



**UNIVERSITI MALAYSIA TERENGGANU**

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**CSM3103 FRONT-END PROGRAMMING (K1)**

**BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH  
HONORS**

**LAB 2**

**SEMESTER II 2023/2024**

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## Lab 2

### Task 1 – Setup and configure Apache cordova on your desktop/laptop

- Do a research on how to install Apache Cordova
- Install the Apache Cordova according to research
- Write a step by step process based on your successful experience on How to install Apache Cordova

```
Microsoft Windows [Version 10.0.22000.2138]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>install -g cordova
'install' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\User>npm install -g cordova
npm deprecated tar-validator@1.5.1: this library is no longer supported
npm deprecated @pnpm/nuke-file@0.0.1: This functionality has been moved to @pnpm/fs
npm deprecated uuid@4.8.0: Please upgrade to version 7 or higher. Older versions may use Math.random() in certain circumstances, which is known to be problematic. See https://v8.dev/blog/math-random for details.
npm deprecated request@2.88.2: request has been deprecated, see https://github.com/request/request/issues/3142
npm deprecated stringify-package@1.0.1: This module is not used anymore, and has been replaced by @pnpm/package-json
added 547 packages in 3s

62 packages are looking for funding
  run `npm fund` for details
npm notice
npm notice New patch version of npm available! 10.5.0 -> 10.5.2
npm notice Changelog: https://github.com/npm/cli/releases/tag/v10.5.2
npm notice Run npm install -g npm@10.5.2 to update!
npm notice

C:\Users\User>cordova create helloworld.helloWorld
? May Cordova anonymously report usage statistics to improve the tool over time? Yes

Thanks for opting into telemetry to help us improve cordova.
Creating a new cordova project.

C:\Users\User>cd helloworld
The system cannot find the path specified.

C:\Users\User>cd helloworld
The system cannot find the path specified.

C:\Users\User>cordova run browser
Current working directory is not a Cordova-based project.

C:\Users\User>helloworld
'helloworld' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\User>cd helloworld
The system cannot find the path specified.

C:\Users\User>cd helloworld.helloWorld
```

## Task 2 – Your First Apache Cordova Application

- a. Create a folder where your Apache Cordova Project will be stored
  - 1. Open command prompt
  - 2. Type : cd Desktop
  - 3. Type: mkdir cordovaProject
  - 4. Type: cd cordovaProject
- b. Now you are in the cordovaProject working area. Your C prompt will look like:

