# Database Design

## Database Relationship Diagram (DRD)

## Database Structure

## Database Constraints

Since all the database tables have the constraints: PRIMARY KEY, NOT NULL, DEFAULT, we only list down other constraints (if any) as the tables below.

### Table: Accounts

Constraint:

* UNIQUE: username must be unique

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Accounts | +  (username) | - | +  (username) |

### Table: Departments

Constraint:

* UNIQUE: departmentName must be unique

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Departments | +  (departmentName) | - | +  (departmentName) |

### Table: Faculty

Constraint:

* UNIQUE: facultyName must be unique
* FOREIGN KEY: DepartmentID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Faculty | +  (facultyName)  Departments.departmentID must exist | - | +  (facultyName)  Departments.departmentID must exist |

### Table: Courses

Constraint:

* UNIQUE: courseName must be unique
* FOREIGN KEY: DepartmentID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Courses | +  (courseName)  Departments.departmentID must exist | - | +  (courseName)  Departments.departmentID must exist |

### Table: OnlineAdmission

Constraint:

* FOREIGN KEY: DepartmentID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| OnlineAdmission | +  Departments.departmentID must exist | - | +  Departments.departmentID must exist |

### Table: StudentRegistration

Constraint:

* FOREIGN KEY: TimeTableID must exist
* FOREIGN KEY: admissionID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| StudentRegistration | +  TimeTable.TimeTableID and OnlineAdmission.admissionlD must exist | - | +  TimeTable.TimeTableID and OnlineAdmission.admissionlD must exist |

### Table: Timetable

Constraint:

* FOREIGN KEY: courseID must exist
* FOREIGN KEY: facultyID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Timetable | +  Courses.courseID and Faculty.facultylD must exist | - | +  Courses.courseID and Faculty.facultylD must exist |

### Table: Assignments

Constraint:

* UNIQUE: AssignmentsName must be unique
* FOREIGN KEY: TimeTableID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Assignments | +  (AssignmentsName)  TimeTable.TimeTableID must exist | - | +  (AssignmentsName)  TimeTable.TimeTableID must exist |

### Table: ExamTimeTable

Constraint:

* FOREIGN KEY: TimeTableID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| ExamTimeTable | +  TimeTable.TimeTableID must exist | - | +  TimeTable.TimeTableID must exist |

### Table: ClassNews

Constraint:

* FOREIGN KEY: TimeTableID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| ClassNews | +  TimeTable.TimeTableID must exist | - | +  TimeTable.TimeTableID must exist |

### Table: FeedBacks

Constraint:

* FOREIGN KEY: TimeTableID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| FeedBacks | +  TimeTable.TimeTableID must exist | - | +  TimeTable.TimeTableID must exist |

### Table: Branches

Constraint:

* UNIQUE: branchName must be unique
* UNIQUE: branchEmail must be unique
* UNIQUE: branchAddress must be unique
* UNIQUE: branchPhone must be unique
* UNIQUE: branchFax must be unique

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Branches | +  (branchName, branchEmail, branchAddress, branchPhone,  branchFax) | - | +  (branchName, branchEmail, branchAddress, branchPhone,  branchFax) |

### Table: Facilities

Constraint:

* UNIQUE: facilitiesName must be unique

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| Facilities | +  (facilitiesName) | - | +  (facilitiesName) |

### Table: CollegeContents

Constraint:

* UNIQUE: facilitiesName must be unique
* FOREIGN KEY: TimeTableID must exist

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Add | Delete | Update |
| CollegeContents | +  (contentTitle)  TimeTable.TimeTableID must exist | - | +  (contentTitle)  TimeTable.TimeTableID must exist |