# Project monitoring

A university runs a computing course that includes a period of industrial placement when students work for an external company on an approved project. The project tutor writes to companies to ask for projects. Companies reply with an outline specification of a project, listing key skills they believe are required for this project. The projects tutor liaises with the company as necessary to obtain detail on the project and makes a decision on whether to approve it or not. He / she records approved projects. Initially, new projects have nulls in the studentid, supervisor and second reader attributes. The tutor associates the skills required with skills the students have studied. A Company may forward many projects. The list of approved projects is made available to the students and each student may select up to three projects. The project tutor then assigns projects to students, trying as far as possible to satisfy choices made. Student skills are evaluated by the examinations office, based on the modules the student has taken and passed. The examinations officer enters skills held for each student.

When students have been allocated to projects, the tutor assigns a supervisor (the project supervisor column is updated with the supervisor’s staffno) and a second reader (the project second reader column is updated with the second reader’s staffno). The project tutor then writes to the companies to inform them whether or not their project has bee selected and if so, of the allocations (student and supervisors) made. The skills held by the allocated student are listed. The first supervisor must make an initial visit to the company with the student to set project objectives and also must make a mid-project and end-of-project visit. After each visit, the supervisor submits a progress report. At the end of the project period both supervisors must together assess the work carried out based on a report submitted by the student. The project tutor monitors project progress throughout.



Figure 1 Entity Relationship Diagram – Project Monitoring System

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course: **DT258** Stage: **3**  Year: **2013** | | | | | | | |
| **Student Id** | **Name** |  | **Pref No.** | **Project Id** | **Project Title** | **Company Id** | **Company Name** |
| C98003301 | Allen | Audrey | 1 | A | Virtualizing Data Centres | SUNMC | SunMS |
| C98003301 | Allen | Audrey | 2 | F | Migrating to the Cloud | UNICO | UniCorp |
| C98003301 | Allen | Audrey | 3 | D | Automating exam correction | SISCO | Sisco |
| C98003303 | Bourke | Padraic | 1 | B | Stock Tracking And Analysis | SEQLL | Sequell |
| C98003303 | Bourke | Padraic | 2 | E | Smart Card Application | DALEX | Data Lexicon |
| C98003303 | Bourke | Padraic | 3 | C | In-memory databases | MSOFT | Microsoft |
| C98003302 | Bradley | Brian | 1 | G | Frequent Flyer App | DALEX | Data Lexicon |
| C98003302 | Bradley | Brian | 2 | H | Research Into Client/Server | SISCO | Sisco |
| C98003302 | Bradley | Brian | 3 | D | Automating exam correction | SISCO | Sisco |
| C98003341 | Butler | Roslyn | 1 | C | In-memory databases | MSOFT | Microsoft |
| C98003341 | Butler | Roslyn | 2 | B | Stock Tracking And Analysis | SEQLL | Sequell |
| C98003341 | Butler | Roslyn | 3 | D | Automating exam correction | SISCO | Sisco |
| C98003394 | Byrne | Hazel | 1 | D | Automating exam correction | SISCO | Sisco |
| C98003394 | Byrne | Hazel | 2 | C | In-memory databases | MSOFT | Microsoft |
| C98003394 | Byrne | Hazel | 3 | F | Migrating to the Cloud | UNICO | UniCorp |
| C98003344 | Collier | Shay | 1 | E | Smart Card Application | DALEX | Data Lexicon |
| C98003344 | Collier | Shay | 2 | A | Virtualizing Data Centres | SUNMC | SunMS |
| C98003344 | Collier | Shay | 3 | F | Migrating to the Cloud | UNICO | UniCorp |

Figure 2 Student Project Preference Sheet.

2. Each year, project coordinators for the different programmes and stages draw up a sheet of student preferences (Figure 2). Each student can choose up to three projects, numbering them 1, 2 and 3. Each project is connected to a company.

(a) Represent the preference sheet in unnormalised form, first normal form, second normal form and third normal form. (4x5 marks)

(b) Many third level institutions around the world make project reports available to other institutions. One of the advantages of this is that students can search the body of work for keywords, and retrieve reports that might help them in their own project. Give a description of how you think this data should be held and searched. (10 marks)

Course + stage + year + {studentid + sname + prefno + projid + title + companyid + cname}

1nf

Course+ stage + year\*

Course+ stage + year\* + Studentid + prefno + sname + projid + title + companyid + cname

2nf

Course+ stage + year\*

(Course+ stage + year)\* + (Studentid\* + prefno ) + projid + title + companyid + cname

Studentid + sname

3nf

Course + year + stage

Course+ stage + year\* + (Studentid\* + prefno )\* + projid\*

Studentid + sname

Projid + title + companyid\*

Companyid + cname