

German University in Cairo  
Media Engineering and Technology  
Assoc. Prof. Mervat Abuelkheir  
Eng. Mohammad Ashry  
Eng. Nouran Ahmed Sadek  
Eng. Bassem Rizk  
Eng. Nourhan Ashraf Fouad

Advanced Computer and Media Lab, *Winter term 2020-2021*  
GUC PORTAL  
**Milestone I Description**

*Deadline: 22.12.2020 @ 23:59*

In this milestone, you are required to implement the back end of the GUC portal. This includes implementing all database models and routes needed to fulfill all the functionalities stated in this document. Kindly refer to the project description document as a reference for any extra details about the project.

In this document, you will be provided with a list of different requirements/functionalities to be implemented. Each requirement must map to a route(s) in your implementation. Think about which database models need to be implemented and how they can be connected to each other in order to successfully achieve all the requirements. Also, think about the possible input/output for each route.

## 1 Technologies

**You are required to use the following technologies in your implementation:**

1. **Nodejs/express** for building the different routes.
2. **MongoDB/Mongoose** for building the database models.
3. **Bcrypt/Bcryptjs** for any hashing related logic.
4. **JsonWebToken** for implementing the appropriate authentication/authorization functionalities. Tokens have to be sent in the request headers, under “auth-token” field.

**Note that proper data validation, authentication and authorization must be done for *all routes* in this milestone.**

## 2 GUC Staff Members Functionalities

**Any GUC staff member can do the following:**

- Log in with a unique email and a password.
- Log out from the system.
- View their profile.

- Update their profile except for the id and the name. Academic members can't update their salary, faculty and department.
- Reset their passwords.
- Sign in. This should simulate a staff signing in(entering the campus).
- Sign out. This should simulate a staff signing out(leaving the campus).
- View all their attendance records, or they can specify exactly which month to view.
- View if they have missing days. Missing days are days where the staff member don't have any attendance record, is not a Friday nor his/her day off, and there is no accepted leave for this day.
- View if they are having missing hours or extra hours.

### 3 HR Functionalities

**Any HR member can do the following:**

- Add/update/delete a location (for example, adding C7.203 which is a lab that can take 25 students. Locations can also be tutorial rooms, lecture halls or offices).
- Add/update/delete a faculty.
- Add/update/delete a department under a faculty.
- Add/update/delete a course under a department.
- HR can add a new staff member to the system. For all staff members, HR should add id, name, email, salary and office location.
  - Any extra personal information details is acceptable.
  - Emails should be unique.
  - Staff member ids are unique. The first academic staff member should have id “ac-1”, and the first hr member should have id “hr-1”. The system should automatically increment ids when adding a new staff member.
  - Once a staff member is added to the system, his/her password should be set to a default value: “123456”. The system must prompt new users to change their passwords on their first login to the system.
  - HR can't assign an office location that already has full capacity.
  - HR does *not* assign a course to a new academic staff member.
  - All HR members have Saturday as their day off, and they can't change it.
- Update/delete already existing staff members.
- Manually add a missing sign in/sign out record of a staff member except for himself/herself.
- View any staff member attendance record.
- View staff members with missing hours/days.
- Update the salary of a staff member.

## **4 Academic Members Functionalities**

### **4.1 HOD Functionalities**

**Any HOD can do the following:**

- Assign/delete/update a course instructor for each course in his department.
- View all the staff in his/her department or per course along with their profiles.
- View the day off of all the staff/ a single staff in his/her department.
- View all the requests “change day off/leave” sent by staff members in his/her department.
- Accept a request. if a request is accepted, appropriate logic should be executed to handle this request.
- Reject a request, and optionally leave a comment as to why this request was rejected.
- View the coverage of each course in his/her department.
- View teaching assignments (which staff members teach which slots) of course offered by his department.

### **4.2 Course Instructor Functionalities**

**Any course instructor can do the following:**

- View the coverage of course(s) he/she is assigned to.
- View the slots’ assignment of course(s) he/she is assigned to.
- View all the staff in his/her department or per course along with their profiles.
- Assign an academic member to an unassigned slots in course(s) he/she is assigned to.
- Update/delete assignment of academic member in course(s) he/she is assigned to.
- Remove an assigned academic member in course(s) he/she is assigned to.
- Assign an academic member in each of his/her course(s) to be a course coordinator.

### **4.3 Course Coordinator Functionalities**

**Any course coordinator can do the following:**

- View “slot linking” request(s) from academic members linked to his/her course.
- Accept/reject “slot linking” requests from academic members linked to his/her course. Note that once a “slot linking” request is accepted, it should be automatically added to the sender’s schedule.
- Add/update/delete course slot(s) in his/her course.

### **4.4 Academic member Functionalities**

**Any academic member can do the following:**

- View their schedule. Schedule should show teaching activities and replacements if present.
- Send/view “replacement” request(s).

- Send a “slot linking” request (automatically sent to course coordinator). A “slot linking” request is a request done by the academic member to indicate their desire to teach a slot.
- Change their day off by sending a “change day off” request (automatically sent to HOD), and optionally leave a reason.
- Submit any type of “leave” request (automatically sent to HOD). “Compensation” leave must have a reason. For any other leave, academic members can optionally write a brief reason behind it. Accepted leaves are not calculated as missing hours or missing days.
- Notified whenever their requests are accepted or rejected.
- View the status of all submitted requests. They can also view only the accepted requests, only the pending requests or only the rejected requests.
- Cancel a still pending request or a request whose day is yet to come.