

A. SOURCE CODE (SAS) FOR ANALYSIS

A.1. Analysis 2

A.1.1. Forward Selection

Listing 1: Forward Selection SAS Code (WebAppIndexHTML.txt).

```
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5   <meta charset="utf-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1">
7   <title>Gas Station Project</title>
8   <!-- update the version number as needed -->
9   <script defer src="/__/firebase/6.3.4/firebase-app.js"></script>
10
11   <!-- include only the Firebase features as you need -->
12   <script defer src="/__/firebase/6.3.3/firebase-auth.js"></script>
13   <script defer src="/__/firebase/6.3.3/firebase-database.js"></script>
14   <script defer src="/__/firebase/6.3.3/firebase-messaging.js"></script>
15   <script defer src="/__/firebase/6.3.3/firebase-storage.js"></script>
16   <!-- initialize the SDK after all desired features are loaded -->
17   <script defer src="/__/firebase/init.js"></script>
18
19 <style media="screen">
20   body {
21     background: #ECEFF1;
22     color: rgba(0, 0, 0, 0.87);
23     font-family: Roboto, Helvetica, Arial, sans-serif;
24     margin: 0;
25     padding: 0;
26   }
27
28   #message {
29     background: white;
30     max-width: 360px;
31     margin: 100px auto 16px;
32     padding: 32px 24px;
33     border-radius: 3px;
34   }
35
36   #message h2 {
37     color: #ffa100;
38     font-weight: bold;
39     font-size: 16px;
40     margin: 0 0 8px;
41   }
42
43   #message h1 {
44     font-size: 22px;
```

```

45     font-weight: 300;
46     color: rgba(0, 0, 0, 0.6);
47     margin: 0 0 16px;
48 }
49
50 #message p {
51     line-height: 140%;
52     margin: 16px 0 24px;
53     font-size: 14px;
54 }
55
56 #message a {
57     display: block;
58     text-align: center;
59     background: #039be5;
60     text-transform: uppercase;
61     text-decoration: none;
62     color: white;
63     padding: 16px;
64     border-radius: 4px;
65 }
66
67 #message,
68 #message a {
69     box-shadow: 0 1px 3px rgba(0, 0, 0, 0.12), 0 1px 2px rgba(0, 0, 0, 0.24);
70 }
71
72 #load {
73     color: rgba(0, 0, 0, 0.4);
74     text-align: center;
75     font-size: 13px;
76 }
77
78 @media (max-width: 600px) {
79
80     body,
81     #message {
82         margin-top: 0;
83         background: white;
84         box-shadow: none;
85     }
86
87     body {
88         border-top: 16px solid #ffa100;
89     }
90 }
91 </ style>
92 </ head>
93
94 < body>

```

```

95
96 <div id="message">
97   <h2>Welcome to Finding the cheapest gas</h2>
98   <iframe src="https://www.google.com/maps/d/u/0/embed?mid=10HRL3h7TFWcfmgj03_hCgXQYe0C
99     height="480"></iframe>
100   <p>GAS STATION: <b>Chevron</b></p>
101   <!--<h1 id="ChevronHeader">CHEVRON: </h1-->
102   <input type="textfield" id="textChevron" />
103   <button id="saveButtonChevron">Save</button>
104   <button id="loadButtonChevron">Load</button>
105   <p>GAS STATION: <b>Exxon</b></p>
106   <input type="textfield" id="textExxon" />
107   <button id="saveButtonExxon">Save</button>
108   <p>GAS STATION: <b>Sinclair</b></p>
109   <input type="textfield" id="textSinclair" />
110   <button id="saveButtonSinclair">Save</button>
111   <input type="textfield" id="textSinclairTimeStamp" />
112 </div>
113 <p id="load">Firebase SDK Loading&hellip;</p>
114
115 <script>
116
117   document.addEventListener('DOMContentLoaded', function () {
118
119     // // The Firebase SDK is initialized and available here!
120     //
121     // firebase.auth().onAuthStateChanged(user => { });
122     // firebase.database().ref('/path/to/ref').on('value', snapshot => { });
123     // firebase.messaging().requestPermission().then(() => { });
124     // firebase.storage().ref('/path/to/ref').getDownloadURL().then(() => { });
125     //
126
127
128     try {
129       let app = firebase.app();
130       let features = ['auth', 'database', 'messaging', 'storage'].filter(feature => type
131       document.getElementById('load').innerHTML = 'Firebase SDK loaded with ${features}
132
133       const config = {
134         apiKey: "AIzaSyBW8cyEkjFX4vx3DtU1pl3ZxLqCndM5zWg",
135         authDomain: "project-30a72.firebaseio.com",
136         databaseURL: "https://project-30a72.firebaseio.com",
137         projectId: "project-30a72",
138         storageBucket: "project-30a72.appspot.com",
139         messagingSenderId: "500650925586",
140         appId: "1:500650925586:web:820ac7156cb03576"
141       };
142       if (!firebase.apps.length) {
143         firebase.initializeApp(config);
144       }

