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## QUESTION & ANSWER



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**Exam** : **70-490**

**Title** : Recertification for MCSD:  
Windows Store Apps Using  
HTML5

**Version** : Demo

## 1. Topic 1, Scenario 1

### Application Information

You are developing two Windows Store apps by using JavaScript: a Personal Trainer app and a Client app. The apps will allow personal fitness trainers to interact with their remote clients.

### Business Requirements - Personal Trainer Application

The Personal Trainer app must allow trainers to perform the following tasks:

- . Create and store video and audio recordings of workout routines.
- . View the profile and workout recordings for only one client at any time.

### Business Requirements - Client Application

The Client app must allow clients to perform the following tasks:

- . Browse a list of the trainer's workout recordings.
- . Record workouts by using the built-in webcam.
- . Play, pause, restart, and stop workout recordings.
- . If the capability is supported, allow the client's webcam to pan as the client moves around the room.
- . Upload workout recordings for trainer review.
- . Update their individual profiles to indicate workouts completed, calories burned, and current weight.

The Client app must validate that the client's subscription is valid.

### Technical Requirements - General

The Personal Trainer and Client apps must meet the following technical requirements:

- . Connect to the Internet.
- . Store workout recordings in the cloud.
- . Enable retrieval of workout recordings by using a custom URL
- . Encapsulate the video player in a custom control.
- . Identify the maximum zoom of the user's webcam in millimeters.
- . Store client profiles in XML files in the trainers' Documents folders to allow for disconnected editing.
- . Synchronize the XML files with cloud storage by using a background task when the Internet is available.
- . Send trainer workout videos to cloud storage by using a background task when the trainer's device is idle. Indicate the status of the upload operation each time the trainer starts the app. Suspend the background task when the Internet is not available.
- . Separate business and complex logic into WinMD components. The solution debugging settings must include the WinMD components.

### Technical Requirements - Hardware Requirements

The Personal Trainer and Client apps must support the following hardware requirements:

- . Windows 8
- . Webcam, microphone, and speakers
- . Internet connection

While testing the apps, you identify the following issues:

- . When you start the app for the first time, the system displays this warning message: "This app needs permission to use your camera, which you can change in the app's settings."

- . When you run the loadClientProfile() method in the clientData.js file, you receive an 'Access Denied' exception.
- . The findCamera() method in the video.js file throws an exception on some devices.
- . The recordVideo() method in the video.js file throws an exception when the device does not support tilting.

```
CD01 function loadClientProfile() {
CD02     var fop = new Windows.Storage.Pickers.FileOpenPicker();
CD03     fop.viewMode = Windows.Storage.Pickers.PickerViewMode.thumbnail;
CD04
CD05     fop.fileTypeFilter.replaceAll([".xml"]);
CD06
CD07     (function (file) {
CD08         if (file) {
CD09             display(file);
CD10         }
CD11         else {
CD12             processError(file);
CD13         }
CD14     });
CD15 }
CD16
CD17 function saveClientProfile() {
CD18     var sp = new Windows.Storage.Pickers.FileSavePicker();
CD19     sp.defaultFileExtension = ".xml";
CD20     sp.suggestedFileName = "New Client";
CD21
CD22
CD23     sp.pickSaveFileAsync().then(
CD24         function (file) {
CD25             if (file) {
CD26                 displaySaved(file);
CD27             }
CD28             else {
CD29                 processError(file);
CD30             }
CD31         });
CD32 }
```

## video.js

```
VD01 function recordVideo() {
VD02     var device = new Windows.Media.Capture.MediaCapture();
VD03     var videoDev = device.videoDeviceController;
VD04     var canTilt = videoDev.tilt.capabilities.supported;
VD05
VD06
VD07     ...
VD08 }
VD09
VD10 var cameraID;
VD11
VD12 function findCamera() {
VD13     var deviceInfo = Windows.Devices.Enumeration.DeviceInformation;
VD14     deviceInfo.findAllAsync(Windows.Devices.Enumeration.DeviceClass.videoCapture).then
VD15     (function (devices) {
VD16         cameraID = devices[0].id;
VD17     }, errorHandler);
VD18 }
```

## background.js

```
BG01 function registerBackgroundTask(condition) {
BG02     var builder = new Windows.ApplicationModel.Background.BackgroundTaskBuilder();
BG03     builder.name = "videoLoader";
BG04     builder.taskEntryPoint = "background.js";
BG05     builder.setTrigger(
BG06         Windows.ApplicationModel.Background.SystemTrigger(
BG07
BG08     ));
BG09
BG10     ...
BG11 }
BG12
BG13 function unregisterBackgroundTask() {
BG14
BG15     var i = tasks.hasCurrent;
BG16     while (i) {
BG17         var task = tasks.current.value;
BG18         if (task.name === "videoLoader") {
BG19             task.unregister(true);
BG20         }
BG21         i = tasks.moveNext();
BG22     }
BG23 }
```

You need to debug the error that is displayed in the warning message.  
What should you do?

