the Campus recruitment system.



SEQUENCE DIAGRAM TO APPLY FOR JOBS :

Actors involved :

Student , Admin , Company.

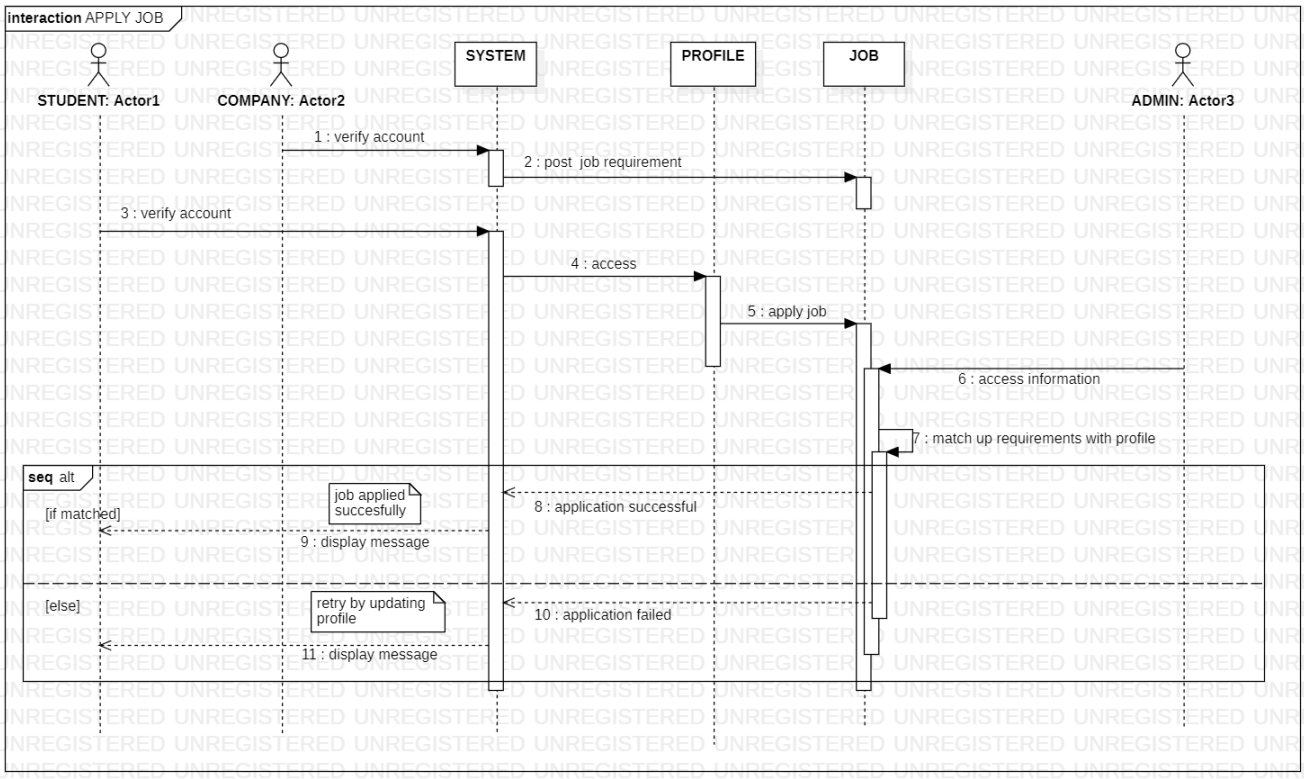
Description :

The student can apply for a Job using their profile , after verifying their account in the system .
The company also does post its job requirements needed for placement. The role of the Admin in this scenario is to match up requirements with the profile's maintained by students.

- A alternate flow has been used if a student's profile has not met requirements posted by company, the student can retry after updating their profile

Classes involved :

Profile , Job , System.



SEQUENCE DIAGRAM FOR PLACEMENT PROCESS :

