**Student Examination Portal**

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| --- | --- |
| **MODULES** | **FUNCTIONS** |
| **STUDENT** | Create a student   1. Student ID 2. Name 3. Class Roll Number 4. Batch Name |
| Update student details |
| Remove a student from the database |
| Generate report card (Text File) of student showing percentage, grades in each subject and whether he passed or failed (After all marks are uploaded)  MARKS GRADES  >=90 A  >=80 B  >=70 C  >=60 D  >=50 E  <40 F  PASS: A-E, FAIL: F |
| **COURSE** | Create a new course   1. Course ID 2. Course Name 3. Marks obtained – Dictionary (Student Name, Roll Number, Marks) |
| View performance of all students in the course.  Show class roll, student name and marks obtained for specific for all students |
| Show course statistics –  Histogram showing number of students in each grade.  X axis – Grades, Y axis- Number of students |
| **BATCH** | Create a new batch |
| 1. Batch ID 2. Batch Name 3. Department Name 4. List of courses 5. List of students |
| View list of all students in a batch |
| View list of all courses taught in the batch |
| View complete performance of all students in a batch  Show class roll, student name, percentage obtained (considering all subject) for all students |
| – Pie Chart of Percentage of all students |
| **DEPARTMENT** | Create a new department   1. Department ID 2. Department Name 3. List of batches |
| View all batches in a department |
| View average performance of all batches in the department |
| Show department statistics:  Line plot – Average percentage of all students for each batch.  X axis - Batch Name, Y axis – Average Percentage |
| **EXAMINATION** | Enter marks of all students for a specific examination  Course Name, Student Roll Number, |
| View performance of all students in the examination |
| Show examination statistics: |
| Scatter Plot of all marks obtained. Different colors for different courses,  X-axis - Marks, Y-axis - Batch |
| A department can contain many batches  A batch can contain many courses, but only one department  A course can run in multiple batches.  All students are registered to a specific batch.  All students are enrolled into all courses running in his/her batch | |

**Separate database to be maintained for students, courses, batches and departments as CSV files.**

**SAMPLES SHOWN BELOW**

**STUDENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Student ID** | **Name** | **Class Roll Number** | **Batch ID** |
| CSE2201 | Firstname Middlename Surname | 01 | CSE22 |
| CSE2101 | Firstname Middlename Surname | 01 | CSE21 |
| ECE2201 | Firstname Middlename Surname | 01 | ECE22 |
| ECE2202 | Firstname Middlename Surname | 02 | ECE22 |

**COURSE**

|  |  |  |
| --- | --- | --- |
| **Course ID** | **Course Name** | **Marks obtained (StudentID:Marks-StudentID:Marks-….)** |
| C001 | Python Programming | CSE2201:95-CSE2101:73 |
| C002 | Physics | CSE2201:65-CSE2101:78-ECE2201:34-ECE2202:95 |

**BATCH**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Batch ID** | **Batch Name** | **Department Name** | **List of Courses** | **List of Students** |
| CSE22 | CSE 2022-26 | CSE | C001:C002 | CSE2201 |
| CSE21 | CSE 2021-25 | CSE | C001:C002 | CSE2101 |
| ECE22 | ECE 2022-26 | ECE | C002 | ECE2201:ECE2202 |

**DEPARTMENT**

|  |  |  |
| --- | --- | --- |
| **Department ID** | **Department Name** | **List of Batches** |
| CSE | Computer Science and Engineering | CSE22:CSE21 |
| ECE | Electronics and Communication Engineering | ECE22 |