**GROUP MEMBERS**

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**INFORMATION SYSTEMS III (20242FNINS632)**

**DataBASE SYSTEM REPORT**

**oN-cAMPUS RESIDENCE APPLICATION sYSTEM**

**1. Overview of the Residence Application System**

**Purpose**

The residence application system is designed to facilitate the process of students applying for on-campus accommodation. With a crucial feature that guarantees students can only apply for accommodation that has not yet reached their maximum capacity, the system enables students to register, log in, and submit applications for available residences.

**How the System Operates**

When students apply, their information is processed and saved while they wait for the administration to approve or reject them. Students apply using their Student Number, Name, Surname, and Gender. An automatic restriction that prohibits students from applying for full accommodation is in place, and administrators are tasked with overseeing residence capacities and reviewing applications. On the main page, students can check the status of their application by selecting Track Application Status from the side panel (e.g. “Declined," "Accepted," or "Application in progress" via their dashboard.

The system also imposes security precautions, like hashed password storage for administrators and students. The system allows administrators to be registered only by authorized employees, who are distinguished by their employee numbers.

**Key Feature: Capacity Limitation**

To stop students from applying to residences that are already full, a mechanism is built into the system. A Capacity field is present in each residence, and the system keeps track of the number of occupants as applications are approved. The system does not allow future students to apply for that residence once this number reaches the maximum capacity. In addition to preventing overbooking, this guarantees effective lodging distribution.

**2. Normalization**

**UNF 1NF 2NF 3NF**

|  |  |  |  |
| --- | --- | --- | --- |
| Student ID  StudentName  StudentSurname  Gender  Application Status  AccommodationID  AccommodationName  SharingRoom  Address  Images  EmployeeID  EmployeeName  EmployeeSurname  EmployeeNumber  EmployeeEmail  AdminID  AdminName  AdminSurname  AdminNumber  StudentPassword  Student EmailAddress  InstitutionID  InstitutionAddress  ContactNumber  EmailAddress  AdminPassword  AdminEmailAddress  Link | InstitutionID  Institution Name  InstitutionAddress  ContactNumber  EmailAddress | InstitutionID  Institution Name  InstitutionAddress  ContactNumber  EmailAddress  AccommodationID\* |  |
| AccommodationID  AccommodationName  SharingRoom  Address  Images  Link | AccommodationID  AccommodationName  SharingRoom  Address  Images  Link  StudentID\*  InstitutionID\* |
| StudentID  StudentName  StudentSurname  Gender  StudentPassword  StudentEmailAddress  Application Status |
| StudentID  StudentName  StudentSurname  Gender  StudentPassword  StudentEmailAddress  Application Status  AccommodationID\* |
| EmployeeID  EmployeeName  EmployeeSurname  EmployeeNumber  EmployeeEmail |
|  |
| AdminID  AdminName  AdminSurname  AdminNumber  AdminPassword  AdminEmailAddress | AdminID  AdminName  AdminSurname  AdminNumber  AdminPassword  AdminEmailAddress  EmployeeID\* |

**Relations:**

-Institution (InstitutionID, Institution Name, InstitutionAddress, ContactNumber, EmailAddress, AccommodationID\*)

-Accommodation (AccommodationID, AccommodationName, SharingRoom, Address, Images, Link, StudentID\*, InstitutionID\*)

-Students (StudentID, StudentName, StudentSurname, Gender, StudentPassword, StudentEmailAddress, Application Status, AccommodationID\*)

-Employees (EmployeeID, EmployeeName, EmployeeSurname, EmployeeNumber, EmployeeEmail)

-Admin (AdminID, AdminName, AdminSurname, AdminNumber, AdminPassword,

AdminEmailAddress, EmployeeID\*)