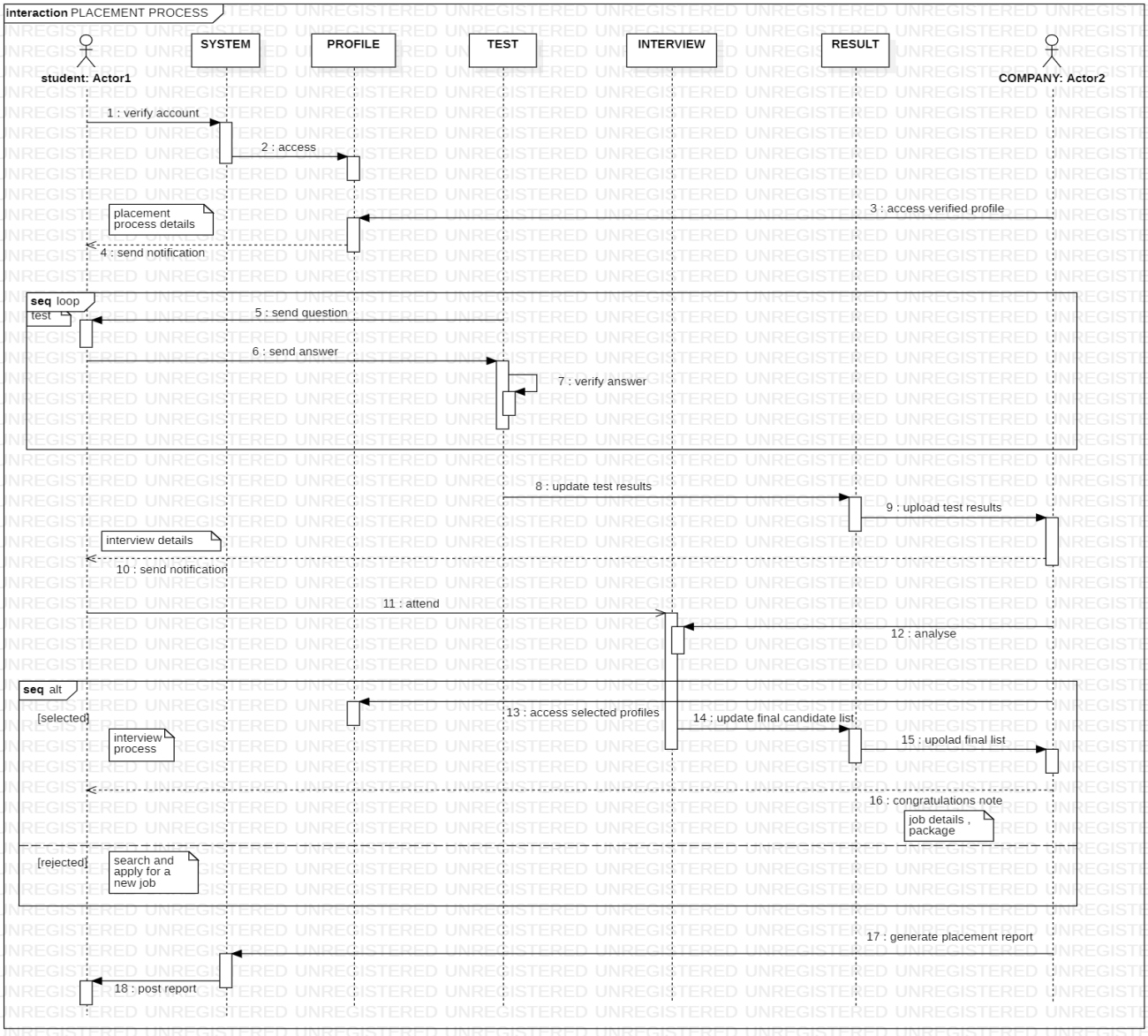
Actors involved : Student , Company.

Description :

This scenario is based on the placement process where, Student's whose profiles are verified by the admin undergo a test and an interview and their performance is analysed and updated in their profiles . Finally , the actor generates the complete report of the placement process.

- For the test, a loop has been used (to question and to answer)
- An alternate case has been used to decide whether a student is selected or rejected.

Classes involved : System , Profile , Test , Interview , Result



5. STATE MACHINE DIAGRAM

A state diagram is used to represent the condition of the system or part of the system at finite instances of time. It's a behavioural diagram and it represents the behaviour using finite state transitions. State diagrams are also referred to as **State machines** and **State-chart Diagrams**. These terms are often used interchangeably. So simply, a state diagram is used to model the dynamic behaviour of a class in response to time and changing external stimuli. We can say that each and every class has a state but we don't model every class using State diagrams. We prefer to model the states with three or more states.

Uses of state-chart diagram :

1.We use it to state the events responsible for change in state
2. We use it to model the dynamic behaviour of the system .
3. To understand the reaction of objects/classes to internal or external stimuli.

State Diagram :

1. State diagram - Student
2. State diagram - Profile
3. State diagram - Job

State Machine diagram for Student :