```

```

145
146     // Get a reference to the database service
147     var database = firebase.database();
148     getData();
149     streamData();
150
151     } catch (e) {
152         console.error(e);
153         document.getElementById('load').innerHTML = 'Error loading the Firebase SDK, check
154     }
155
156     });
157
158     savePriceChanges();
159
160     function getData() {
161
162         loadButtonChevron.addEventListener('click', function() {
163             return firebase.database().ref('Stations/001').once('value').then(function(snapshot) {
164                 var priceChevron = (snapshot.val().Price && snapshot.val().Price)
165                 textChevron.value = priceChevron;
166                 console.log("Chevron Price = " + priceChevron);
167             })
168         })
169     }
170
171     function streamData() {
172
173         firebase.database().ref('Stations/002/Price').on('value', snap => {
174
175             console.log("EXXON CHANGED TO:" + snap.val());
176             textExxon.value = snap.val();
177
178         });
179
180         firebase.database().ref('Stations/003/Price').on('value', snap => {
181
182             console.log("SINCLAIR CHANGED TO:" + snap.val());
183             textSinclair.value = snap.val();
184
185         });
186
187         firebase.database().ref('Stations/003/Time').on('value', snap => {
188
189             console.log("SINCLAIR CHANGED TO:" + snap.val());
190             textSinclairTimeStamp.value = snap.val();
191
192         });
193
194     }

```

```

195
196 function savePriceChanges () {
197
198     saveButtonChevron.addEventListener('click', function () {
199         var timestamp = firebase.database.ServerValue.TIMESTAMP;
200         const docRef = firebase.database().ref('Stations/001');
201         const textToSave = textChevron.value;
202
203         console.log("CHEVRON NEW PRICE: " + textToSave)
204         firebase.database().ref('Stations/001').set({
205             Name: 'Chevron',
206             Price: textToSave,
207             Time: timestamp
208         }).then(function () {
209             console.log("Status saved!");
210         }).catch(function (error) {
211             console.log("YOU HAVE AN ERROR: ", error);
212         });
213     })
214
215     saveButtonExxon.addEventListener('click', function () {
216         var timestamp = firebase.database.ServerValue.TIMESTAMP;
217         const docRef = firebase.database().ref('Stations/002');
218         const textToSave = textExxon.value;
219
220         console.log("EXXON NEW PRICE: " + textToSave)
221         firebase.database().ref('Stations/002').set({
222             Name: 'Exxon',
223             Price: textToSave,
224             Time: timestamp
225         }).then(function () {
226             console.log("Status saved!");
227         }).catch(function (error) {
228             console.log("YOU HAVE AN ERROR: ", error);
229         });
230     })
231
232     saveButtonSinclair.addEventListener('click', function () {
233         var timestamp = firebase.database.ServerValue.TIMESTAMP;
234         const docRef = firebase.database().ref('Stations/003');
235         const textToSave = textSinclair.value;
236
237         console.log("SINCLAIR NEW PRICE: " + textToSave)
238         firebase.database().ref('Stations/003').set({
239             Name: 'Sinclair',
240             Price: textToSave,
241             Time: timestamp
242         }).then(function () {
243             console.log("Status saved!");
244         }).catch(function (error) {

```

```
245         console.log("YOU HAVE AN ERROR: ", error);
246     });
247 })
248
249 }
250
251 </script>
252 </body>
253
254 </html>
```