3. Design

About Design

Design is a work process which has a user perspective and drives development based on your specific customers’ needs. (SVID, 2005)

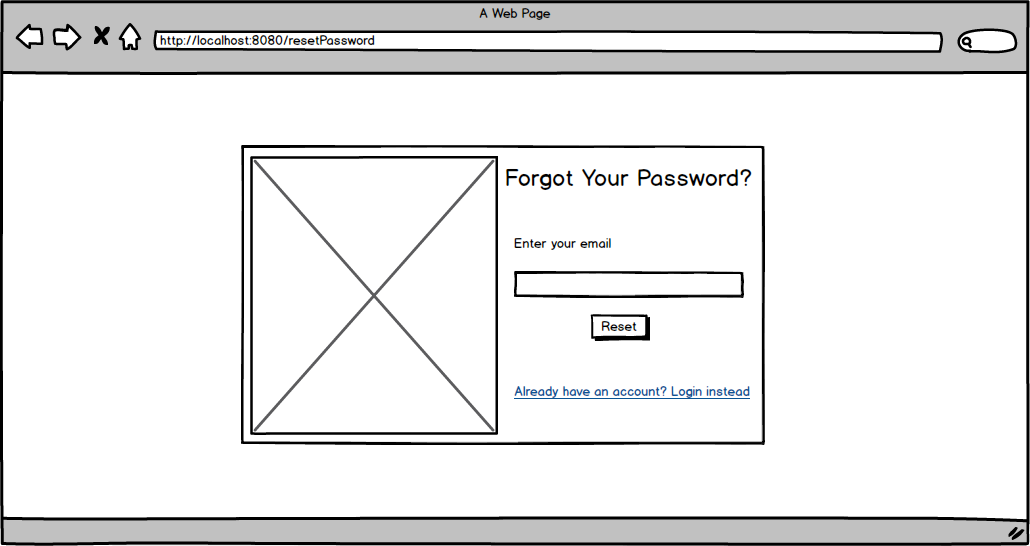
Project Design Plan

The design phase has been planned by implementing various design methodologies. With the making of different design models, the design phase will be completed. The implemented design models are mentioned below as:

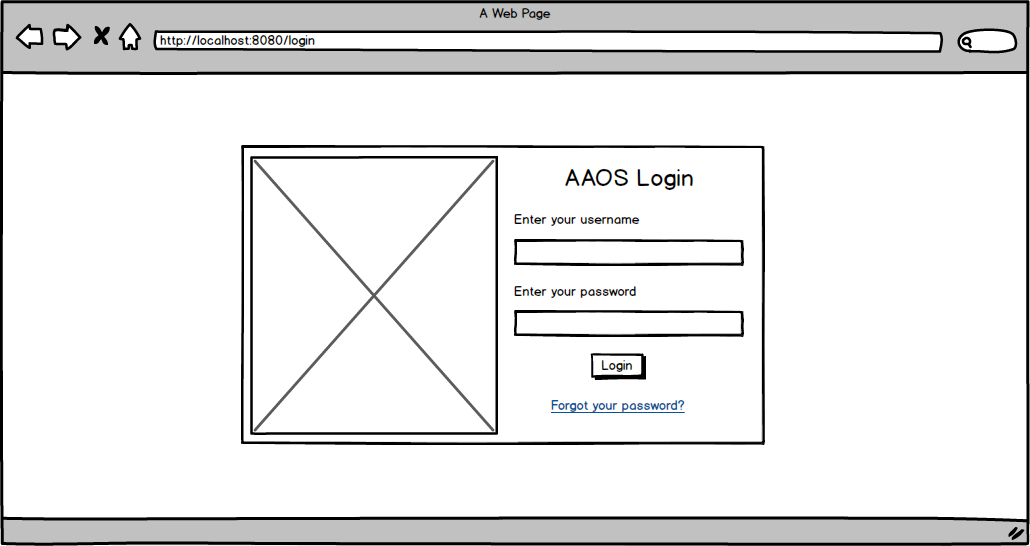
* User Interface Modelling
* Database Modelling
* Architectural Modelling
* Behavioral Modelling
* Structural Modelling

