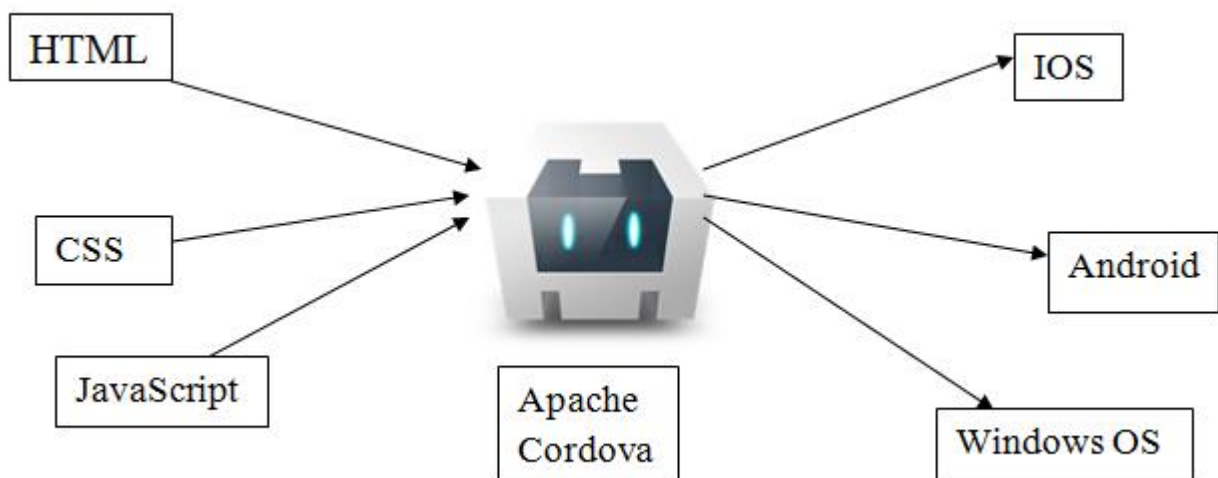


Introduction to Apache Cordova

Apache Cordova is an open-source mobile development framework. It is a simple project used to build hybrid applications for mobile devices using the three web technologies: HTML, CSS & JAVASCRIPT.

Web applications cannot use the native mobile functionalities by default, so we can use the Cordova as a container for connecting our web apps with mobile functionalities.

HTML5 designs the user interface, and by the use of CSS, we can add the styles and the applications programming interface written in JavaScript.



Evaluation of Cordova

PhoneGap is a software development framework which is created by a startup called Nitobi in 2009. It is used to develop native mobile applications with web technologies.

In 2011, Nitobi was acquired by Adobe and donated open source core to the Apache Software Foundation, who rebranded PhoneGap as an Apache Cordova.

Features of Apache Cordova

Following are the features of Cordova:

- Command Line Interface: This feature can be used to installing plugins, for starting projects and for building the process in different platforms.
- Cordova Core Components: Cordova provides various components that the mobile application needs.
- Cordova plugins: Provides different APIs which used for implements native mobile functionalities in our JavaScript code.

Advantages of Apache Cordova

The advantages of Cordova are as follows:

- No need to learn platform-specific Programming languages when working with the Cordova.
- By using the Apache Cordova, we can develop one app that can be used on different platforms.
- In the Cordova, the apps can be built easily.
- With the help of Cordova, you can access the native device functionalities such as camera, geolocation, and SMS.

Platforms available for Cordova App

- Android
- Ios
- Windows
- Blackberry
- Firefox os
- Symbian
- Tizen
- Web OS
- Ubuntu

Cordova Plugins



It provides a JavaScript Interface to native components. Some components can be used to utilize the native OS features, which are as follows:

1. Geolocation
2. Accelerometer
3. Camera
4. Media
5. Contacts

First of all make ENVIRONMENT SETUP for android studio & create AVD:

install jdk1.8.0 from

"<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>"

SEt variable nameS STEP BY STEP:

(a)GO TO FOLLOWING PATH :