C:\Users\Desktop\cordovaProject>

- c. Create a new Cordova Project by the following command
  - 1. cordova create Task2Hello io.csm3103.lab2 Task2
  - 2. cd Task2Hello
- d. Add android platform to the project
  - 1. cordova platform add browser
- e. Add browser platform to the project
  - 1. Cordova platform add browser
- f. Test your first Cordova Project on browser 1. cordova run browser
- g. Test your first Cordova project on android

```
Windows PowerShell
Microsoft Windows [Version 10.0.22631.3447]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>cd Desktop

C:\Users\User\Desktop>mkdir cordovaProject

C:\Users\User\Desktop>cd cordovaProject

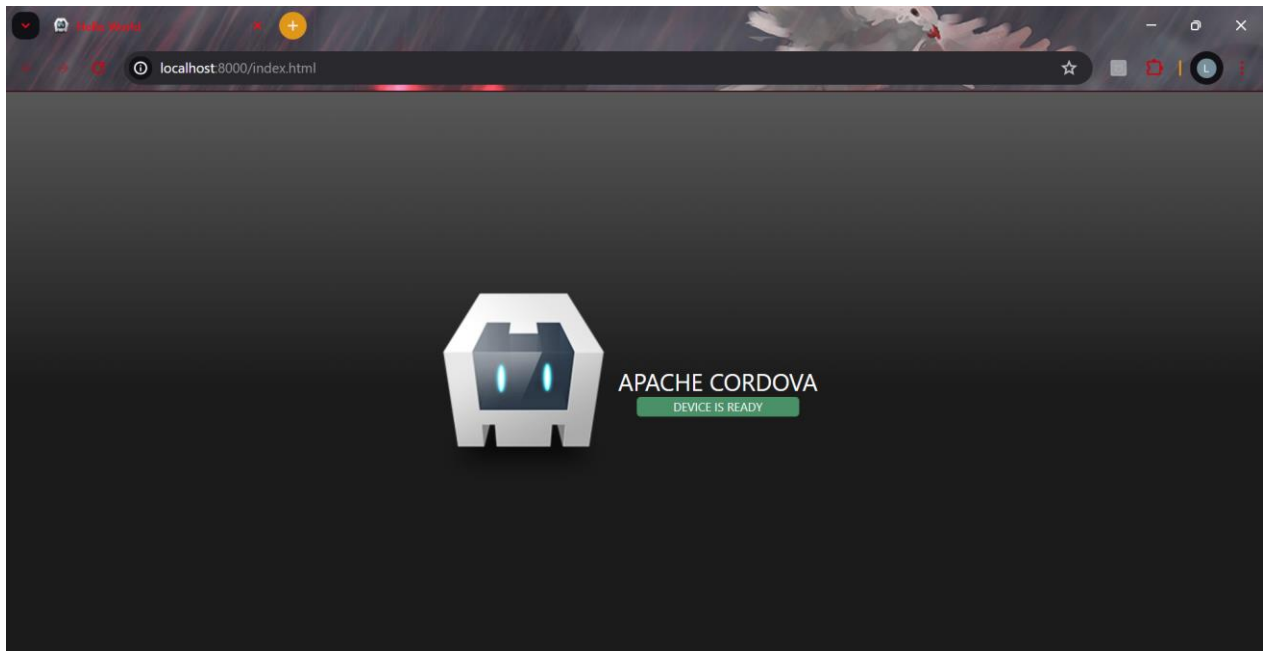
C:\Users\User\Desktop\cordovaProject>cordova create Task2Hello io.csm3103.lab2 Task2
Creating a new cordova project.

C:\Users\User\Desktop\cordovaProject>cd Task2Hello

C:\Users\User\Desktop\cordovaProject\Task2Hello>cordova platform add android
Using cordova-fetch for cordova-android
Adding android project...
Creating Cordova project for the Android platform:
  Path: platforms\android
  Package: io.csm3103.lab2
  Name: Task2
  Activity: MainActivity
  Android Target SDK: android-33
  Android Compile SDK: 33
Subproject Path: CordovaLib
Subproject Path: app
Android project created with cordova-android@12.0.1
```

```
C:\Users\User\Desktop\cordovaProject\Task2Hello>Cordova platform add browser
Using cordova-fetch for cordova-browser
Adding browser project...
Creating Cordova project for cordova-browser:
  Path: C:\Users\User\Desktop\cordovaProject\Task2Hello\platforms\browser
  Name: Task2

C:\Users\User\Desktop\cordovaProject\Task2Hello>cordova run browser
startPage = index.html
Static file server running @ http://localhost:8000/index.html
CTRL + C to shut down
304 /index.html
304 /css/index.css
304 /img/logo.png
200 /cordova.js (gzip)
304 /js/index.js
404 /cordova_plugins.js
```



### Task3 – Simple eventListener in Cordova Project

1. Create new cordova project call Task3

```
Windows PowerShell
Microsoft Windows [Version 10.0.22631.3447]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>cd Desktop

C:\Users\User\Desktop>mkdir cordovaProject
A subdirectory or file cordovaProject already exists.

C:\Users\User\Desktop>cd cordovaProject

C:\Users\User\Desktop\cordovaProject>cordova create Task3Hello io.csm3103.lab2 Task3
Creating a new cordova project.

C:\Users\User\Desktop\cordovaProject>cd Task3Hello

C:\Users\User\Desktop\cordovaProject\Task3Hello>cordova platform add android
Using cordova-fetch for cordova-android
Adding android project...
Creating Cordova project for the Android platform:
  Path: platforms\android
  Package: io.csm3103.lab2
  Name: Task3
  Activity: MainActivity
  Android Target SDK: android-33
  Android Compile SDK: 33
Subproject Path: CordovaLib
Subproject Path: app
Android project created with cordova-android@12.0.1
```

```

C:\Users\User\Desktop\cordovaProject\Task3Hello>cordova platform add browser
Using cordova-fetch for cordova-browser
Adding browser project...
Creating Cordova project for cordova-browser:
  Path: C:\Users\User\Desktop\cordovaProject\Task3Hello\platforms\browser
  Name: Task3

C:\Users\User\Desktop\cordovaProject\Task3Hello>cordova run browser
ser
startPage = index.html
Static file server running @ http://localhost:8000/index.html
CTRL + C to shut down
304 /index.html
304 /css/index.css
200 /cordova.js (gzip)
304 /img/logo.png
304 /js/index.js
404 /cordova_plugins.js