User Interface Modelling

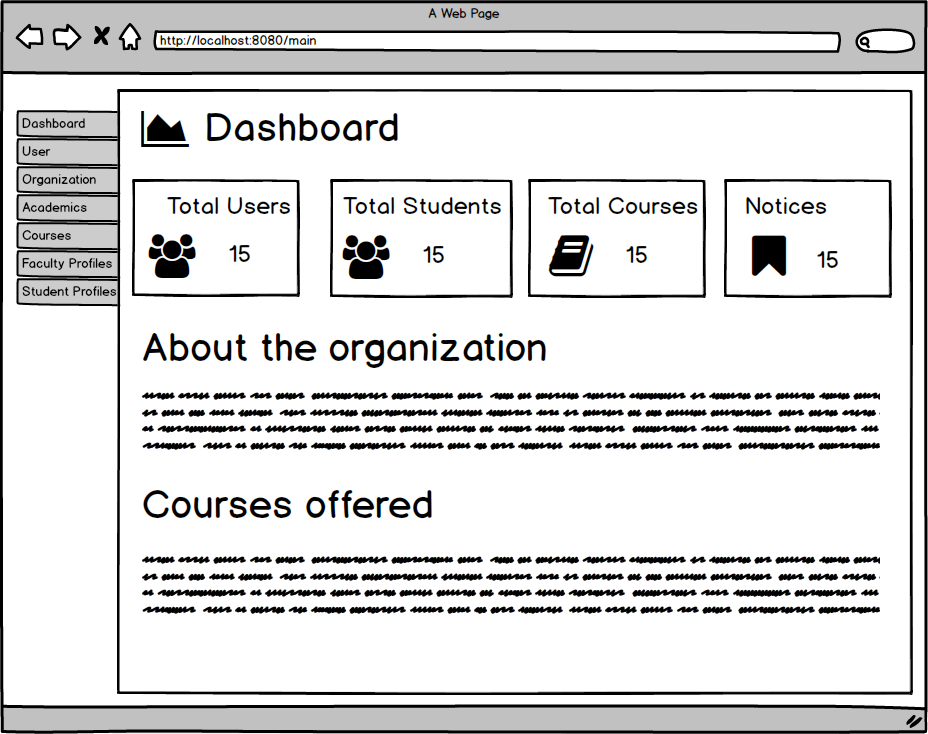
UI Modelling presents the proposed system with the possible design or layout of the user interface. The user interface is modelling through the prototyping methodology. The prototypes are mentioned below as:



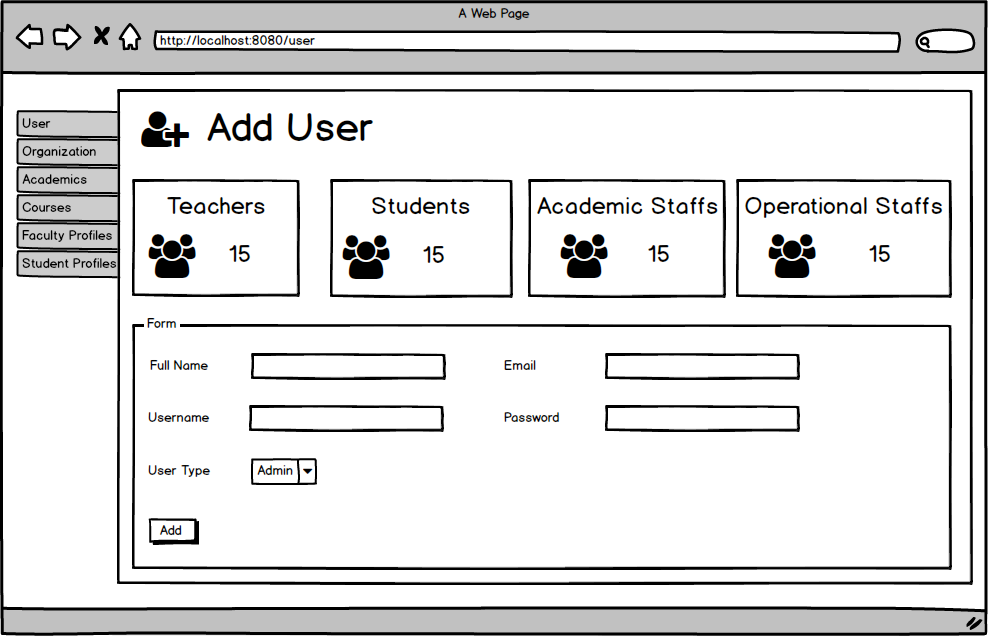
Img -Login Page Prototype



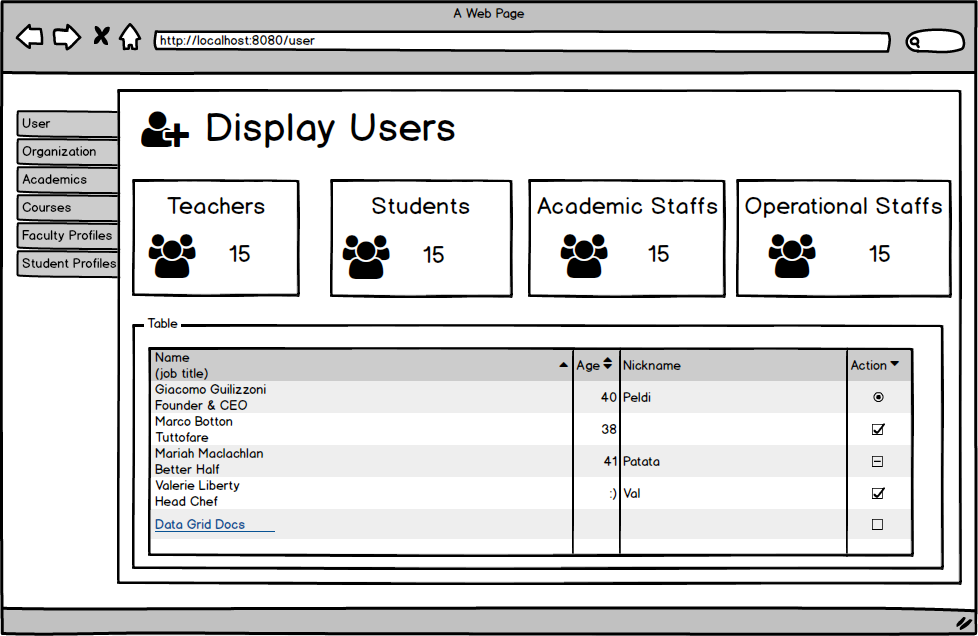
Img -Forgot Password Page



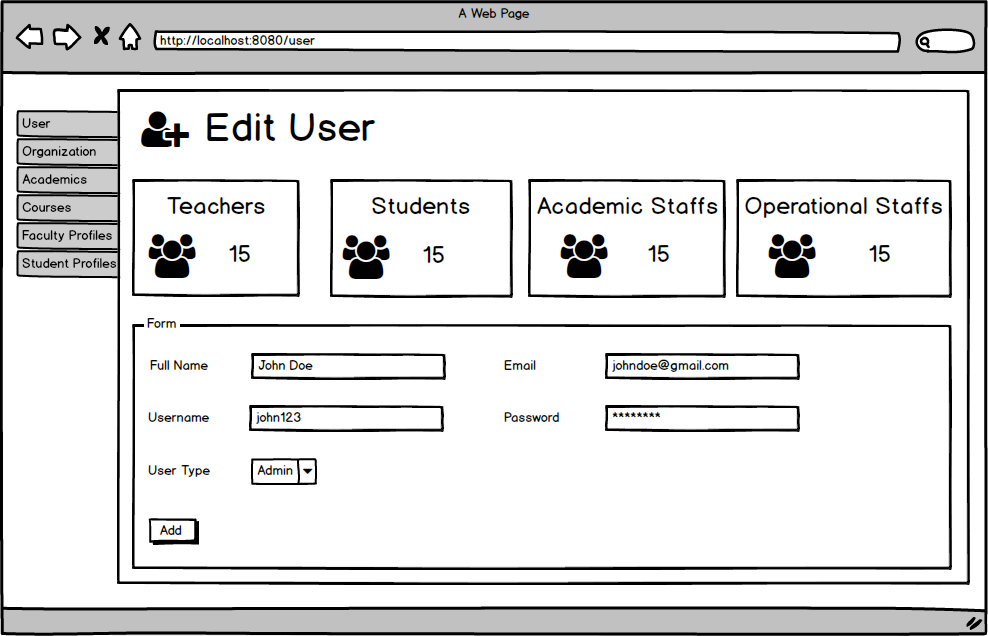