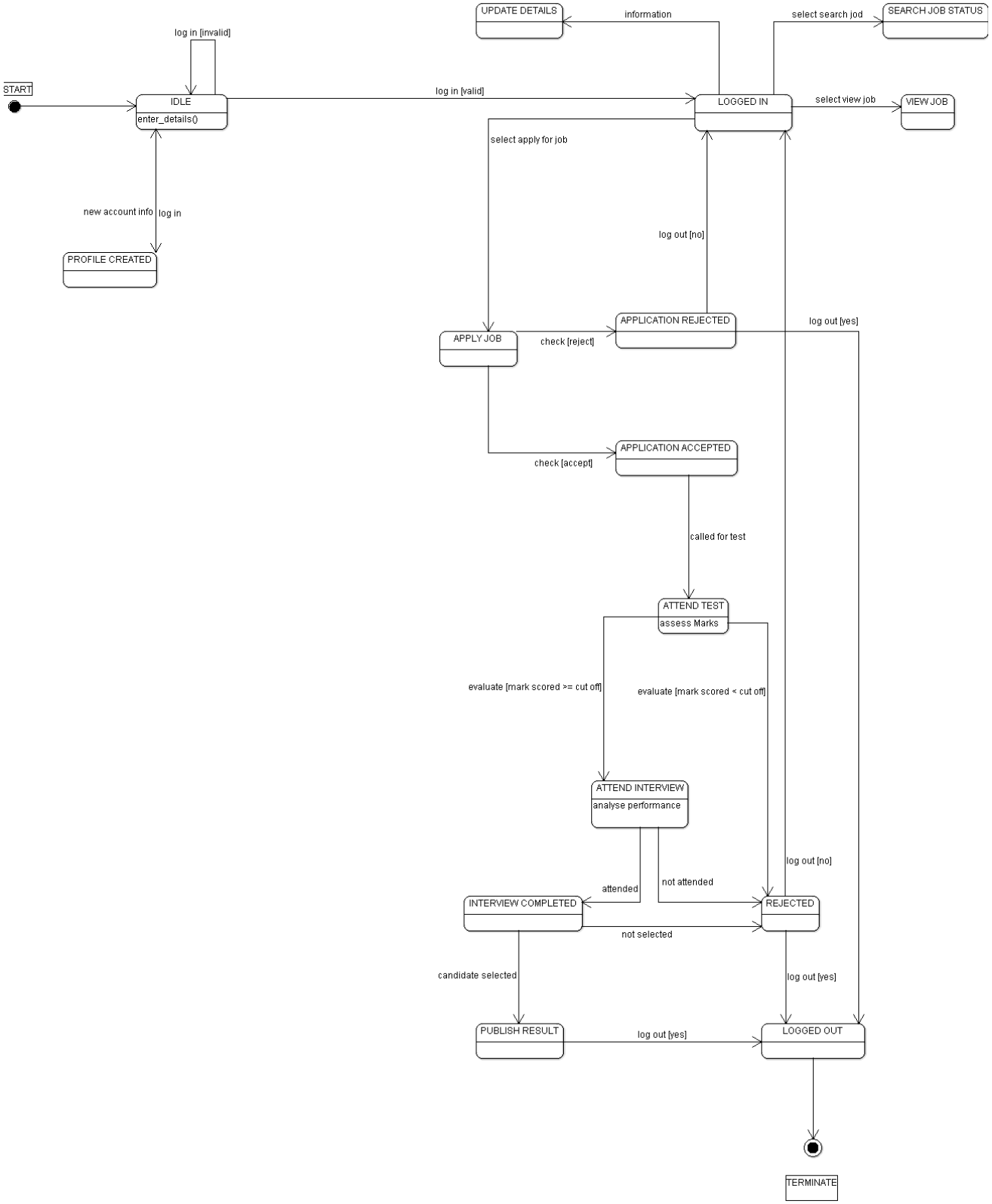
STATES INVOLVED :

IDLE	PROFILE CREATED	UPDATE DETAIL
VIEW JOB	LOGGED IN	SEARCH JOB STATUS
APPLY JOB	APPLICATION REJECTED	ATTEND TEST
APPLICATION ACCEPTED	ATTEND INTERVIEW	INTERVIEW COMPLETED
REJECTED	PUBLISH RESULT	LOGGED OUT

DESCRIPTION :

In this state diagram , the following steps take place :

1. The student has logins in from idle state.
2. There are many options present once logged in , a student can update details, check job status, view for jobs and apply .
3. If applied for a job , the application is accepted / rejected.If accepted the student is called for a test.
4. Else , the student has the option of staying in or logging out.
5. Based on the performance in the test , a student is called for an interview or can log out.
6. After analysing a student in the interview , the student is either rejected or if selected , The results are published.


START
IDLE
enter_details()
log in [invalid]
log in [valid]
UPDATE DETAILS
information
SEARCH JOB STATUS
select search jod
LOGGED IN
select view job
VIEW JOB
select apply for job
new account info
log in
PROFILE CREATED
log out [no]
APPLY JOB
check [reject]
APPLICATION REJECTED
log out [yes]
APPLICATION ACCEPTED
check [accept]
called for test
ATTEND TEST
assess Marks
evaluate [mark scored >= cut off]
evaluate [mark scored < cut off]
ATTEND INTERVIEW
analyse performance
log out [no]
attended
not attended
INTERVIEW COMPLETED
REJECTED
not selected
candidate selected
log out [yes]
PUBLISH RESULT
log out [yes]
LOGGED OUT
TERMINATE

State Machine diagram for Profile :