FIRST OPEN CONTROL PANEL

(b) then go to Control Panel\All Control Panel Items\System &

click on **Advance system setup**

after that click on Environment Variables

then click on New and add variable name & variable value:

(c)variable name:JAVA_HOME

variable value:

C:\Program Files (x86)\Java\jdk1.8.0_40

(1)Android studio Configuration ([click here to procedure](#))

(2)Sdk Manager([click here to see procedure](#))

(3)AVD Manger([click here to see procedure](#))

**(4)to Test AVD run a very basic
hello world Programs in Android Studio**

([click here to see procedure](#))

**Now you are ready to Proceed for cordova---Phoneygap
Technology...**

Step by Step Installation Of Cordova :

Installation of phoneygap system Cordova:

-----step 1-----

(1)install node from <http://nodejs.org>

to test : node --version

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\OM>cd\

C:\>node --version
v0.12.2

C:\>
```

and

Install Git

<http://git-scm.com>.

-----end of step 1-----
-----step 2-----

(2)install cordova step by step :-

(a)open command prompt:

then type following:

npm install -g cordova

(b)after installation test :

cordova --version

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\OM>cd\

C:\>cordova -version
4.3.0

C:\>_
```

-----end of step2 -----
-----setp 3-----

(3)install ant:

(a)Go to <http://ant.apache.org/bindownload.cgi>

(b) & download zip file for Ant & extract zip file into

C:\Program Files\ANT\apache-ant-1.8.4

(c) to test :

ant -version

(please note if you will get error that ant is not external & internal command then do this things rename your folder apache-ant-1.8.4 to ant folder then your path for ant will be=C:\Program Files\ant\bin

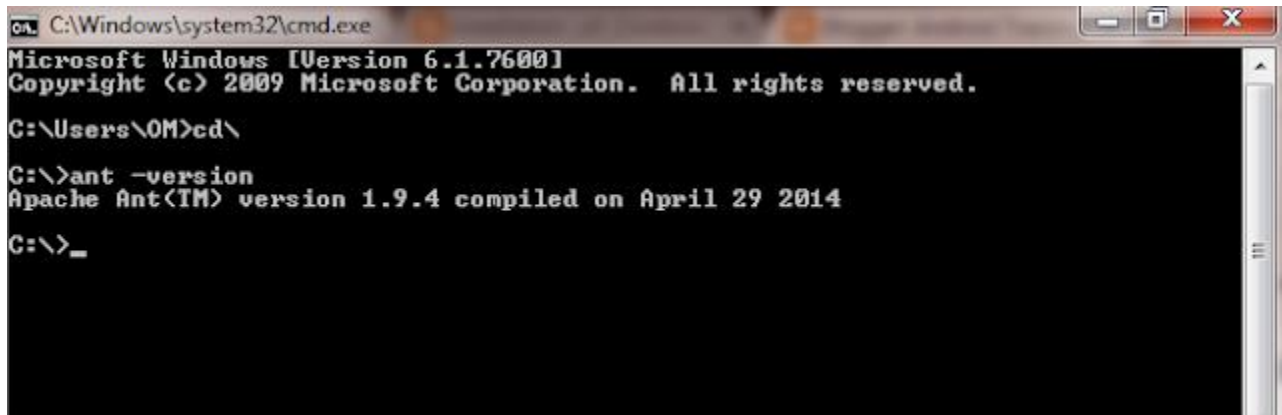
**note : use these details to set path of ant
variable name=ANT_HOME**

variable value=C:\Program Files\ant\bin

**)
and also do not forget to set Environment Variable :**

variable name:PATH

variable value:D:\om\Android development detials\android-sdk-
windows;C:\USERS\OM\AppData\Roaming\npm;C:\Program Files\ant\bin