Img -Dashboard Page Prototype



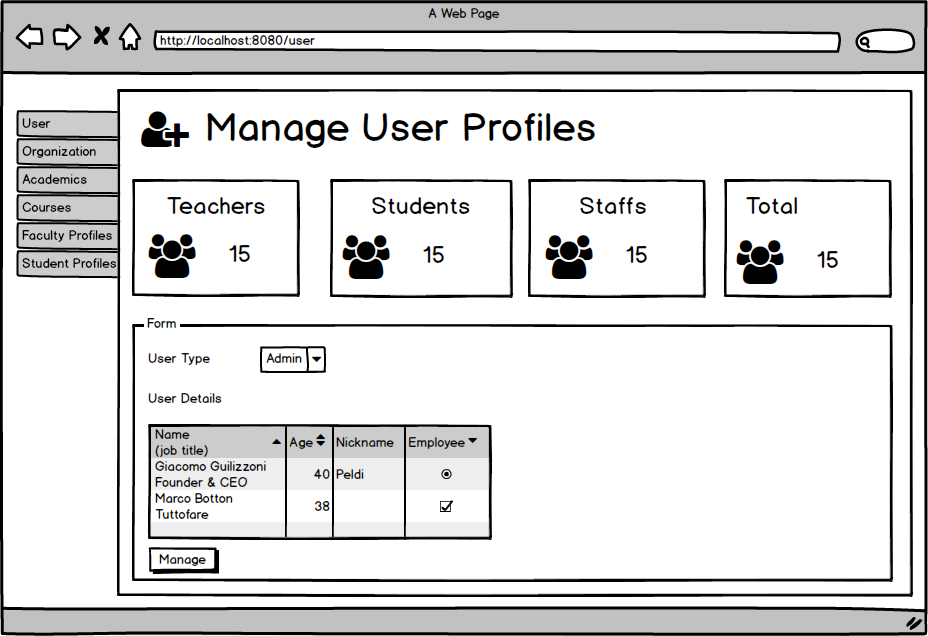
Img -Add User Page Prototype



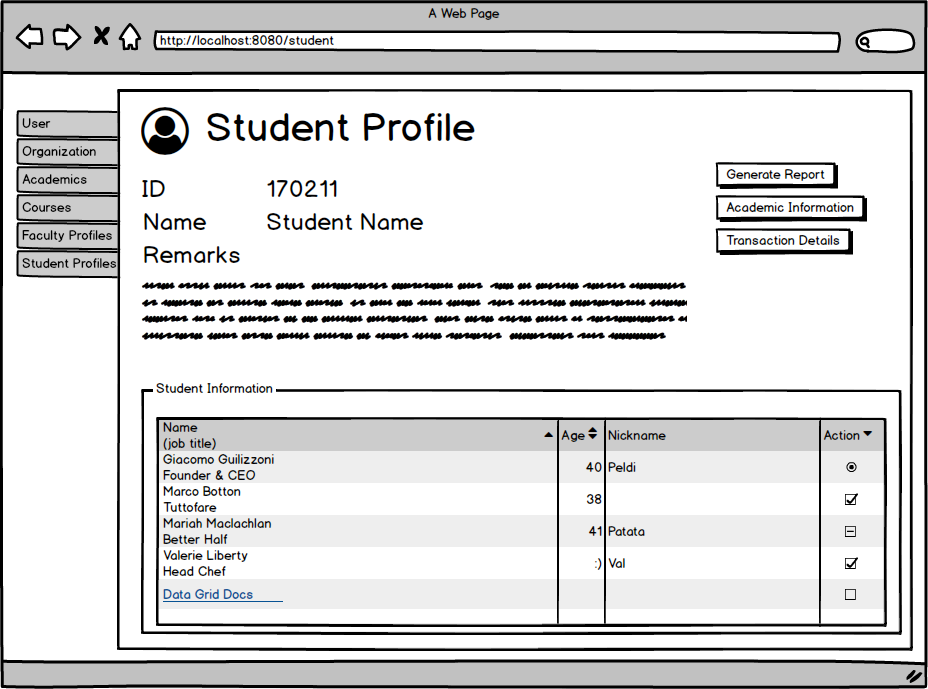