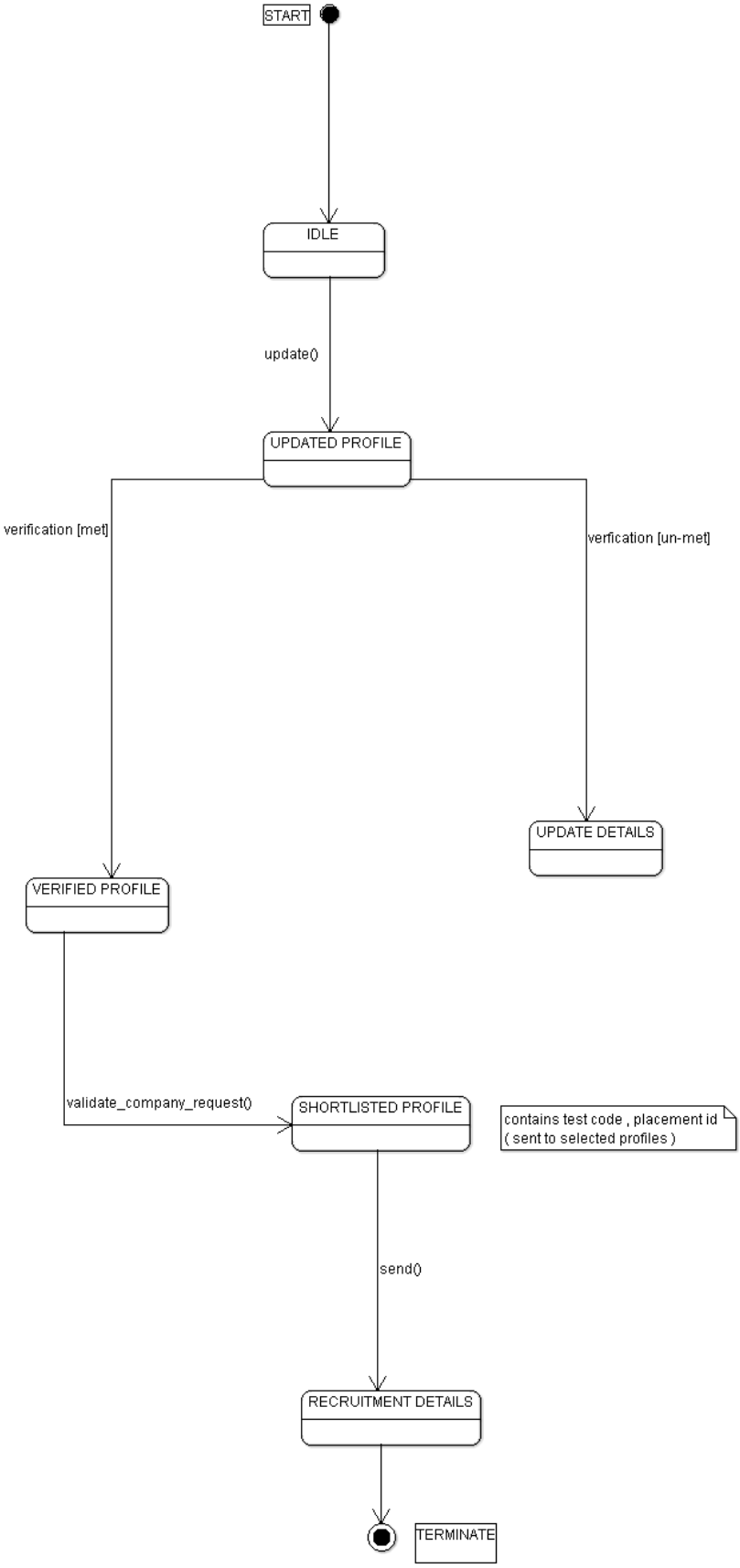
STATES INVOLVED :

IDLE	RECRUITMENT DETAILS
PROFILE	UPDATED PROFILE
UPDATE DETAIL	VERIFIED SHORTLISTED PROFILE

DESCRIPTION :

In this state diagram , the following steps take place

1. A profile can be updated or created .
2. The profile is matched up with requirements by the company.
3. If met , the profile becomes a verified profile. And can be shortlisted by the company.
4. If not, the profile must be updated again.
5. The recruitment details are sent to shortlisted profiles and the diagram terminates.


START
IDLE
update()
UPDATED PROFILE
verification [met]
verfication [un-met]
UPDATE DETAILS
VERIFIED PROFILE
validate_company_request()
SHORTLISTED PROFILE
contains test code , placement id
(sent to selected profiles)
send()
RECRUITMENT DETAILS
TERMINATE

State Machine diagram for Job :

