Project: New Storefront: *WebSales*

1. **Introduction**

**1.1** This design document is for the New Storefront product for creating new extensions to the website. The product to be created is a combination of new features and existing online storefront WebSales.

**1.2** This is a custom development type of software because it is not distributed like Shrink-Wrap products, and is not a service sold over the internet.

**1.3** The customers are the owners of the business, while the users are the people who will be purchasing from the company’s online marketplace.

**1.4** Websales (name of company)

**2. Architecture**

**2.1** The main architecture pattern is a 3 tier client-server. This pattern was chosen as the project is for business applications and there will be clients interacting with the server which interacts with the database holding centralized data. In Figure 1, there is a diagram of the 3 tier client-server.

**1. Client**

**1.1** Clients are given access to a user interface that allows interaction through procedure calls to the application server, or business server. The application server allows clients to use features of Websales, such as searching for appliances, viewing appliances, selecting appliances, and comparing appliances. The application server is where interactions between the database of products and appliances and the clients occur and are evaluated. Clients require the interface and features from the application server and use remote procedure calls to access these.

**2. Database**

**2.1** The database contains all transaction tracking, product catalogs, product information, and non-product content such as seller’s information.

**3. Application Server**

**3.1** The main architectural pattern of the subsystem is a 3-tier client-server. This is because the client must interact with an application server online to be able to access the information stored in the database (see Figure 1), such as looking at specs and comparing different brands. The database provides information for the application server, and the application server provides an interface and functions for the clients.

**Figure 1:** 3 Tier Client-Server Diagram.

Remote Procedure Call

Remote Procedure Call

Remote Procedure Call

Component

Client 1

Client n

Client 2

Legend

Remote Procedure Call

Application

Server

Connector

Database

Remote Procedure Call

**3. Module Application Server Design**

**Sub Module 1: Comparisons Module**

**Purpose:** The purpose of the submodule is to use information from the database to compare products or appliances of the same type from different manufactures or versions.

**Rationale:** This sub-module is created to centralize processes related to product information comparisons.

**Required Interface:** Data about appliance models from the database. The getter functions retrieve the data of appliances and return appliance data based on the filters of the user.

**Provided Interface:** Compare function that takes a parameter of a specific filter(s) (price range, brand, type of appliance, etc), and calls on an appliance catalog to pull this information out, see Figure 2. It then returns the list comparing the parameters to each other, in descending or ascending order, depending on what is specified by the user. Handles exceptions for data that doesn’t exist.

**Figure 2: Comparison Sub-Module**

Application Server

Comparison

PC

Appliance Catalog

Component

Procedure

Call (PC)

Connector

Legend

**Sub Module 2: Support Site Access**

**Purpose:** The purpose of this module is to be able to support users with access to the product they bought

**Rationale:** This module is created to encapsulate the data storage and retrieval of individual support sites and product manuals.

**Required Interface:** The support site list and the product manual list to be able to access that data that the troubleshooter needs to return to the client.

**Provided Interface:** Troubleshooter function that takes a parameter of the specific appliance that needs to be searched and whether the user needs the manual or access to the support site. It then gets the data from the catalog specified and returns the file or the site.

**Figure 3: Support Site Access Diagram**

Application Server

Trouble Shooter

PC

Support Site Catalog

Component

Procedure

Call (PC)

Connector

Legend

PC

Product Manual Catalog

**Sub Module 3: Feedback Support**

**Purpose:** The purpose of this module is to allow users to submit feedback, in forms of errors with the appliance, reviews on the appliance and issues regarding the usability of the product.

**Rationale:** This module is created for user feedback to be stored in a feedback page. The manager then access the feedback page for feedback regarding the website.

**Required Interface:** The required interface of the Support Manager component interacts with the Feedback Page component to access the information submitted by clients or users.

**Provided Interface:** The provided interface of the User Feedback component interacts, through a remote procedure call, with the Feedback Page component to submit user input, or feedback, to the Feedback Page component. The provided interface of the Feedback Page component allows interaction with the Support Manager component to enable retrieval of feedback information.

**Figure 4: Feedback Support Diagram**

Application Server

User Feedback

RPC

Feedback Page

Component

Remote Procedure

Call (RPC)

Connector

Legend

Support Manager

RPC

**Sub Module 4: 3D Model View**

**Purpose:** The purpose of this module is to display 3D models from the 3D model storage to the users.

**Rationale:** This module centralizes all processes that have to do with creating a 3D model. The user can move the 3D model image to view the product.

**Required Interface:** This module requires interfaces from the database. It gets the 3D model data by key from a map, the key being the model ID.

**Provided Interface:** This module provides interfaces to the clients that are trying to see 3D Models. It receives a parameter of the model in question, and then returns the data required to display the model visually in 3D.

**Figure 2: Comparison Sub-Module**

Application Server

3D Model Storage

Component

Procedure

Call (PC)

Connector

Legend

PC

3D Modeling Module

**Sub Module 5: Recommendations using cookies**

**Purpose:** The purpose of this module is to recommend users other products based on their search history by detecting the client’s cookies.

**Rationale:** The rationale of this module is to have algorithms for determining what to suggest to clients based on their cookies.

**Required Interface:** Requires appliance data from the database. The getter functions retrieve the data of appliances and return appliance data.

**Provided Interface:** Recommendation function that takes cookie data as a parameter from the client, and then calls on the appliance catalog to receive products that match the data from the client’s cookies. It returns a list of products to be recommended to the client.

**Figure 6: Recommendations sub-module.**

Application Server

Recommendation

PC

Appliance Data Log

Component

Procedure

Call (PC)

Connector

Legend