Img -Display User Page Prototype



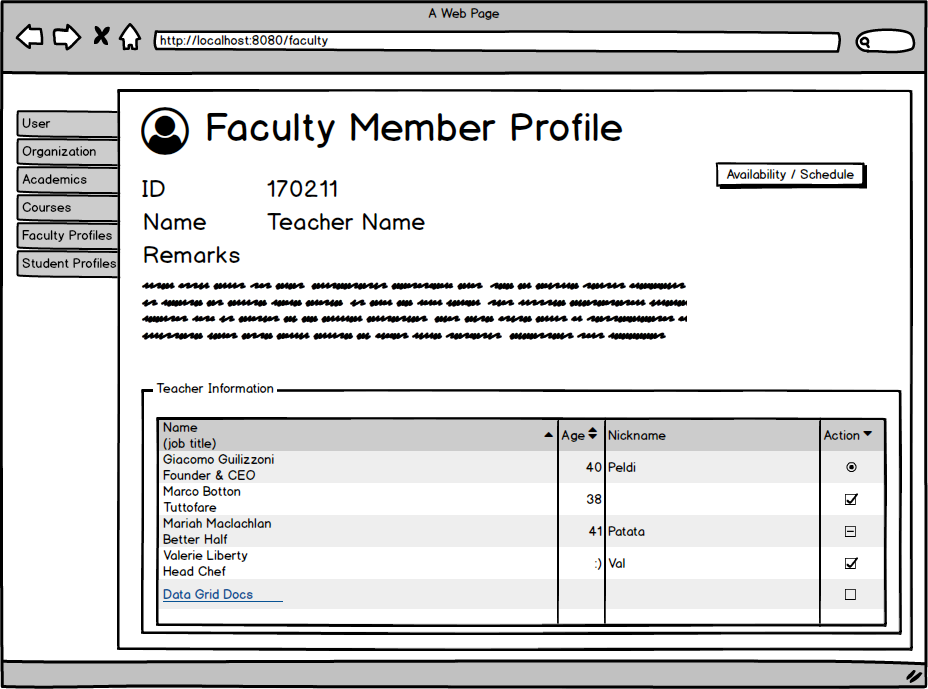
Img -Edit User Page Prototype



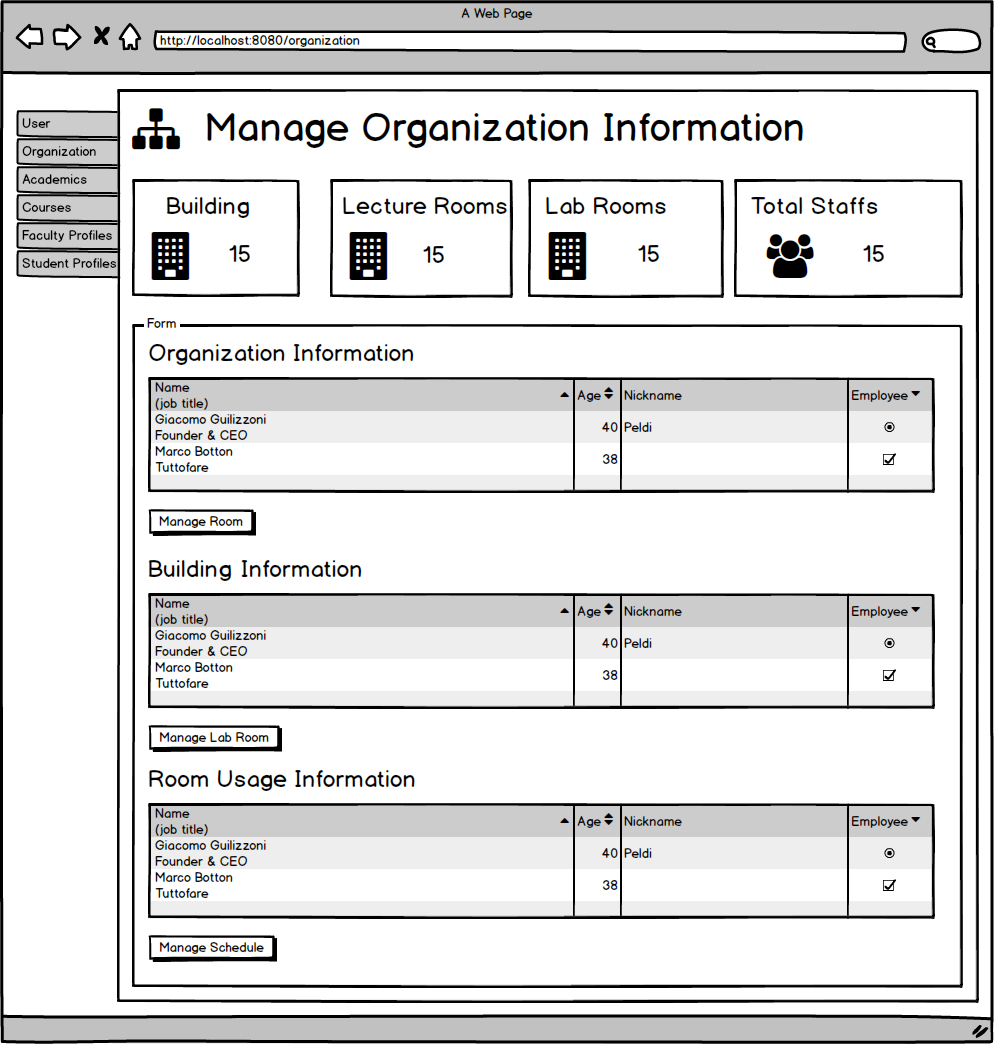
Img -Manage User Profile Page Prototype