```

2. Open file explorer and explore your project folder and goto to /www/js folder
3. Open index.js file and add the following code

```

document.addEventListener('volumedownbutton', onVolumeKeyDown, false);

function onVolumeKeyDown(){
    alert("You press volume down!");
}

document.addEventListener('backbutton', onBackButton, false);

function onBackButton(e){
    e.preventDefault();
    alert("back button pressed!");
}

```

4. Run your app
5. Press volume down button
6. Press Back Button
7. What is the purpose of e.preventDefault()
8. Do some research on how to add two controls to you index.js to do the following:
  - a. Handle volume up button

```
document.addEventListener('volumeupbutton', onVolumeKeyUp, false);

function onVolumeKeyUp(){
    alert("You press volume up!");
}

document.addEventListener('upbutton', onUpButton, false);

function onUpButton(e){
    e.preventDefault();
    alert("Up button pressed!");
}
}
```

b. Handle menu button

```
28 document.addEventListener('backbutton', onBackButton, false);
29
30 function onBackButton(e){
```

2:37

3G



APACHE CORDOVA

DEVICE IS READY



## Task 4 – Cordova Plugin use case (Simple Geolocation)

### 1. Create new cordova project

```
C:\WINDOWS\system32\cmd. X + v
Microsoft Windows [Version 10.0.22631.3447]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>cd Desktop

C:\Users\User\Desktop>cd cordovaProject

C:\Users\User\Desktop\cordovaProject>cordova create Task4Hello io.csm3103.lab2 Task4
Creating a new cordova project.

C:\Users\User\Desktop\cordovaProject>cd Task4Hello

C:\Users\User\Desktop\cordovaProject\Task4Hello>cordova platform add android
Using cordova-fetch for cordova-android
Adding android project...
Creating Cordova project for the Android platform:
  Path: platforms\android
  Package: io.csm3103.lab2
  Name: Task4
  Activity: MainActivity
  Android Target SDK: android-33
  Android Compile SDK: 33
Subproject Path: CordovaLib
Subproject Path: app
Android project created with cordova-android@12.0.1

C:\Users\User\Desktop\cordovaProject\Task4Hello>cordova platform add browser
Using cordova-fetch for cordova-browser
Adding browser project...
Creating Cordova project for cordova-browser:
  Path: C:\Users\User\Desktop\cordovaProject\Task4Hello\platforms\browser
  Name: Task4
```

2. Goto your project
3. Add the following code to index.html

```
<button id="getPosition">Current Position</button>
<button id="watchPosition">Watch Position</button>
```

4. Open index.js and add the following code inside the ready function

```

document.getElementById("getPosition").addEventListener("click", getPosition);

function getPosition(){
    var options = {
        enableHighAccuracy: true,
        maximumAge: 3600000
    };

    var watchID = navigator.geolocation.getCurrentPosition(onSuccess, onError, options);

    function onSuccess(position){
        alert('Latitude: ' + position.coords.latitude + '\n' +
            'Longitude: ' + position.coords.longitude + '\n' +
            'Altitude: ' + position.coords.altitude + '\n' +
            'Accuracy: ' + position.coords.accuracy + '\n' +
            'Altitude Accuracy: ' + position.coords.altitudeAccuracy + '\n' +
            'Heading: ' + position.coords.heading + '\n' +
            'Speed: ' + position.coords.speed + '\n' +
            'Timestamp: ' + position.timestamp + '\n');
    };

    function onError(error) {
        alert('code: ' + error.code + '\n' + 'message: ' + error.message + '\n');
    }
}

```

```

document.getElementById("watchPosition").addEventListener("click", watchPosition);

function watchPosition() {
    var options = {
        maximumAge: 3600000,
        timeout: 3000,
        enableHighAccuracy: true,
    };

    var watchID = navigator.geolocation.watchPosition(onSuccess, onError, options);

    function onSuccess(position) {
        alert('Latitude: ' + position.coords.latitude + '\n' +
            'Longitude: ' + position.coords.longitude + '\n' +
            'Altitude: ' + position.coords.altitude + '\n' +
            'Accuracy: ' + position.coords.accuracy + '\n' +
            'Altitude Accuracy: ' + position.coords.altitudeAccuracy + '\n' +
            'Heading: ' + position.coords.heading + '\n' +
            'Speed: ' + position.coords.speed + '\n' +
            'Timestamp: ' + position.timestamp + '\n');
    };

    function onError(error) {
        alert('code: ' + error.code + '\n' + 'message: ' + error.message + '\n');
    }
}