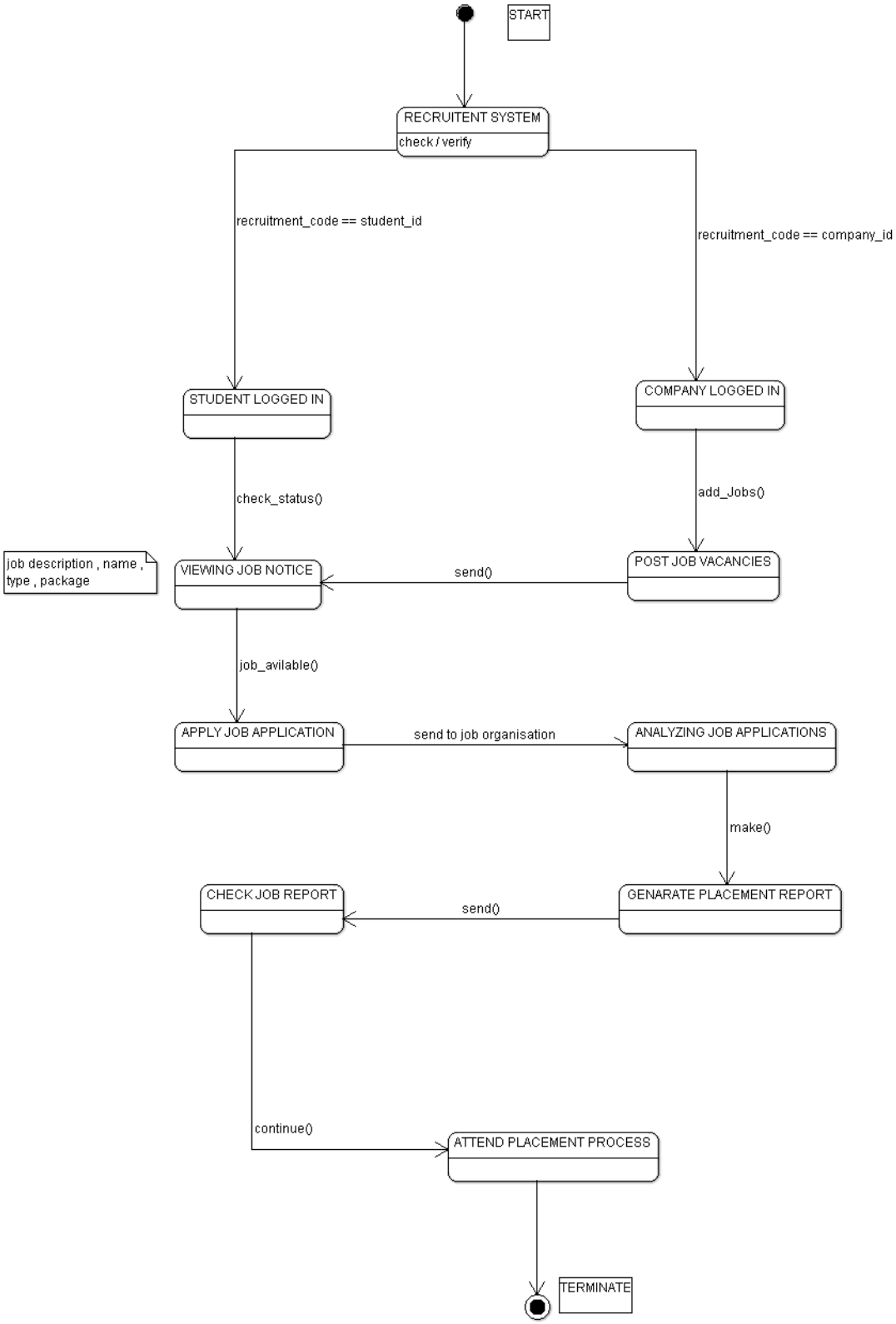
STATES INVOLVED :

RECRUITMENT SYSTEM	STUDENT LOGGED IN
COMPANY LOGGED IN	VIEW JOB NOTICE
POST JOB VACANCIES	APPLY JOB APPLICATION
ANALYSE JOB APPLICATION	GENERATE PLACEMENT REPORT
CHECK JOB REPORT	ATTEND PLACEMENT PROCESS

DESCRIPTION :

In this state diagram , the following steps take place

1. The student’s and the company’s accounts are firstly verified using their recruitment code.
2. The company can then post job vacancies, and student’s can check the job vacancies as notices in the system.
3. The student can apply for the job and the job application is analysed by the company.
4. The company then generates a placement report which is notified to the students .
5. If a student is selected for a Job, the student can continue with the placement process.


START
RECRUITENT SYSTEM
check / verify
recruitment_code == student_id
recruitment_code == company_id
STUDENT LOGGED IN
COMPANY LOGGED IN
check_status()
add_Jobs()
job description , name , type , package
VIEWING JOB NOTICE
send()
POST JOB VACANCIES
job_avilable()
APPLY JOB APPLICATION
send to job organisation
ANALYZING JOB APPLICATIONS
make()
CHECK JOB REPORT
send()
GENARATE PLACEMENT REPORT
continue()
ATTEND PLACEMENT PROCESS
TERMINATE

6. ACTIVITY DIAGRAM

It is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. The basic purpose of activity diagrams is to capture the dynamic behaviour of the system.. It is also called object-oriented flowchart.

This UML diagram focuses on the execution and flow of the behaviour of a system instead of implementation. Activity diagrams consist of activities that are made up of actions that apply to behavioural modelling technology.

ADVANTAGES OF USING ACTIVITY DIAGRAM **:**

Activity diagrams present a number of benefits to users. Consider creating an activity diagram to:

- Demonstrate the logic of an algorithm.
- Describe the steps performed in a UML use case.
- Illustrate a business process or workflow between users and the system.
- Simplify and improve any process by clarifying complicated use cases.
- Model software architecture elements, such as method, function, and operation.

ACTIVITY DIAGRAMS DRAWN FOR :

1. Searching and Applying for a Job.

2. Placement Process.

3. Managing the Profile.

1. Activity diagram to Search and Apply a Job.

DESCRIPTION :

The activity focused here is to search and apply for a job. Firstly , The student must access their respective profile to search for a job and apply for it. The profile is submitted and the details are firstly verified , and then checked if the profile submitted is suitable for job qualifications. If yes, the recruitment details are sent to the registered and approved profiles, which completes the job applying activity.