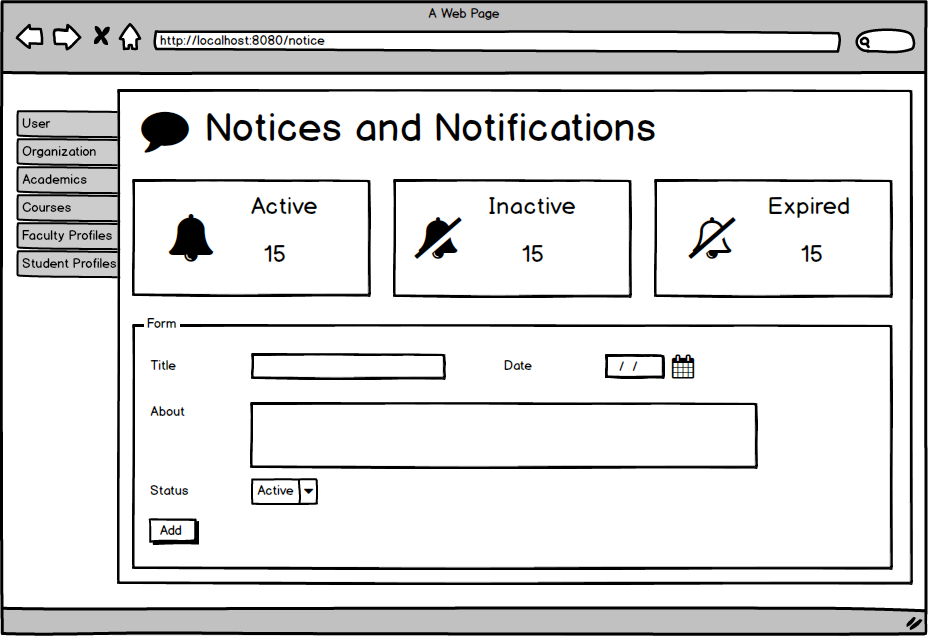
Img -Student Profile Page Prototype



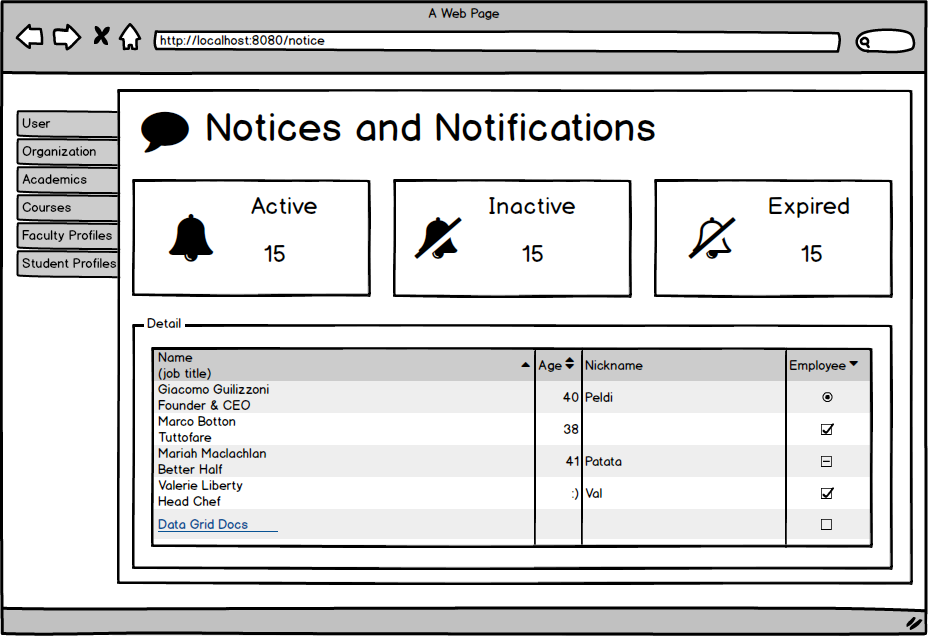
Img -Faculty Member Profile Page Prototype



