Internship Portal

- Database Project Design

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Overview

The Internship Portal is used heavily during the Internships Season at IITB, however we need a lot of improvements in it. Improvements are needed in both the graphical interface and the kinds of queries possible. Many essential functionalities can be added. Verification of resumes submitted by students is an important activity, and has to be completed before commencement of Internships season, and right now there is no interface available in the portal to automate the verification process. Hence this process of verifying different points mentioned in resumes is a tedious manual process where students have to separately mail the proofs and get resumes verified. We plan to automate and streamline this process, so that both the verifying authorities and students are benefitted.

Also, when students sign for different companies, we would like to display some informative facts and reviews about the companies by previously selected students for the respective companies. We plan to add this feature to the portal, and hope that this will help the students considerably in the decision process of signing for the company. Thus we have chosen to design and implement the database for this portal.

Goals

1. We are planning to design Internship Portal for IITB, so that the current portal is improvised. We plan to insert features so as to get all different kinds of queries possible.
2. Introduce a new module in the existing design to automate the process of resume verification
3. Introduce a new module to collect the reviews of different companies from the finally shortlisted students after completion of their respective internships and meaningfully display the trends in reviews to the future batches of students who might want to apply for the same company
4. Also, we should be able to generate statistics for different batches, companies, etc., which will be helpful in various managerial aspects of the internship recruitment process, like scheduling order of companies.

Table Design

Tables and their attributes in Database:-

1) **Student Related Tables**: Following tables are related to student. 'Student Placement Details and 'Files' are two weak entity sets and dependent of Student Personal Details.
    a) **Student Personal Details:** Attributes include *ID* (primary key), *Name, Roll Number, Department, Program, Category, Matriculation percentage and Intermediate/+2 percentage, password*
    b) **Student Placement Details**: Attributes include *ID* from the 'Student Personal Details' as primary key formed along with *Year* and *Semester* from table 'Time Intervals', *CPI* (could be used for companies who want to sort students CPI-wise), *Preference_of_intern* which indicates preference order of internship offers, and a boolean attribute is_job_assigned which indicate whether a job is assigned to student
    c) **Files**: Attributes include *ID* from the 'Student Personal Details' as primary key,*Resume* which holds pointer to Resume uploaded by student. Similarly we have pointers to *SOP* and Profile *photo.*

2) **Company**

    d) Attributes include *ID* (unique ID for the company as primary key), *Name, Information* (text field describing important company details), *Category* (I1, I2, I3 or I4 as possible categories of company based on various factors like student preference for the company, company valuation etc.)
    e) This table stores details for a company participating in the internship recruitment.

3) **Internship_application_form**

    a) Attributes include *IAF_id* (which uniquely identifies a form corresponding to a company and hence forms primary key with company ID since it is a weak entity set), *ID* (from table Company), *Profile* (could be Finance, Software etc.), *Job_description*(String to hold specific job description), *Salary, CPI cutoff, Selection_process* (string to hold the selection process details of company), *opens_on* (Date and time when IAF is opened for students), *closes_on* (Date and time when IAF closes for students)

b) This is weak entity dependent on Company. Every company basically adds one or more IAF's for the different job roles that they are offering.

4) **Shortlisted_candidates**

a) This is weak entity dependent on 'Student Personal Detail' and 'Internship_application_form'. Thus attributes *ID* and *IAF_id* from the respective strong entities form primary key for this table.
b) Other attributes are *date_of_result* (date on which a shortlist for IAF came) and *round_number* (integer denoting the round for which this shortlist is valid,value -1 if this is final selection and no more selection rounds are left).

5) **Coordinator**

a) This table holds the details of students who are themselves Internship Coordinators managing the companies and hence the recruitment process.
b) This is weak entity dependent on 'student personal details' and thus *ID* from that table is it's primary key formed along with *Year* and *Semester* from table 'Time Intervals'. *Category* is another attribute for the table and holds category of the Coordinator. This is basically a string holding the authority level of coordinator.

6) **Verification**

a) This table is also a weak entity set dependent on 'Student Personal Details' and hence has primary key is composed of *ID* from that table and *Point_to_verify*.
b) *Point_to_verify* is a string unique to the point on resume to be verified verified. Other attributes are *Verifying_authority* (LDAP of authority who verifies the point), *Verifying_document* (pointer to document which might be a mark-list or certificate image/pdf), and a boolean attribute *is_verified* which states whether the resume is verified by the coordinator finally after going through all the proofs.
c) For a particular point on resume, either of the two columns- *Verifying_authority* or *verifying_document* need to be filled up according to the verification guidelines.