PRE-CONDITION (START) : The student is registered.

Decisions involved :

- Login

  check [valid] : access profile

  check [invalid] : login

- Search job

  wants to apply job [yes] : Fill all the details(application)

  wants to apply job [no] : terminate

- Verify details

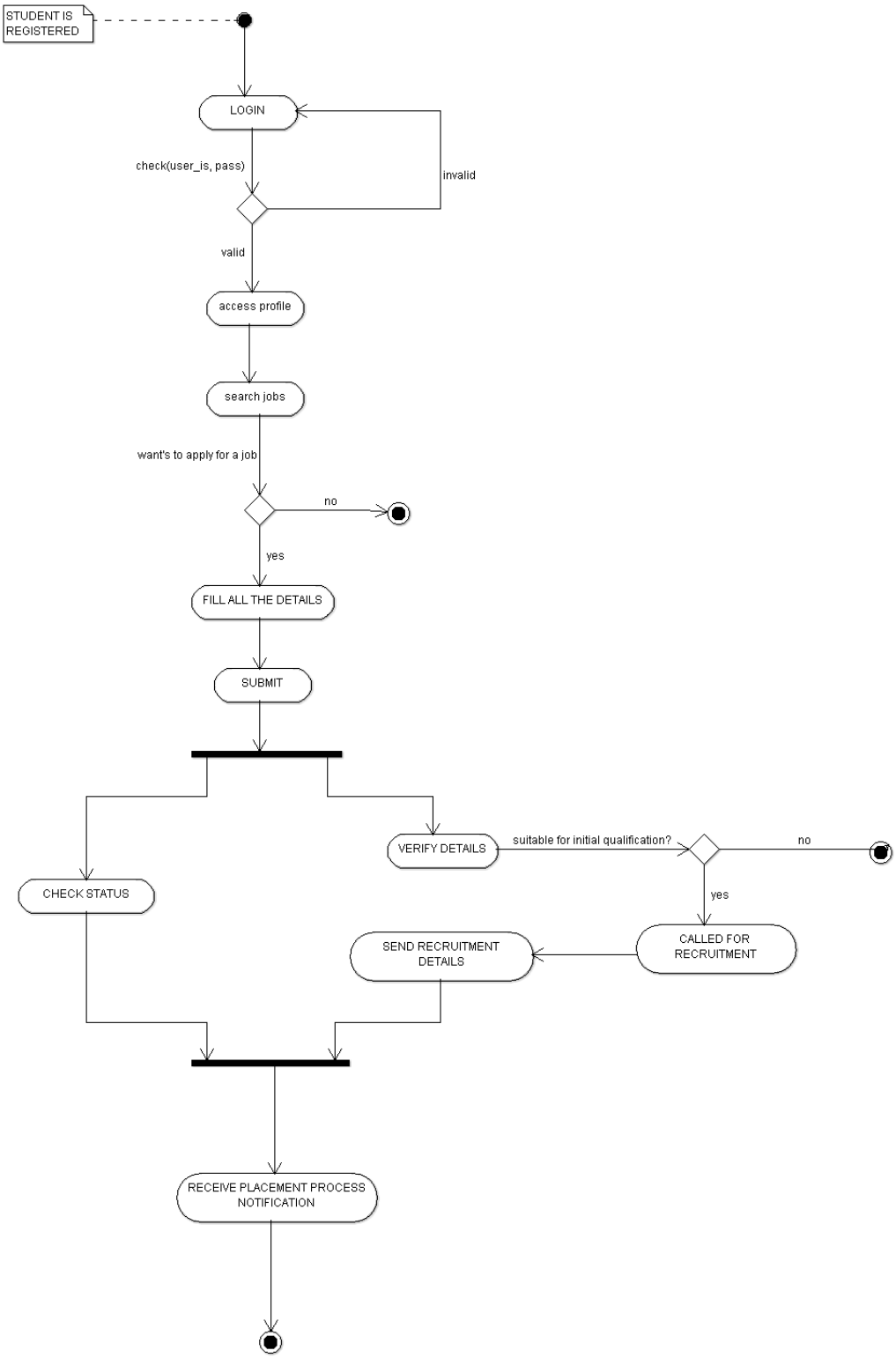
  suitable for initial qualification [yes] : called for recruitment

  suitable for initial qualification [no] : terminate

NOTE :

Fork is used after a student submits the application , and it's sent to the employer . While the students wait for the status about the application till it is being returned by the employer.

Join is used to merge two action states i.e check status and recruitment details sent .


STUDENT IS REGISTERED
LOGIN
check(user_is, pass)
invalid
valid
access profile
search jobs
want's to apply for a job
no
yes
FILL ALL THE DETAILS
SUBMIT
VERIFY DETAILS
suitable for initial qualification?
no
yes
CHECK STATUS
CALLED FOR RECRUITMENT
SEND RECRUITMENT DETAILS
RECEIVE PLACEMENT PROCESS NOTIFICATION

2. Activity diagram for Placement Process.

DESCRIPTION :

The Placement process activity begins after a student is called for recruitment after being verified and approved by the company. The student logs into the system and then takes up a test . Based on the marks scored, a student is called for an interview and the performance is analysed. If the employer is satisfied by the performance, a contract proposal is signed by the student and finally a placement report is generated.

