

CSCI235 Assignment 1

Task 1 - Design Process and OMT Diagram

Pass 1 - Find the classes of objects and generalization hierarchies

Every faculty staff has a staff number, a name, date of birth, level of position, work in department

New classes of objects: STAFF

Each project has a project number, a sponsor name (e.g., ARC, URC), a starting date, an ending date, and a budget

New classes of objects: PROJECT

Each student has a student number, a name, date of birth, and a degree program (e.g., BCs, or MCs or PhD)

New classes of objects: STUDENT

Departments have department name, a main office, header of the department

New classes of objects: DEPARTMENTS

All classes of objects discovered in Pass 1:

- STAFF
- PROJECT
- STUDENT
- DEPARTMENTS

Pass 2 - Find the associations

Each project is managed by one faculty staff

New associations: **PROJECT Managed by one STAFF**

Each project is worked by one or more faculty staffs

New associations: **PROJECT is Worked on by multiple STAFF**

Association Class: **STAFFPROJECT**

Staffs can work on multiple projects.

New associations: **STAFF work on 0 or more (multiple) PROJECT**

Each project is worked on by one or more students (as the project's research assistants)

New associations: **Multiple STUDENT work on a PROJECT**

Association Class: **STUDENTPROJECT**

When students work on a project, a staff must supervise their work on the project. Students can work on multiple projects, in which case they will have a supervisor for each one.

New associations: **STUDENT works on multiple PROJECT**

New associations: **STAFF supervises STUDENTPROJECT**

Faculty staffs work in one or more departments, and for each department that they work in, a time percentage is associated with their job

New associations: **STAFF works in 1 or many DEPARTMENT**

Association Class: **STAFFDEPARTMENT**

Students have one major department in which they are working on their degree

New associations: **STUDENT belongs to one DEPARTMENT**

All new Association Classes:

- **STAFFPROJECT**
- **STUDENTPROJECT**
- **STAFFDEPARTMENT**

All new Associations:

- **PROJECT Managed by one STAFF**
- **PROJECT is Worked on by multiple STAFF**
- **STAFF work on 0 or more (multiple) PROJECT**
- **Multiple STUDENT work on a PROJECT**
- **STUDENT works on multiple PROJECT**
- **STAFF supervises STUDENTPROJECT**
- **STAFF works in 1 or many DEPARTMENT**
- **STUDENT belongs to one DEPARTMENT**

Pass 3 - Find the attributes

Every faculty staff has a staff number, a name, date of birth, level of position, work in department

New attributes: STAFF(StaffNumber, Name, DOB, LevelPosition)

Each project has a project number, a sponsor name (e.g., ARC, URC), a starting date, an ending date, and a budget

New attributes: PROJECT(ProjectNumber, SponsorName, StartDate, EndDate, Budget, Manager)

Each student has a student number, a name, date of birth, and a degree program (e.g., BCs, or MCs or PhD)

New attributes: STUDENT(StudentNumber, Name, DOB, DegreeProgram, Department)

Each project is worked by one or more faculty staffs.

Staffs can work on multiple projects

As the association between STAFF and PROJECT is Many to Many, an association class STAFFPROJECT(StaffNumber, ProjectNumber) is introduced

Each project is worked on by one or more students (as the project's research assistants)

When students work on a project, a staff must supervise their work on the project. Students can work on multiple projects, in which case they will have a supervisor for each one

As the association between STUDENT and PROJECT is Many to Many, an association class STUDENTPROJECT(StudentNumber, Project, Supervisor) is introduced

Departments have department name, a main office, header of the department.

New attributes: DEPARTMENT(Name, Office, DepartmentHead)

Faculty staffs work in one or more departments, and for each department that they work in, a time percentage is associated with their job

As the association between STAFF and DEPARTMENT is Many to Many, an association class STAFFDEPARTMENT(StaffNumber, DeptName, TimePerc) is introduced

Student: 4970512

Pass 4 - Find the identifiers

Every faculty staff has a staff number, a name, date of birth, level of position, work in department

New attributes: STAFF.ID1 = (StaffNumber)

Each project has a project number, a sponsor name (e.g., ARC, URC), a starting date, an ending date, and a budget

New attributes: PROJECT.ID1 = (ProjectNumber)

Each student has a student number, a name, date of birth, and a degree program (e.g., BCs, or MCs or PhD)

New attributes: STUDENT.ID1 = (StudentNumber)

Departments have department name, a main office, header of the department

New attributes: DEPARTMENT.ID1 = (Name)

Pass 5 - Find the qualifications of associations

-None

Pass 6 - Find the generalisations

-None

Student: 4970512

OMT Diagram