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\OM>cd\

C:\>ant -version
Apache Ant(TM) version 1.9.4 compiled on April 29 2014

C:\>_
```

-----end of step3-----

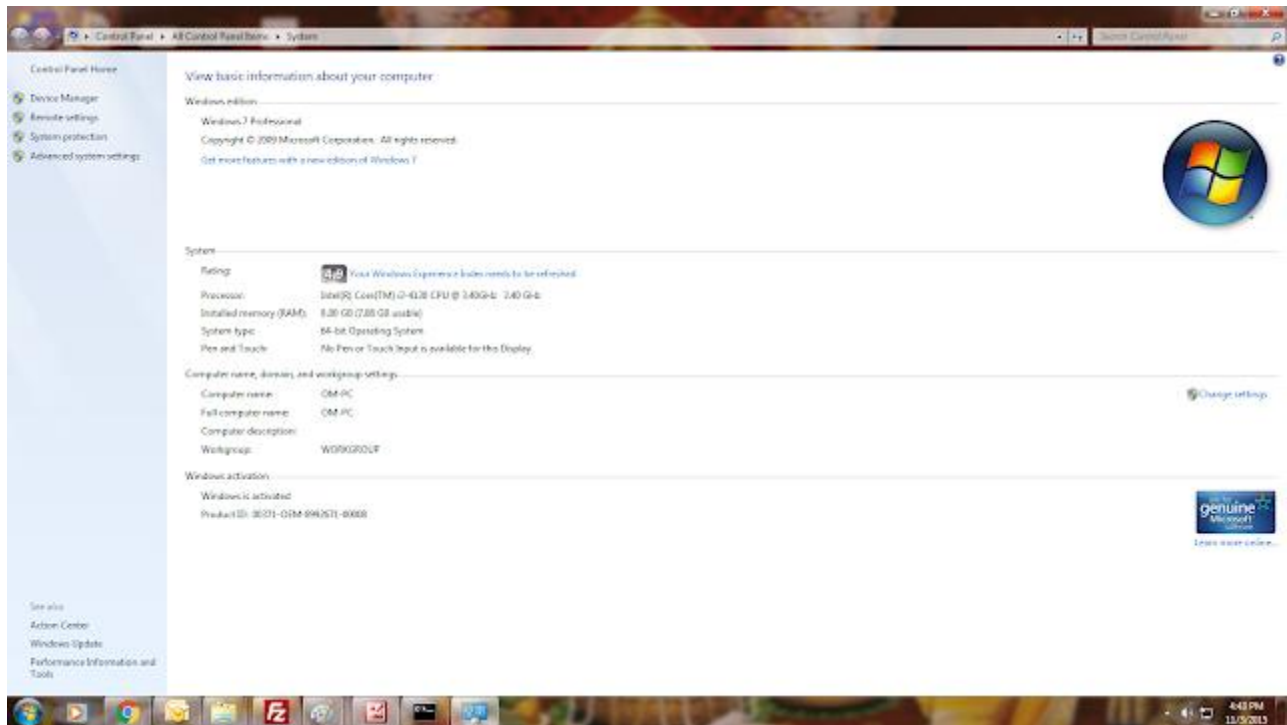
-----SEt variable names step 4-----

SEt variable nameS STEP BY STEP:

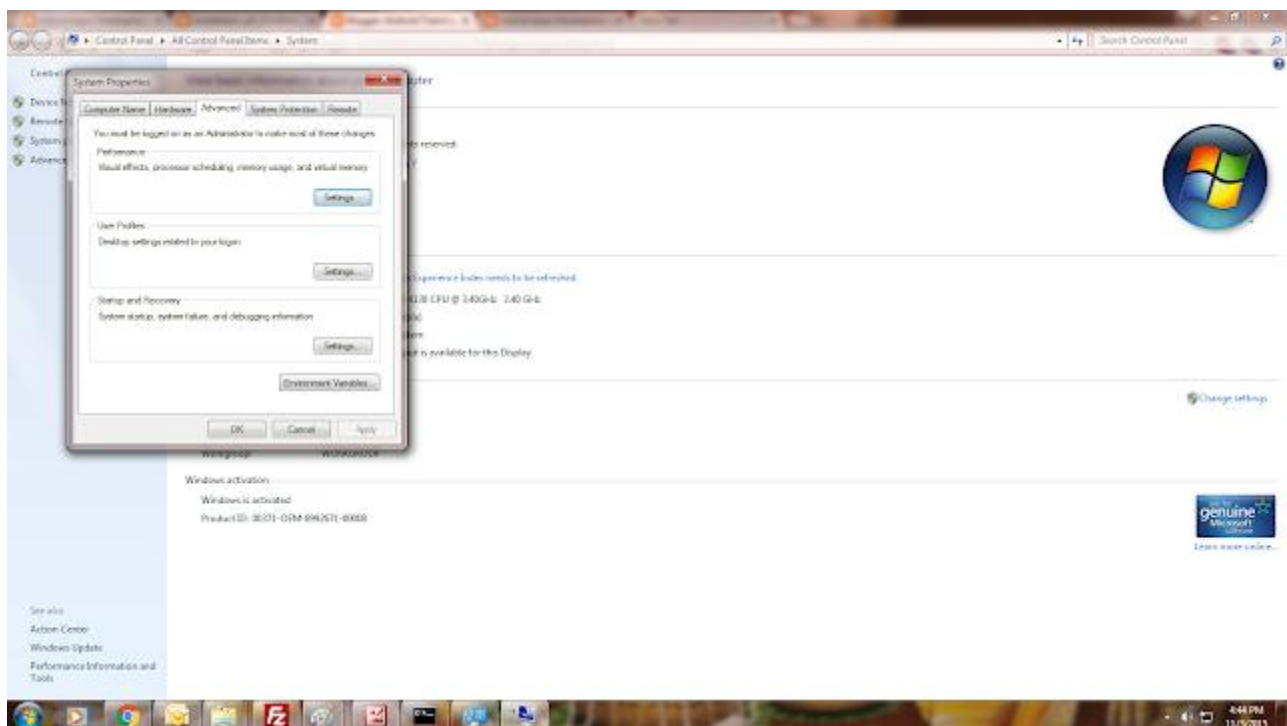
(a)GO TO FOLLOWING PATH :

FIRST OPEN CONTROL PANEL