PRE-CONDITION (START) : The student must have been called for recruitment .

Decisions involved :

- Login

  check [valid] : access profile

  check [invalid] : login

- Evaluate test

  cleared [marks scored >= cut off] : Attend interview

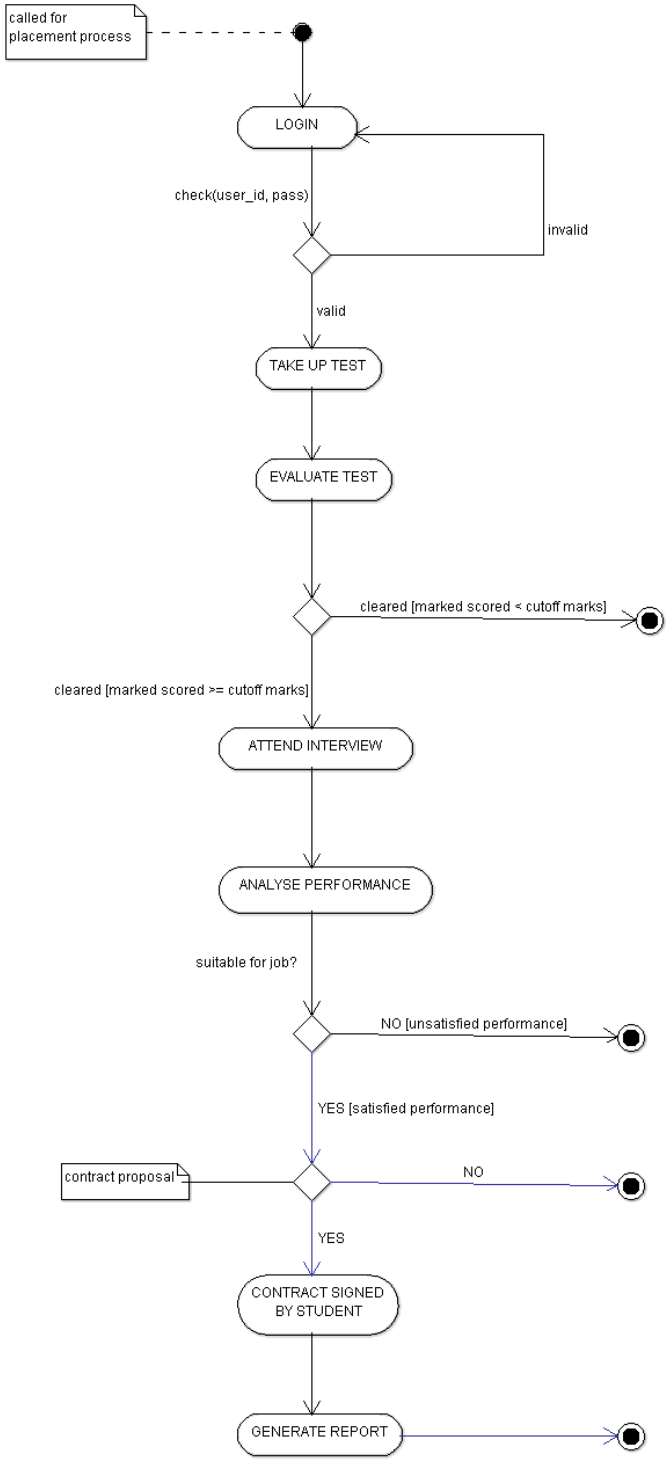
  not cleared [marks scored < cut off] : Terminate

- Analyse performance

  suitable for a job ? [no] : Terminate

  suitable for a job ? [yes] : contract proposal [yes] : Contract signed by student

  contract proposal [no] : Terminate


called for
placement process
LOGIN
check(user_id, pass)
invalid
valid
TAKE UP TEST
EVALUATE TEST
cleared [marked scored < cutoff marks]
cleared [marked scored >= cutoff marks]
ATTEND INTERVIEW
ANALYSE PERFORMANCE
suitable for job?
NO [unsatisfied performance]
YES [satisfied performance]
contract proposal
NO
YES
CONTRACT SIGNED
BY STUDENT
GENERATE REPORT

•

3. Activity diagram for managing profiles :

DESCRIPTION :

The profile management activity involves both primary and secondary actors , All three actors i.e student, admin and company logs into the system. And their respective activities based on profile management are carried out . The student views and updates the profile , and can proceed with the flow using the profile or can log out. Similarly, the admin can post job vacancies , short list candidates or mail students. The admin manages profiles , can add profiles or view reports of profiles created. The termination will be logging out of the system.

