Logo

Description automatically generated with medium confidence

**SOFTWARE ARCHITECTURE – SSE4350**

GROUP ASSIGNMENT

SOFEA EZZATY BINTI MOHD KHUSRI

207084

1. Identify QA(s) for your proposed system

Usability : The system must provide appropriate menus, toolbars, buttons and containers

Performance : App startup time must not exceed 7 seconds

Security : The system should provide secured login interface

Learnability : Time taken to train the venue manager and petrol station worker until they are familiar with the system must be within 1 week

Availability : The web application must have a backup server that can take over failed server

1. Suggest and describe tactic(s) to achieve the QA

Usability : One of the tactics to control usability is by separating the user interface from the rest of the application. Localizing expected changes is the rationale for semantic coherence. Since the user interface is expected to change frequently both during the development and after deployment, maintaining the user interface code separately will localize changes to it.

Performance : By "minifying" the HTML code, we want to eliminate any extraneous comments and whitespaces to make the code smaller. The loading times will be quicker the smaller the size of the HTML page. We employ Renato Marinho's "Laravel Page Speed" package to put this into practice. After installation, we add the classes to our website's middleware to minify the html on the loaded page.

Security : In general, security covers the capability of a software system to protect entities against attacks and misuse despite certain vulnerabilities and to protect the access to resources. Bcrypt hashing algorithms that are included in the Laravel Hash facade is used to make sure that our login interface is secured. AuthController controller that is included in this application, will take care of verifying the Bcrypt password against the un-hashed version provided by the user. This controller class also has 16 SSE4350 | Online Petrol Station Payment System Illuminate\Foundation\Auth\ThrottlesLogins trait that is used to limit inputs for incorrect passwords.

Learnability : One tactic for learnability is to provide First-time User Experience (FTUE) for our applications. FTUE helps user to learn how to get the most out OPSPS site. FTUE for an OPSPS application not for end-users but also for product support team such as venue manager and petrol station worker. Another tactic is continuity of task sequences. Give instructions up until the task sequence is finished when a user initiates a command from a menu or by clicking on an icon. By displaying a series of dialogue boxes or instructions on a status bar, for instance. Avoid requiring customers to switch between menus while completing a single operation.

Availability : Fault Detection - SolarWinds Network Performance Monitor Ping/echo fault detector is a tactic where one component issues a ping and expects to receive back an echo, within a predefined time, from the component under scrutiny. SolarWinds Network Performance Monitor (NPM) is intended to track uptime percentages and enable monitoring the fault and availability of the servers, and endpoints. It provides critical insight into a network's performance which assists in achieving optimal fine-nines availability. NPM is designed to discover the critical data on its own and then use it to generate network maps, charts, graphs, and performance reports that can be shared across multiple platforms and formats. NPM also speeds up troubleshooting by utilizing NetPathTM, which allows us to approach uptime issues caused by connectivity issues using hop-by-hop analysis. These features can aid in addressing and gathering critical uptime data that can be used to make plans and prepare for future failures.