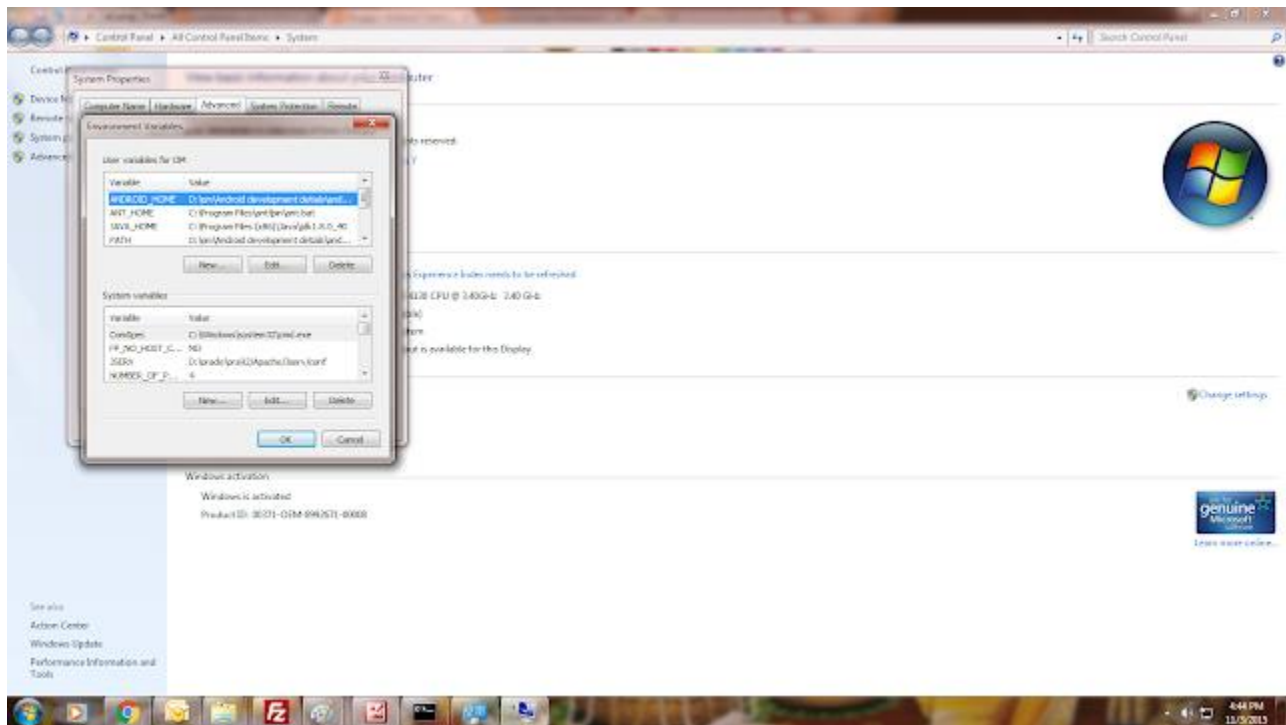
(b) then go to Control Panel\All Control Panel Items\System & click on **Advance system setup**



afte that click on Environment Variables:



then click on New and add variable name & variable value:-



And follow the following guidance to set variable name:

(a) variable name: ANT_HOME

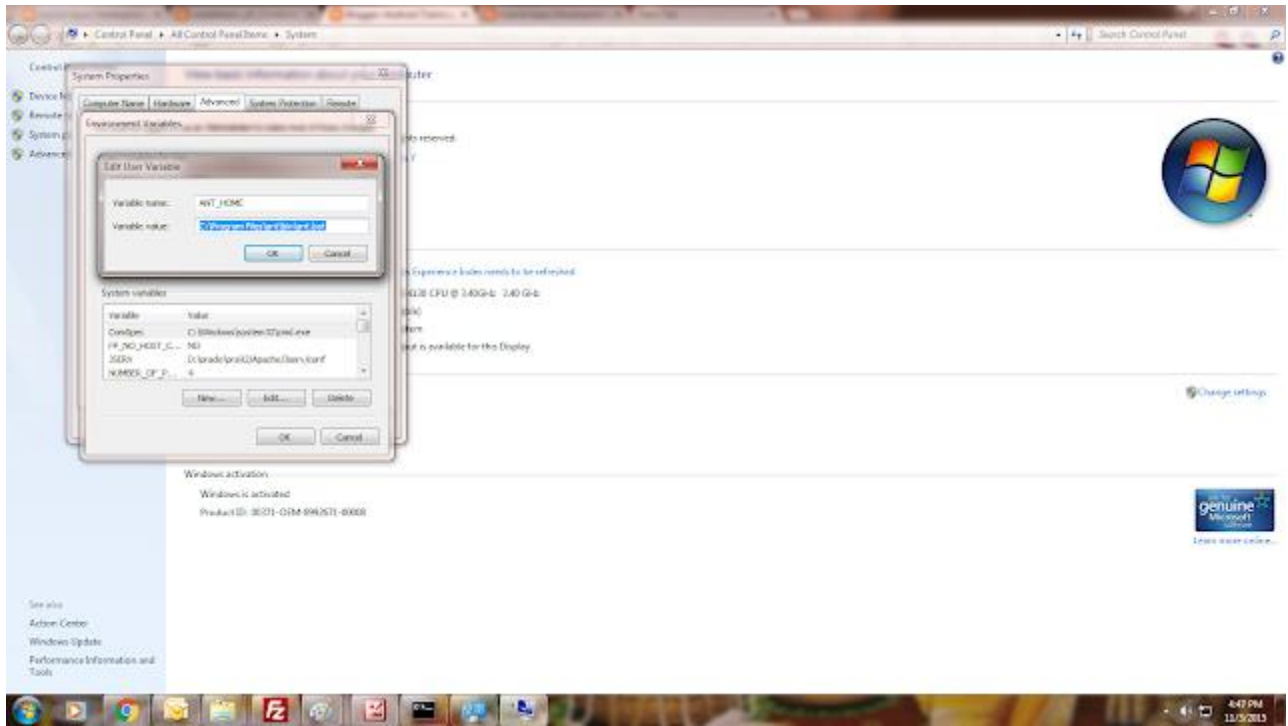