Img -Organization Information Page Prototype



Img -Add Notice Page Prototype

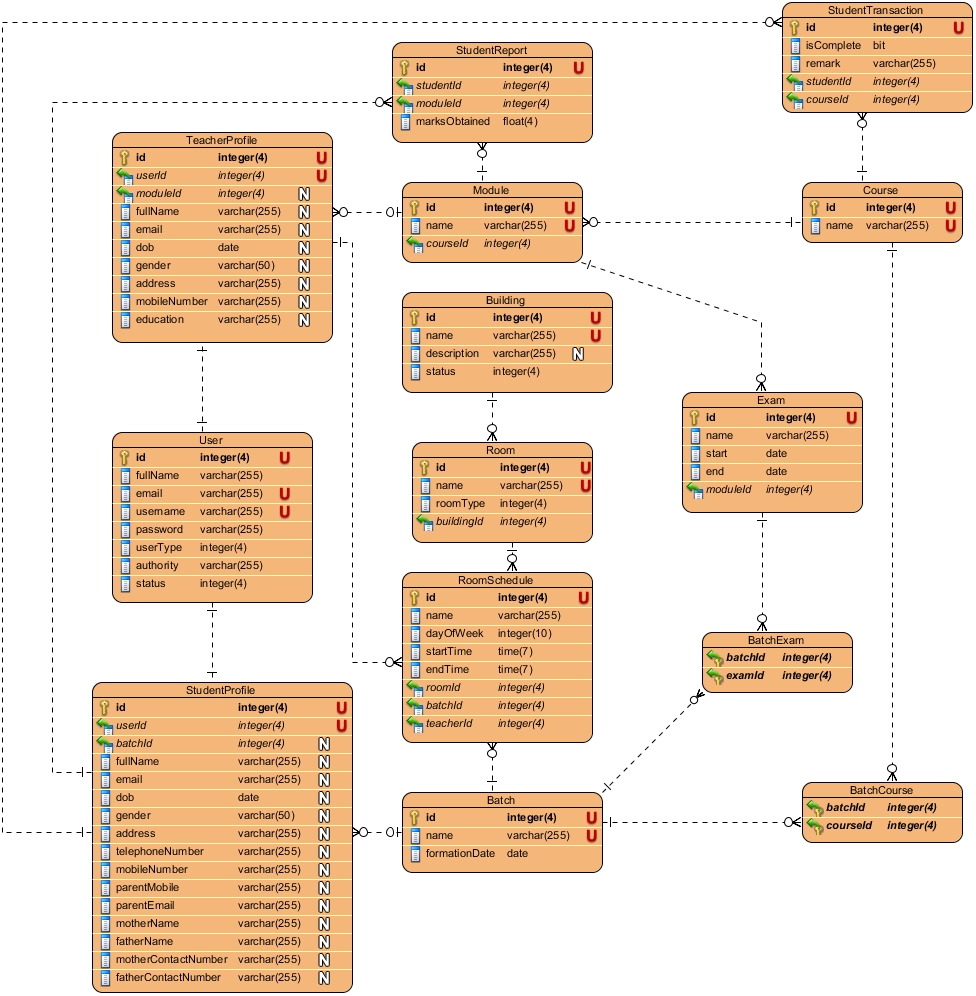


Img -Manage Notice Page Prototype

Database Modelling

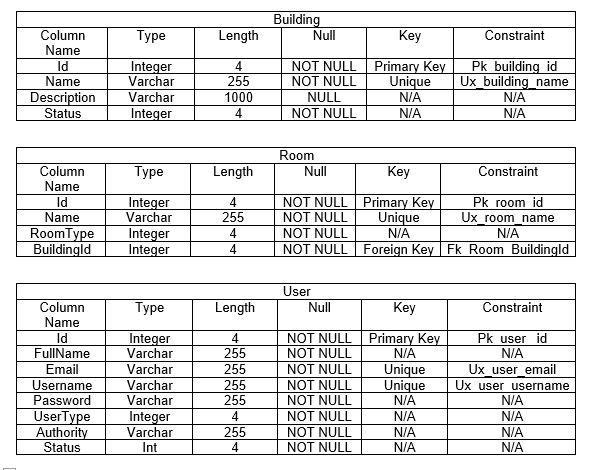
This modelling methodology presents the proposed logical design of the database along with the data dictionary. The logical database design is obtainable through **Entity Relationship Diagram (ER Diagram)**.

ER Diagram

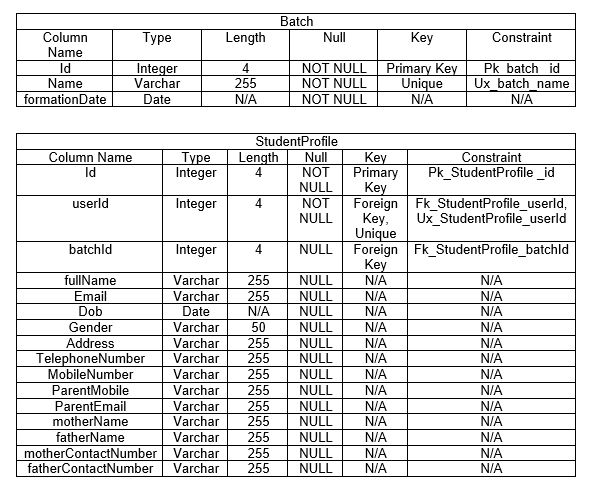


Img -ER Diagram

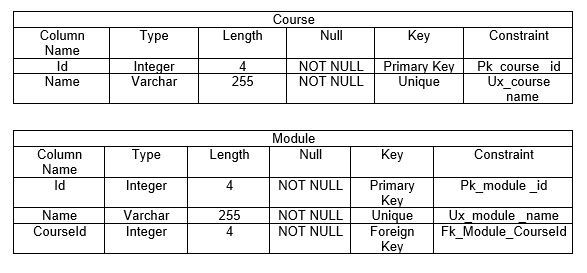
Data Dictionary



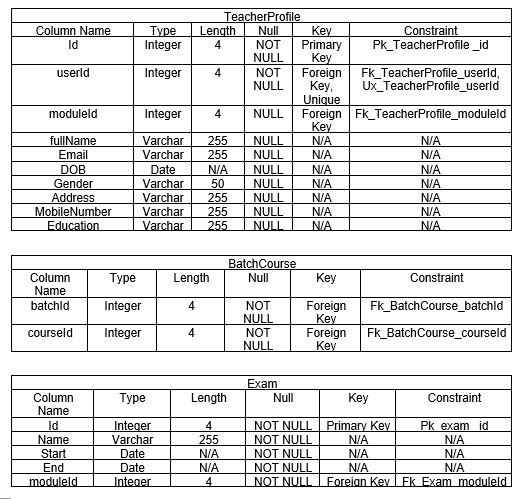
Img -Data Dictionary of Building, Room, User tables



