

MEet and You

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1. Overview

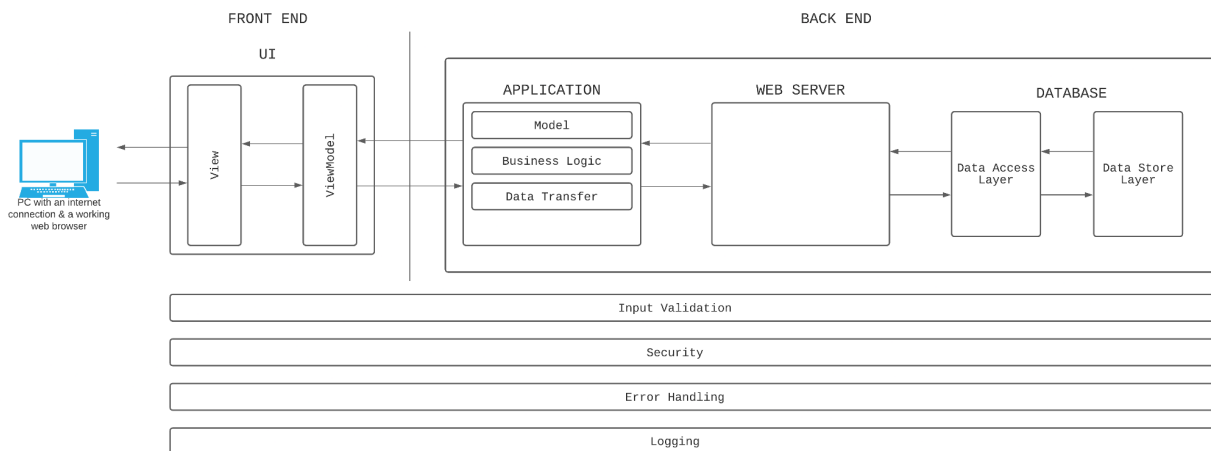
1.1. Purpose

The purpose of this high level design (HLD) document is to provide an overview of the MEet & You application. This document also gauges insight into the structure of our application.

1.2. Scope

MEet & You is intended to be a web application. In order to use MEet & You, a sufficient internet connection and access to a web browser are necessary. MEet & You will function as a single-page application (SPA), dynamically loading the content as the user navigates the website. It will also support the MVVM software architecture.

2. System Architecture



General Overview

Our system will be split into our front end, consisting of our User Interface (UI), back end, consisting of application implementation code, web server, and database management.

User Interface (UI) Layer

The user interface layer will house the front end of our application. This is the place where the user will be able to interact with and carry out functions like creating an itinerary or accessing their user dashboard. The UI layer will also take any user input, send that input through our system, and receive a corresponding output.

Input Validation in the UI Layer

Any input provided by the user in the UI layer will be checked before sending it to the other layers in our system. This ensures proper formatting of the input, which will maintain the integrity of the data going into our system. If misformatted data is entered by the user, our UI layer will communicate to the error handling layer, provide the user with an error, and allow them to re-enter their input.

Application Layer

Our application layer will house the model, business logic, and data transfer components. The models for our MVVM architecture will be stored here. These will be accessed by the ViewModel found in the UI layer. Any business logic stated in the Business Requirements Document will reside here as well. Data transfer, or the processing of user requests, will be handled here. It will transfer the user requests into statements understood by the data access layer and vice versa.

Input Validation in the Application Layer

Double-check any requests which pass through here to ensure everything is legit and nothing looks suspicious

The input validation at this part of our application will act

Web Server?

Data Access Layer

The data access layer would process any request from the user which requires information to be accessed via a database.

- Will act as a liaison between our user requests and data store
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Input Validation in the Data Access Layer

- Check to make sure the input received at this layer is the same thing the user inputted initially

Data Store Layer

- The central location where all the data is stored for our application

Security Layer

- Having Data Access Objects (DAOs) to access the database rather than interacting with the tables directly
- CAPTCHA/2FA

Error Handling Layer

For our application, we intend for our error handling layer to encompass our entire system. If an error does occur, then it will generate a log report and send it to the logging layer.

Logging Layer

Our logging layer will note specific events which occur in our system. Aspects of our application which we intend to log are:

- User logins/logouts
- Changes user makes to their account (changing email, password, phone number, deleting their account)
- Registered users
- Requests users make to our application layer
 - Could be data related
- Security breaches
 - DOS attacks
- Any errors in our system
 - Failed login attempts (aligns with business rule abt logging in)
 - Connection timeout from navigating the webpages
 - Anytime and anywhere where the user provides an invalid input
- Share folder rights & permissions
 - Role-based permissions?
- Use of application privileges
- Usage of application features by users
- Event categories utilised