variable value: C:\Program Files\ant\bin\ant.bat

(please note if you will get error that ant is not external & internal command then do this things rename your extracted folder of ant "apache-ant-1.8.4" to ant folder then your path for ant will be=C:\Program Files\ant\bin

**note : use these details to set path of ant
variable name=ANT_HOME**

variable value=C:\Program Files\ant\bin

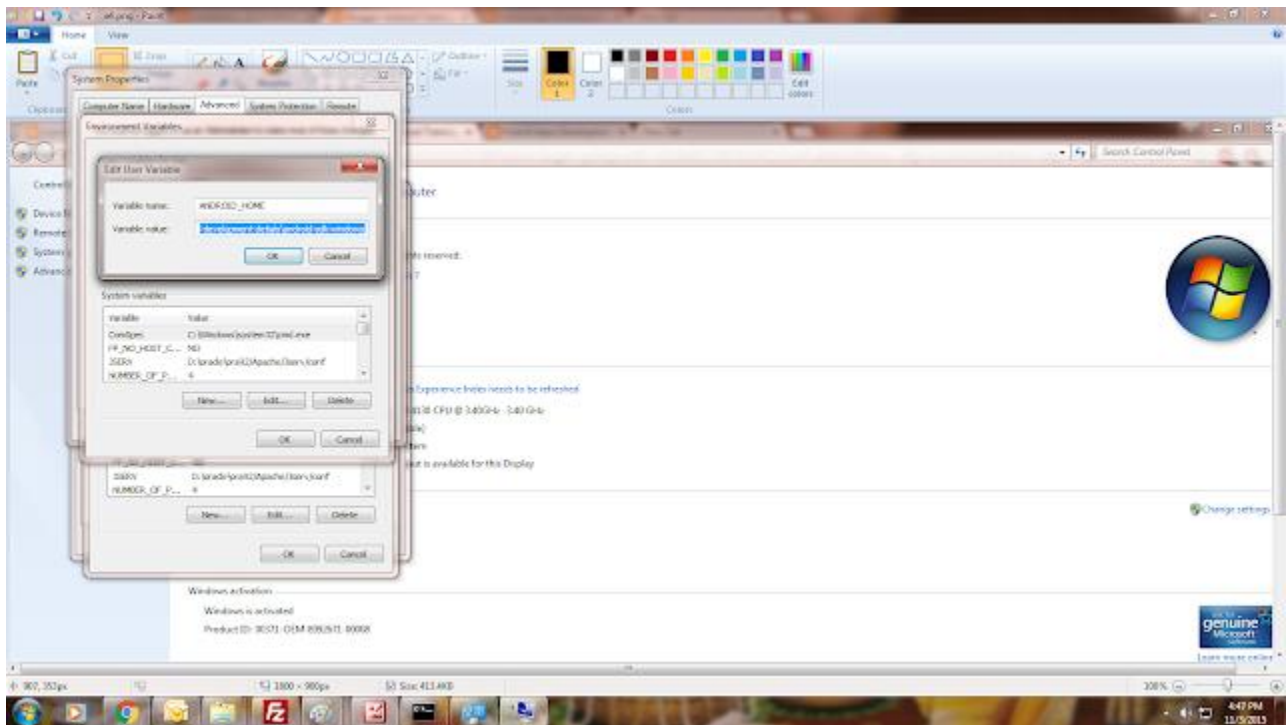
)



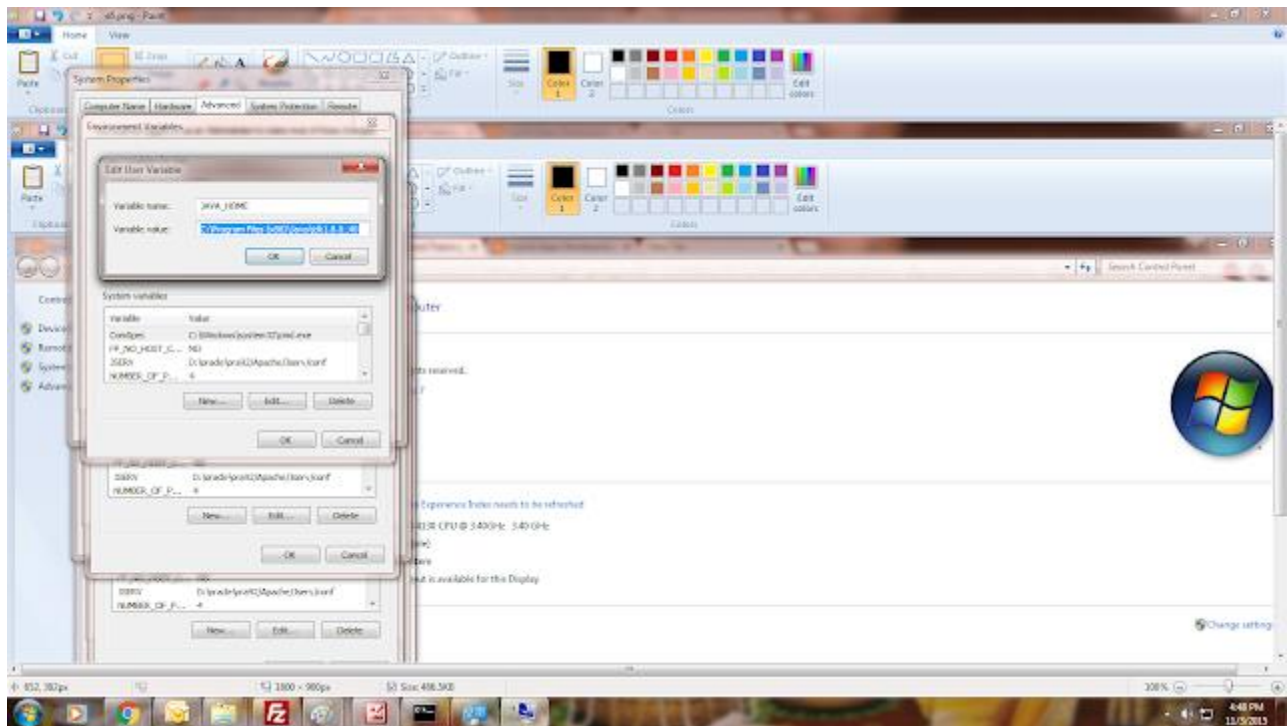
(b)variable name:

ANDROID_HOME

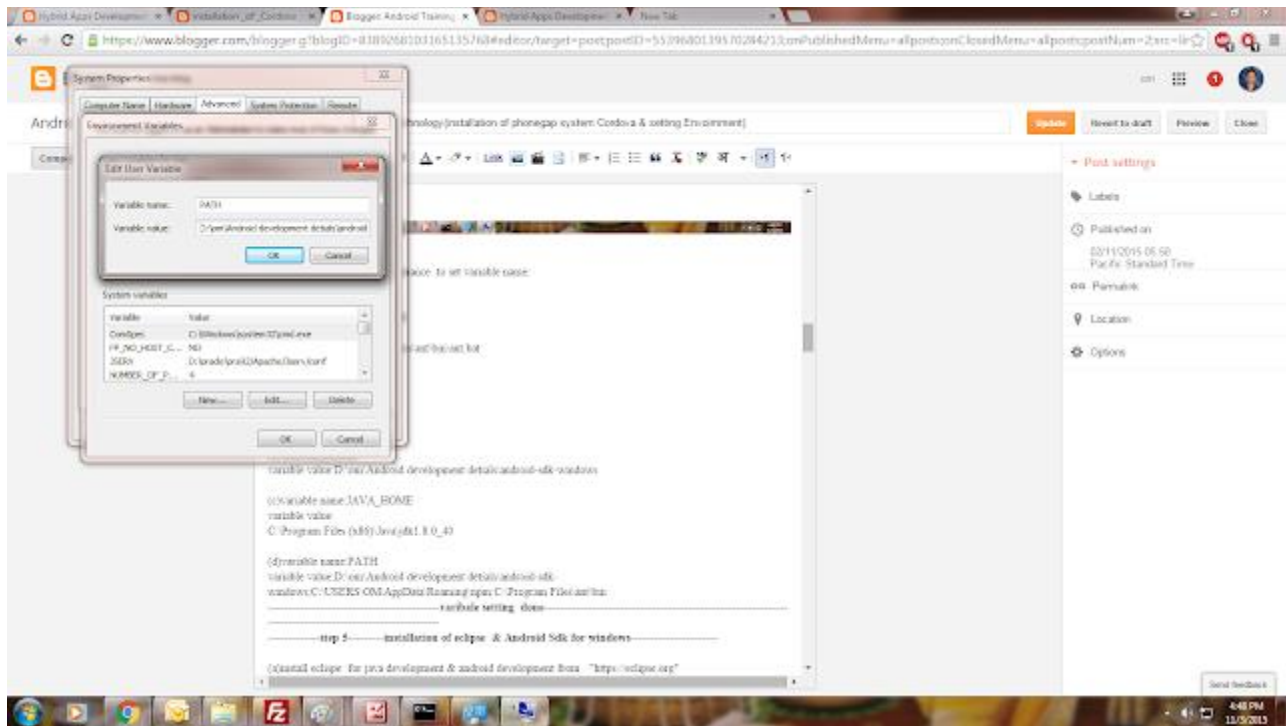
variable value:D:\om\Android development detials\android-sdk-windows



(c)variable name:JAVA_HOME
variable value:
C:\Program Files (x86)\Java\jdk1.8.0_40



(d)variable name:PATH
variable value:D:\om\Android development detials\android-sdk-