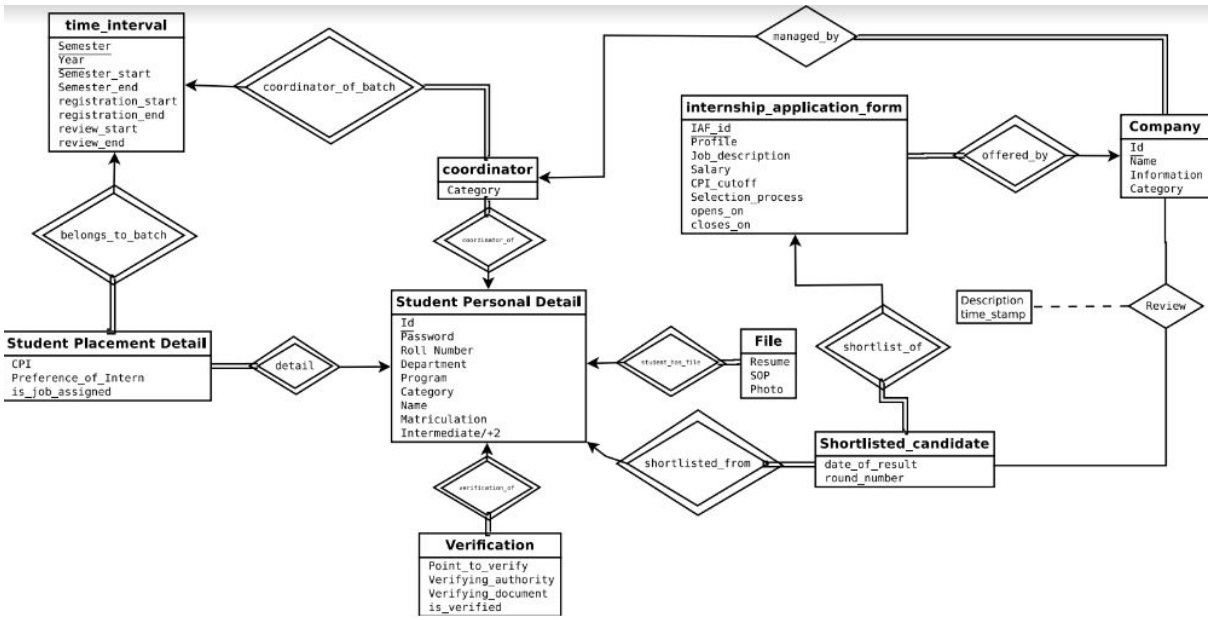
7) **Time Intervals**

a) This table stores the start and end times of various important activities which are to be completed during the course of an internships season.
b) *Year* and *Semester* attributes form primary key. Other attributes are *Semester_start, Semester_end, registration_start, registration_end, review_start, review_end*, all of which mark the dates and times for the respective activities to start and end.
c) This table helps in tracking temporal data.

8) **Review**

a) This is a relationship and not a table. This relationship exists between company and shortlisted students. Only the finally shortlisted students are able to write a review for the company after their internship period is over.
b) A string *Description* and *Timestamp* of when the review was given are the two attributes for this relation.

ER Diagram



This is the ER diagram tentatively for our project, with the various weak entity sets and relations denoted in standard way.

Implementation

We will try to implement a better front end for the web application using Ruby on Rails along with html/css/JavaScript and base of PostgreSQL.

Functional Specification

Basic functionalities:

1. Students register themselves to the Internship Portal and add their personal details. The details like CPI are ideally extracted with help of ASC but for demo purpose we would use dummy CPI data. Thus these rows get added to corresponding student tables ‘student personal details’ and ‘student placement details’.
2. Companies register themselves to the portal similarly and their data gets added to the Company table
3. Company is able to add different IAF’s according to the job profiles they offer and these IAF’s get added to the table ‘internship_application_form’.
4. Students upload resume, SOP and optionally a profile photo which gets added to the table ‘Files’.
5. In the time window of verification, students upload different pdf/images for certificates and give LDAP ID’s of verifying authorities for points in resume which require verification by faculty or some other people, as described in detail ahead..
6. After this coordinators verify the documents uploaded and check if all the verifying authorities have indeed validated the corresponding points in resume. If everything is good, this resume gets ‘activated’ and can be used to sign for companies
7. Different IAF’s are opened by the coordinators on the opens_on date of the IAF and Student can view the IAF and sign it with one of the several resumes/SOP he has submitted. Once the IAF closes, the students who signed the IAF by default get shortlisted for round ‘0’ of selection and hence form a part of the shortlisted students table with round_number set to 0 everywhere.
8. Student can view the all the IAF’s (s)he has signed and their status (whether the student is shortlisted for the current selection round in progress).
9. The companies can see the list of students who have signed up the IAF, and the primary personal student details like CPI, department etc. Companies can shortlist students via portal at various rounds.
10. Admin (coordinators) can view, edit, open and close the IAF. She/he can view the results comprising of different shortlists , download the resumes of candidates, download the csv with key personal details.
11. Admin will be able to see certain statistics related to number of students signing various companies across years, selection trends, etc.

Special Additions:

Resume verification: We aim to develop a portal where the student can get his/her resume verified by the concerned authority by specifying the Ldap of the authority(if it exists).
The concerned person can login using their ldap and password to see the resume of the student, point to be verified and get a ‘verify’ button for verifying and validating the specific point mentioned in resume. We plan to make this process as streamlined as possible.

The final verification authority though remains with the admin (internship coordinator) and the resume can be activated only when the final verification is done.
Also the student can upload images/pdf’s for soft-copy proofs, which are generally certificates, mark-sheets etc.

Now the coordinators should be able to check if the provided proofs are sufficient and then mark the resume as ‘verified’ after which student is able to sign for companies using this resume.

Review system: A student who does an internship for a particular company/university can submit the feedback for the internship after it is over. This review portal would be open only for a certain period of time after the internship season ends. This timeline is decided by the admin(the head of internships). This review can be viewed by students of next batch while they sign for that company for internship.