- A. Insert the following code segment at line VD18:

```
var result = new Windows.Media.Capture.CameraCaptureUI();  
result.videoSettings.setCameraEnabled();
```

- B. In the appsettings.appxmanifest file, add **Camera Settings** to the available declarations.

- C. Insert the following code segment at line VD18:

```
var result = new Windows.Media.Capture.CameraCaptureUI();  
result.photoSettings.setCameraEnabled();
```

- D. In the package.appxmanifest file, set the **Webcam** property in the **Capabilities** list.

A. Option A

B. Option B

C. Option C

D. Option D

**Answer: D**

2.You need to set the default storage location for the client profiles.

Which code segment should you insert at line CD04?

A. fop.suggestedStartLocation = Windows.Storage.Pickers.PickerLocationId.documents Library;

B. fop.defaultFolder = Windows.Storage.Piekers.PickerLocationId.documents Library;

C. fop.suggestedStartLocation = Windows.Storage.Pickers.PickerLocationId.videosLibrary;

D. fop.suggestedStartLocation = "%AppData%";

**Answer: B**

3.You need to retrieve the background task collection for the iteration loop.

Which code segment should you insert at line BG14?

A. var tasks = Windows.ApplicationModel.Background.BackgroundTaskRegistration.first();

B. var tasks = Windows.ApplicationModel.Background.BackgroundTaskRegistration.allTasks.first();

C. var tasks = Windows.ApplicationModel.Background.BackgroundTaskBuilder.allTasks.first();

D. var tasks = Windows.ApplicationModel.Background.BackgroundTaskRegistration.allTasks();

**Answer: B**

4.You need to complete the code to start the background task.

Which code segment should you insert at line BG07?

A. Windows.ApplicationModel.Background.SystemTriggerType.servicingComplete.true

B. Windows.ApplicationModel.Background.SystemTriggerType.userPresent.true

C. Windows.ApplicationModel.Background.SystemTriggerType.internetAvailable.false

D. Windows.ApplicationModel.Background.SystemTriggerType.userAway.false

**Answer: C**

## 5. Topic 2, Scenario 2

## Background

You are developing an app for an automotive manufacturer. The app will display information about the vehicle, the vehicle owner's manual, and the maintenance schedule. The app will be available to install from the Windows Store.

## Business Requirements

The app must meet the following business requirements:

- . Display the company logo on the Main screen, Owner's Manual screen, and Service Record screen of the app.
- . Allow users to store their vehicle information to identify the correct information to display within the app.
- . Prominently display a stock image of the user's vehicle on the Main screen at the full height of the app.
- . Send notifications by using tile updates when a scheduled maintenance is approaching or past due.
- . Insert service data in the appropriate locations, and update the Service Record screen with data received from a cloud service.
- . Display related media within the app.

## Technical Requirements

The app must meet the following technical requirements.

## User Experience.

The app user interface must follow Microsoft design guidelines.

- . The user must be able to insert or update service records.
- . The user must be able to filter service records by date or service type.
- . The user must be able to navigate between various Darts of the app including but not limited to the Mainscreen, Service Record screen, and Owner's Manual screen.
- . The user cannot switch between categories by using the Back button.
- . The data from the cloud service must automatically populate the Service Record screen.
- . The Main screen must have a dark background. All other screens must have a light background with contrasting colored text.
- . All multimedia must provide a full-screen mode that can be activated by the end user.
- . All media items must start when the user interacts with them and stop immediately when a video ends.
- . The app must accept and display tile messages and notification messages from the cloud service.
- . The navigational icons must not be displayed if the content of the screen does not require such display.
- . Any page of the owner's manual must be able to be pinned to the Windows Start screen.
- . When the app is pinned to the Windows Start screen all live tile sizes must be available to the users.
- . When a specific app page is pinned to the Windows Start screen, the page tile cannot be wider or taller than the dimensions of a wide tile.
- . Short names and display names must not be displayed on square tiles.