Decisions involved :

- Login

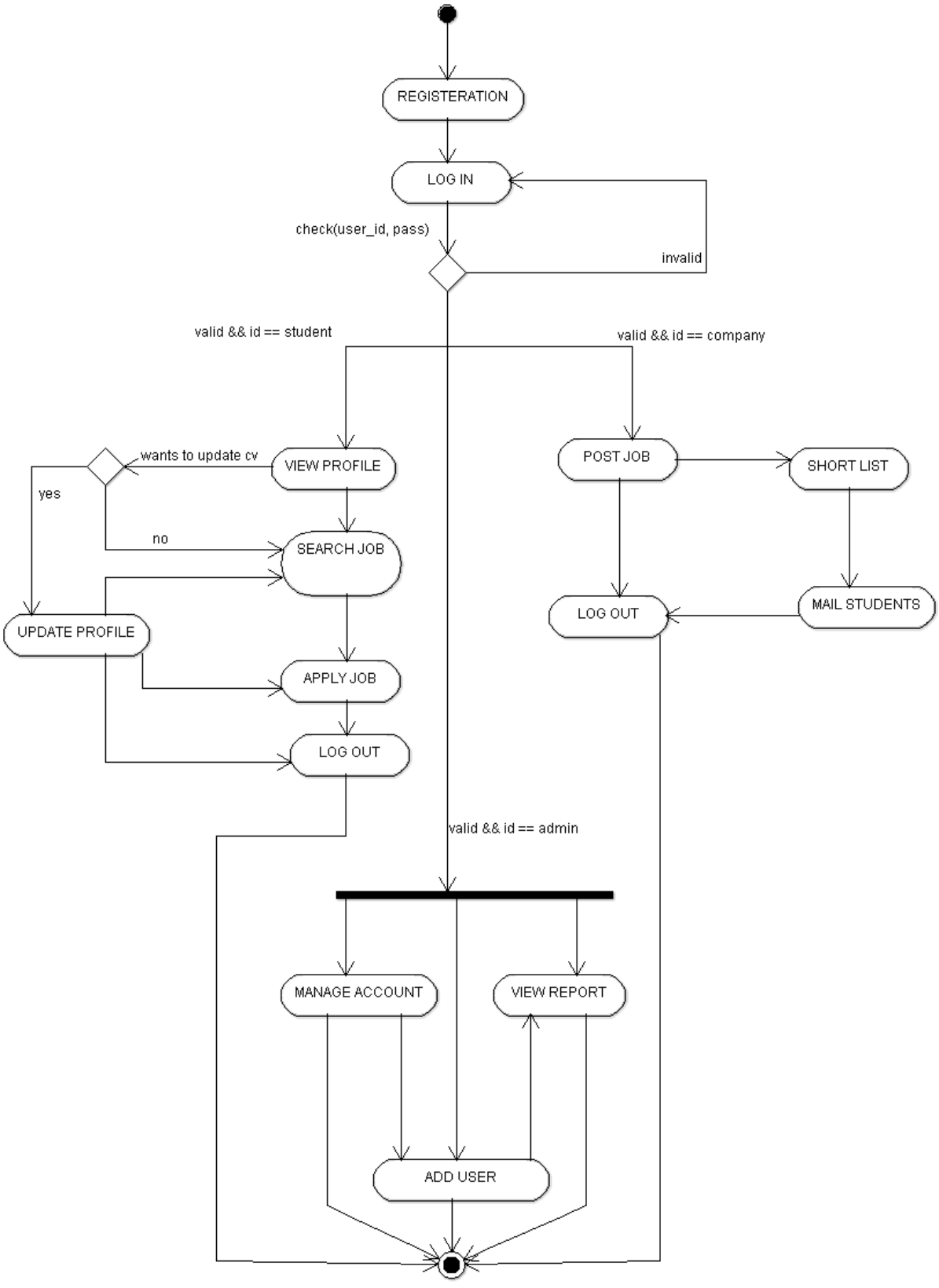
  check [valid] : access profile

  check [invalid] : login

- viewprofile

  wants to update profile [yes] : Update profile

  wants to update profile [yes] : Search job


REGISTERATION
LOG IN
check(user_id, pass)
invalid
valid && id == student
valid && id == company
wants to update cv
VIEW PROFILE
yes
no
SEARCH JOB
UPDATE PROFILE
APPLY JOB
LOG OUT
POST JOB
SHORT LIST
LOG OUT
MAIL STUDENTS
valid && id == admin
MANAGE ACCOUNT
VIEW REPORT
ADD USER

CONCLUSION :

Increasing need of comfort and inculcating all the data at one place has always been a challenging process for everybody. With the introduction of this web based training and placement portal we promise to make the lives of students and administration a little easier by proposing an alternative for the current system being used. Easy accessibility and functioning of this portal will allow easy management of the allocation process during the placement period. With the increasing demand of digitalization in every aspect of day to day activities we can anticipate the great demand for such portals in the near future and the comfort it will bring with it to the lives of all. Also the rapidly increasing concerns of global warming due to increased deforestation for the large amount of paper that it requires we here have a minor role to save Mother Nature. So we hope all of you can sit back and relax and enjoy the luxury of Digitalization. More so in this busy and exhausting life we are saving one of the most crucial factor that keeps us running that is human energy