

# Data and Applications

## Project Phase 4 Report

Team No: 30

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## 1 Installation Details

Running *Miniworld.py* from the project directory in a terminal automatically connects to and populates the database, and also starts the Command Line Interface.

The user will be required to log in with their MySQL Credentials for authentication. Below we give an overview of the implemented functions in our database.

## 2 Modify Functions

### 2.1 Insert

1. Enter the exam dates for entrance exams every year.

**Description:** The user can enter the relevant details of any exam into the database such as the conducting authority, registration deadlines and dates of examination. There is an option to enter registration details.

2. Entry of news/updates regarding exams, colleges and programs into the database.

**Description:** The user can enter any relevant details related to the function of the College Admissions website in the form of an article. They must enter the title, the content of the article, and the category it belongs to. The data of publication is automatically set to the time of entry into the database. There is an option of inserting images into this article which has been implemented through BLOB files. There is also a feature of inserting URLs of articles that are related to the article the user has written.

3. Entry of new programs that colleges are offering  
**Description:** This option allows the user to enter the data corresponding to any new programs that a college starts offering. They must enter the name of the college and the name of the new program it is now offering.

## 2.2 Delete

1. Delete news/updates that are older than a year.  
**Description:** This option automatically deletes the news articles from the database that become older than one year. This ensures that only relevant articles remain in the database.
2. Delete startup business.  
**Description:** This option accounts for the contingency that a startup from a college got shut down. It deletes that from the database. In case it doesn't exist in the database, it returns that information to the user.

## 2.3 Update

1. Update entrance exam dates.  
**Description:** This option allows us to update the exam date of any exam in the database. In case we enter an invalid value that doesn't exist in the database, it returns that information.
2. Update Exam registration details and deadlines.  
**Description:** This option allows the user to update the deadline details for registering for various exams every year.
3. Update College Placement Data.  
**Description:** This option will allow the administrator to update the relevant college data after every placement season to ensure that the data on the site remains updated and accurate. College name, Highest Placement, Median Placement, Average Placement, and Percentage of placements are inserted into the database. If we enter a college that doesn't exist in the database, this function returns that information.

# 3 Retrieve Functions

## 3.1 Selection

1. Colleges with median placement more than 10 LPA.  
**Description:** This option selects the colleges from the database with a median placement higher than 10 LPA.
2. College Rankings where IIT Madras is in top colleges.  
**Description:** This option lists all the rankings by different organizations that are currently in the database, in which IIT Madras is the top college.

### 3.2 Projection

1. College Name and Contact Details of Colleges from a City that offer a specific programme.  
**Description:** This option allows the user to find all Colleges and their respective Contact details from a certain city that offers a certain program, as specified by the user.
2. Contact details of alumni of a given college.  
**Description:** This allows the user to find the contact details of alumni of a given college (specified by the user).
3. Names of Exam and their Dates which are required for entry into a given college.  
**Description:** This option allows the user to find all exams and the dates of exams that are required for entry into a given college.

### 3.3 Aggregate

1. Average placements (median) across all colleges in a given city.  
**Description:** This option calculates the average median placements across all colleges in a user-specified city.
2. Branch (in any college) that has the maximum cutoff score across all colleges for a particular exam. **Description:** This option allows the user to find the branch with the maximum cutoff score over all colleges for a specified exam.
3. Total number of seats available for a given branch (eg. ECE) across all colleges. **Description:** This option allows the user to find the total number of seats available for a specified branch over all colleges in the database.

### 3.4 Search

1. Retrieve list of colleges whose names start with some string, e.g., "Indian".  
**Description:** This option allows the user to search for colleges whose names start with certain strings.
2. Retrieve list of branches with substring "Computer".  
**Description:** This option allows the user to search for branches with a substring, such as "Computer."

## 4 Analysis Functions

1. Find a list of branches you are eligible for based on a score in an exam.  
**Description:** This option provides a list of branches that a user is eligible for based on a specified exam score.

2. Percentage of placements in the college with the highest ranking by a given organization. **Description:** This option calculates the percentage of placements in the college with the Ranking by the organisation entered by the user
3. Industries in which startups founded in Mumbai Colleges are working. **Description:** This option identifies the industries in which startups founded in Mumbai colleges are currently working.

## 5 Execute Functions

This option provides the user a command line interface to enter any SQL query on the database as per their specific requirements.