## Development

- . The app must use Microsoft Visual Studio preconfigured templates with built-in data structures.
- . External notifications must be delivered by using Windows Push Notification Services (WNS).
- . The app must be able to receive push notifications from a Microsoft Azure Mobile Services endpoint.
- . Each HTML file must be supported by similarly named JavaScript and CSS files (for example, myFile.html, myFile.js myFile.css).

File: main.html



Relevant portions of the app files are shown below. Line numbers in the code segments are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```
MH01 <!DOCTYPE html>
MH02 <html>
MH03 <head>
MH04 ...
MH05 <div class="section3" data-win-control="WinJS.UI.HubSection" data-win-options=
"{ isHeaderStatic: true }"
MH06 data-win-res="{ winControl: {'header': 'Section3'} }">
MH07 <div class="top-image-row">
MH08 <video id="playMedia" style="position: relative;"
poster="/images/blank1.jpg"></video>
MH09 </div>
MH10 <div class="sub-image-row">
MH11 
MH12 
MH13 
MH14 </div>
MH15 <div class="win-type-medium" data-win-res="{ textContent: 'DescriptionText'
}"></div>
MH16 <div class="win-type-small">
MH17 <span data-win-res="{ textContent: 'Section3Description' }"></span>
MH18 </div>
MH19 </div>
MH20 ...
MH21 </html>
```

File: main.js

Relevant portions of the app files are shown below. Line numbers in the code segments are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```
MJ01 (function () {
MJ02 "use strict";
MJ03 ...
MJ04 });
MJ05 })();
MJ06 function playMedia(e) {
MJ07 return function () {
MJ08 var vid = WinJS.Utilities.query("#playMedia")[0];
MJ09 switch(e)
MJ10 {
MJ11 case 1:
MJ12 src = "media/movie1.mp4";
MJ13 break;
MJ14 case 2:
MJ15 src = "media/movie2.mp4";
MJ16 break;
MJ17 default:
MJ18 src = "media/movie3.mp4";
MJ19 }
MJ20 vid.src = src;
MJ21 vid.play();
MJ22 };
MJ23 }
```

File: manual.html



Relevant portions of the app files are shown below. Line numbers in the code segments are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```
OH01 <!DOCTYPE html>
OH02 <html>
OH03 <head>
OH04   <meta charset="utf-8" />
OH05   <title>>manual</title>
OH06   <link href="//Microsoft.WinJS.2.0/css/ui-dark.css" rel="stylesheet" />
OH07   <script src="//Microsoft.WinJS.2.0/js/base.js"></script>
OH08   <script src="//Microsoft.WinJS.2.0/js/ui.js"></script>
OH09   <link href="manual.css" rel="stylesheet" />
OH10   <script src="manual.js"></script>
OH11 </head>
OH12 <body>
OH13   <div class="manual fragment">
OH14     <header aria-label="Header content" role="banner">
OH15       <button data-win-control="WinJS.UI.BackButton"></button>
OH16       <h1 class="titlearea win-type-ellipsis">
OH17         <span class="pagetitle">Owner's Manual</span>
OH18       </h1>
OH19     </header>
OH20     <section aria-label="Main content" role="main">
OH21       <p>Owner's Manual Content</p>
OH22     </section>
OH23     <div id="appBar" data-win-control="WinJS.UI.AppBar" data-win-options="">
OH24       <button data-win-control="WinJS.UI.AppBarCommand"
OH25         data-win-options="{id:'cmdPin',label:'Pin To Start',icon:'pin',
OH26         section:'global',tooltip:''}"></button>
OH27     </div>
OH28 </body>
</html>
```

File: manual.js

Relevant portions of the app files are shown below. Line numbers in the code segments are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```

0J01 (function () {
0J02     "use strict";
0J03     WinJS.UI.Pages.define("/pages/manual/manual.html", {
0J04         ready: function (element, options) {
0J05             document.getElementById("cmdPin").addEventListener("click",
0J06                 pinSecondaryTile, false);
0J07             var navState = {
0J08                 backStack: WinJS.Navigation.history.backStack.slice(0),
0J09                 forwardStack: WinJS.Navigation.history.forwardStack.slice(0),
0J10                 current: WinJS.Navigation.history.current
0J11             };
0J12             WinJS.Navigation.history = navState;
0J13         },
0J14         unload: function () {
0J15         },
0J16         updateLayout: function (element) {
0J17         }
0J18     });

0J19     function pinSecondaryTile() {
0J20         var SecondaryTileId = "SecondaryTile.Logo";
0J21         var square70x70Logo =
0J22             new Windows.Foundation.Uri("ms-appx:///Images/square70x70Tile-sdk.png");
0J23         var square150x150Logo =
0J24             new Windows.Foundation.Uri("ms-appx:///Images/square150x150Tile-sdk.png");
0J25         var wide310x150Logo =
0J26             new Windows.Foundation.Uri("ms-appx:///Images/wide310x150Tile-sdk.png");
0J27         var square30x30Logo =
0J28             new Windows.Foundation.Uri("ms-appx:///Images/square30x30Tile-sdk.png");
0J29         var var1 = new Date();
0J30         var newTileActivationArguments = SecondaryTileId + " WasPinnedAt=" + var1;
0J31         var tile = new Windows.UI.StartScreen.SecondaryTile(SecondaryTileId,
0J32             "Owner's Manual", newTileActivationArguments,
0J33             square150x150Logo,
0J34             Windows.UI.StartScreen.TileSize.Square150x150);
0J35         tile.visualElements.wide310x150Logo = wide310x150Logo;
0J36         tile.visualElements.square30x30Logo = square30x30Logo;
0J37         tile.visualElements.foregroundText = Windows.UI.StartScreen.ForegroundText
0J38             .dark;
0J39         tile.requestCreateForSelectionAsync({ x: 0, y: 0, width: 640, height: 400 },
0J40             Windows.UI.Popups.Placement.below);
0J41     }
0J42 }());