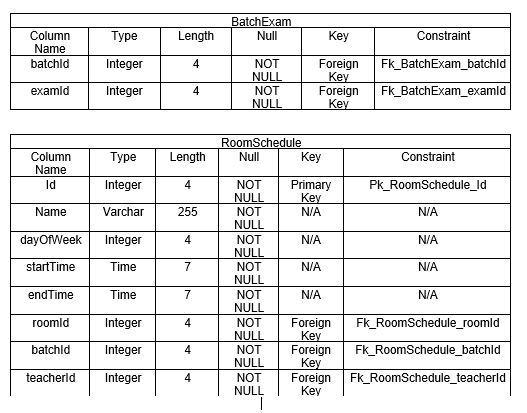
Img -Data Dictionary of Batch, Student Profile table



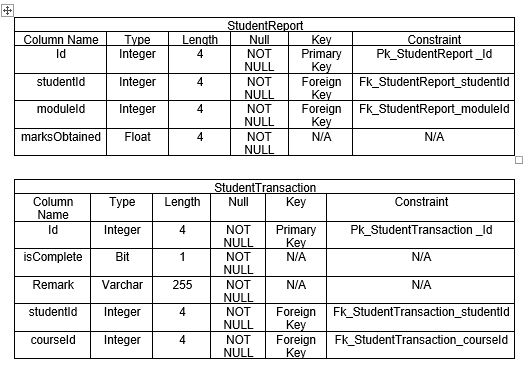
Img -Data Dictionary of Course, Module table



Img -Data Dictionary of TeacherProfile, BatchCourse, Exam tables



Img -Data Dictionary of BatchExam, RoomSchedule tables



Img -Data Dictionary of StudentReport, StudentTransaction tables

Architectural Modelling

Definition

An architecture model is a partial abstraction of a system. It is an approximation, and it captures the different properties of the system. It is a scaled-down version and is built with all the essential details of the system. (ScienceDirect, 2018)

Justification

The reasons for approaching this modelling methodology are mentioned below:

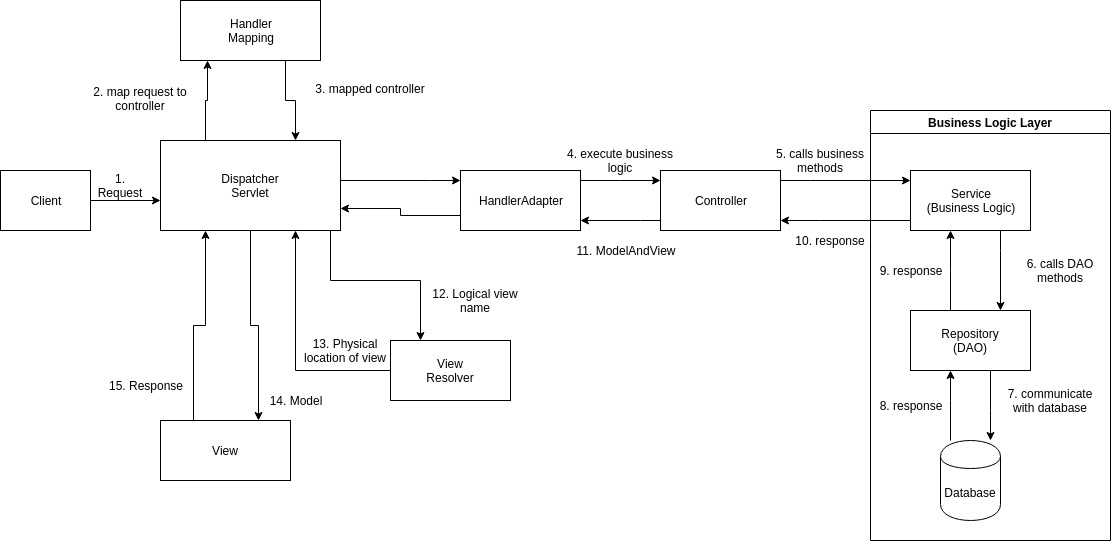
* It helps to easily identify the characteristics of the system and model it.
* It helps to visualize the information with the help of models.
* The basic knowledge of the system can be extracted from this modelling methodology.

Notations used

The notations used for this modelling are tabulated below:

|  |  |  |
| --- | --- | --- |
| Name | Notation | Description |
| Component |  | This notation represents the components of the system. It is generalization of various others components like class, interface, services, repositories. |
| Database |  | This notation represents the database used by the system. |
| Data/Process Flow |  | This notation represents the program flow. |

Actual Diagram



Img -Architectural Model

Diagram Description

The request of the client is handled by the DispatcherServlet, then appropriate controller is selected by HandlerMapping where the request URL is mapped and finally it returns the controller. DispatcherServlet forwards the process to HandlerAdapter where it calls Controller for executing the business logic. Controller executes the business logic. Business logic are implemented in different layers: Service layer, Repository layer or Data Access Object and the database. After the controller finishes executing business logic, it sets the result in Model and returns the logical view name to DispatcherServlet. With the application of ViewResolver, the physical page is returned into the view. Ultimately, the view is returned as the response.

Behavioral Modelling

Definition