```

```

1 <!DOCTYPE html>
2 <html>
3   <head>
4     <meta charset="utf-8">
5     <meta http-equiv="Content-Security-Policy" content="default-src 'self' data: https://ssl.gstatic.com 'unsafe-
6     <meta name="format-detection" content="telephone=no">
7     <meta name="msapplication-tap-highlight" content="no">
8     <meta name="viewport" content="initial-scale=1, width=device-width, viewport-fit=cover">
9     <meta name="color-scheme" content="light dark">
10    <link rel="stylesheet" href="css/index.css">
11    <title>Hello World</title>
12  </head>
13  <body>
14    <div class="app">
15      <h1>Apache Cordova</h1>
16      <button id="getPosition">Current Position</button>
17      <button id="watchPosition">Watch Position</button>
18      <div id="deviceready" class="blink">
19        <p class="event listening">Connecting to Device</p>
20        <p class="event received">Device is Ready</p>
21      </div>
22    </div>
23    <script src="cordova.js"></script>
24    <script src="js/index.js"></script>
25  </body>
26 </html>

```

```

C: > Users > User > Desktop > cordovaProject > Task4Hello > www > js > JS index.js > ⚙️ getPosition
1 document.addEventListener('deviceready', onDeviceReady, false);
2
3 function onDeviceReady() {
4   // Cordova is now initialized. Have fun!
5
6   console.log('Running cordova-' + cordova.platformId + '@' + cordova.version);
7   document.getElementById('deviceready').classList.add('ready');
8 }
9
10 document.getElementById("getPosition").addEventListener("click", getPosition);
11
12 function getPosition() {
13   var options = {
14     enableHighAccuracy: true,
15     maximumAge: 3600000
16   }
17
18   var watchID = navigator.geolocation.getCurrentPosition(onSuccess, onError, options);
19
20   function onSuccess(position) {
21     alert('Latitude: ' + position.coords.latitude + '\n' +
22         'Longitude: ' + position.coords.longitude + '\n' +
23         'Altitude: ' + position.coords.altitude + '\n' +
24         'Accuracy: ' + position.coords.accuracy + '\n' +
25         'Altitude Accuracy: ' + position.coords.altitudeAccuracy + '\n' +
26         'Heading: ' + position.coords.heading + '\n' +
27         'Speed: ' + position.coords.speed + '\n' +
28         'Timestamp: ' + position.coords.timestamp + '\n');
29

```

```

30     };
31
32     function onError(error) {
33         alert('code: ' + error.code + '\n' + 'message: ' + error.message +
34     }
35 }
36
37
38 document.getElementById("watchPosition").addEventListener("click", watchPosition);
39
40 function watchPosition() {
41     var options = {
42         maximumAge: 3600000,
43         timeout: 3000,
44         enableHighAccuracy: true,
45     }
46
47     var watchID = navigator.geolocation.watchPosition(onSuccess, onError, options);
48
49     function onSuccess(position) {
50         alert('Latitude: ' + position.coords.latitude + '\n' +
51             'Longitude: ' + position.coords.longitude + '\n' +
52             'Altitude: ' + position.coords.altitude + '\n' +
53             'Accuracy: ' + position.coords.accuracy + '\n' +
54             'Altitude Accuracy: ' + position.coords.altitudeAccuracy + '\n' +
55             'Heading: ' + position.coords.heading + '\n' +
56             'Speed: ' + position.coords.speed + '\n' +
57             'Timestamp: ' + position.coords.timestamp + '\n');
58     };
59
60 };
61
62 function onError(error) {
63     alert('code: ' + error.code + '\n' + 'message: ' + error.message +
64 }
65 }
66

```

5. It is best to test this code using physical device
6. Enable developer mode. Press Android version 7 times)
7. Enable usb debugging in developer option
8. Enable always on in developer option
9. Connect your device with usb
10. And run cordova



Current Position

Watch Position

APACHE CORDOVA

CONNECTING TO DEVICE