```

File: service.html

Relevant portions of the app files are shown below. Line numbers in the code segments are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```

SH01 <!DOCTYPE html>
SH02 <html>
SH03 <head>
SH04 ...
SH05 </head>
SH06 <body>
SH07
SH08 </body>
SH09 </html>

```

File: service.js

Relevant portions of the app files are shown below. Line numbers in the code segments are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```

SJ01 (function () {
SJ02     "use strict";
SJ03     WinJS.UI.Pages.define("/pages/service/service.html", {
SJ04         ready: function (element, options) {
SJ05             var buttonSave = document.getElementById("btnAddServiceRecord");
SJ06             var client = new WindowsAzure.MobileServiceClient(
SJ07                 "https://cardataservice17.azure-mobile.net/", "myPrivateKey"
SJ08             );
SJ09             ...
SJ10         });
SJ11     function updateTile() {
SJ12         var Notification = Notification;
SJ13         var square310x310Xml = Notification.TileUpdateManager.getTemplateContent
SJ14             (Notification.TileTemplateType.tileSquare310x310Text05);
SJ15         square310x310Xml.getElementsByTagName("text")[0].setAttribute("id", "1");
SJ16         square310x310Xml.getElementsByTagName("text")[0].appendChild
SJ17             (square310x310Xml.createTextNode("My Alert"));
SJ18         var wide310x150Xml = Notification.TileUpdateManager.getTemplateContent
SJ19             (Notification.TileTemplateType.tileWide310x150Text03);
SJ20         var tileTextAttributes = wide310x150Xml.getElementsByTagName("text");
SJ21         tileTextAttributes[0].appendChild(wide310x150Xml.createTextNode
SJ22             ("My Alert"));
SJ23         var square150x150Xml = Notification.TileUpdateManager.getTemplateContent
SJ24             (Notification.TileTemplateType.tileSquare150x150Text04);
SJ25         var squareTileTextAttributes = square150x150Xml.getElementsByTagName
SJ26             ("text");
SJ27         squareTileTextAttributes[0].appendChild(square150x150Xml.createTextNode
SJ28             ("My Alert"));
SJ29         var node =
SJ30             square310x310Xml.importNode(square150x150Xml.getElementsByTagName
SJ31                 ("binding").item(0), true);
SJ32         square310x310Xml.getElementsByTagName("visual").item(0).appendChild(node);
SJ33         node =
SJ34             square310x310Xml.importNode(wide310x150Xml.getElementsByTagName("binding")
SJ35                 .item(0), true);
SJ36         square310x310Xml.getElementsByTagName("visual").item(0).appendChild(node);
SJ37         var appNotification = new Notification.TileNotification(square310x310Xml);
SJ38     }
SJ39 })();

```

You need to implement the navigation between screen categories.

What should you do?

- A. Place one button for each category on every screen and use the WinJS.navigate command to go to the category screens.
- B. Implement category navigation controls on the nav bar on every screen.
- C. Implement category navigation controls on the app bar on every screen.
- D. Place one link for each category on every screen and use an <href> tag to go to the category screens.

**Answer: B**