windows;C:\USERS\OM\AppData\Roaming\npm;C:\Program Files\ant\bin



-----variable setting done-----

-----step 5-----installation of Android & Android Sdk for windows-----

ENVIRONMENT SETUP for android studio which we have done above :

- (1)Android studio Configuration ([click here to procedure](#))
- (2)Sdk Manager([click here to see procedure](#))
- (3)AVD Manger([click here to see procedure](#))

-----end of android studio & Android sdk installation-----

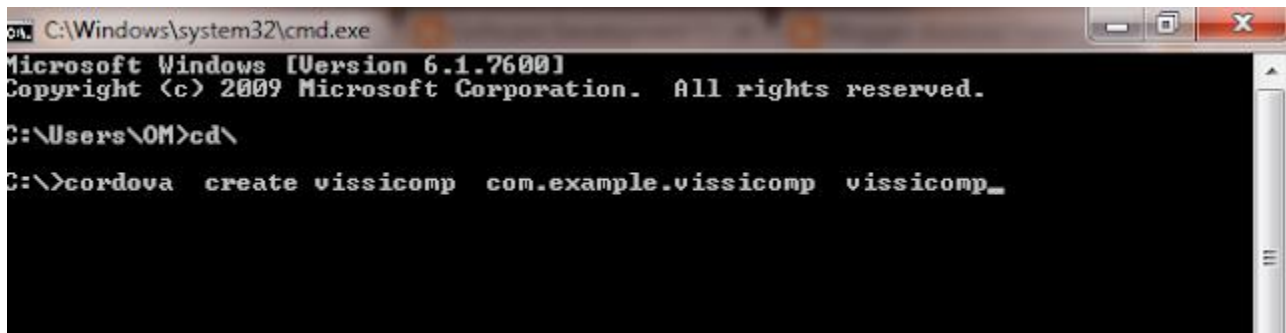
-----step6----Creating my first apps-----using html-css-javascript-----

Creating my first Android apps--using html-css- Javascript using Cordova

open command prompt:

(1) type following command which will create a folder under c:/ drive vissicomp:

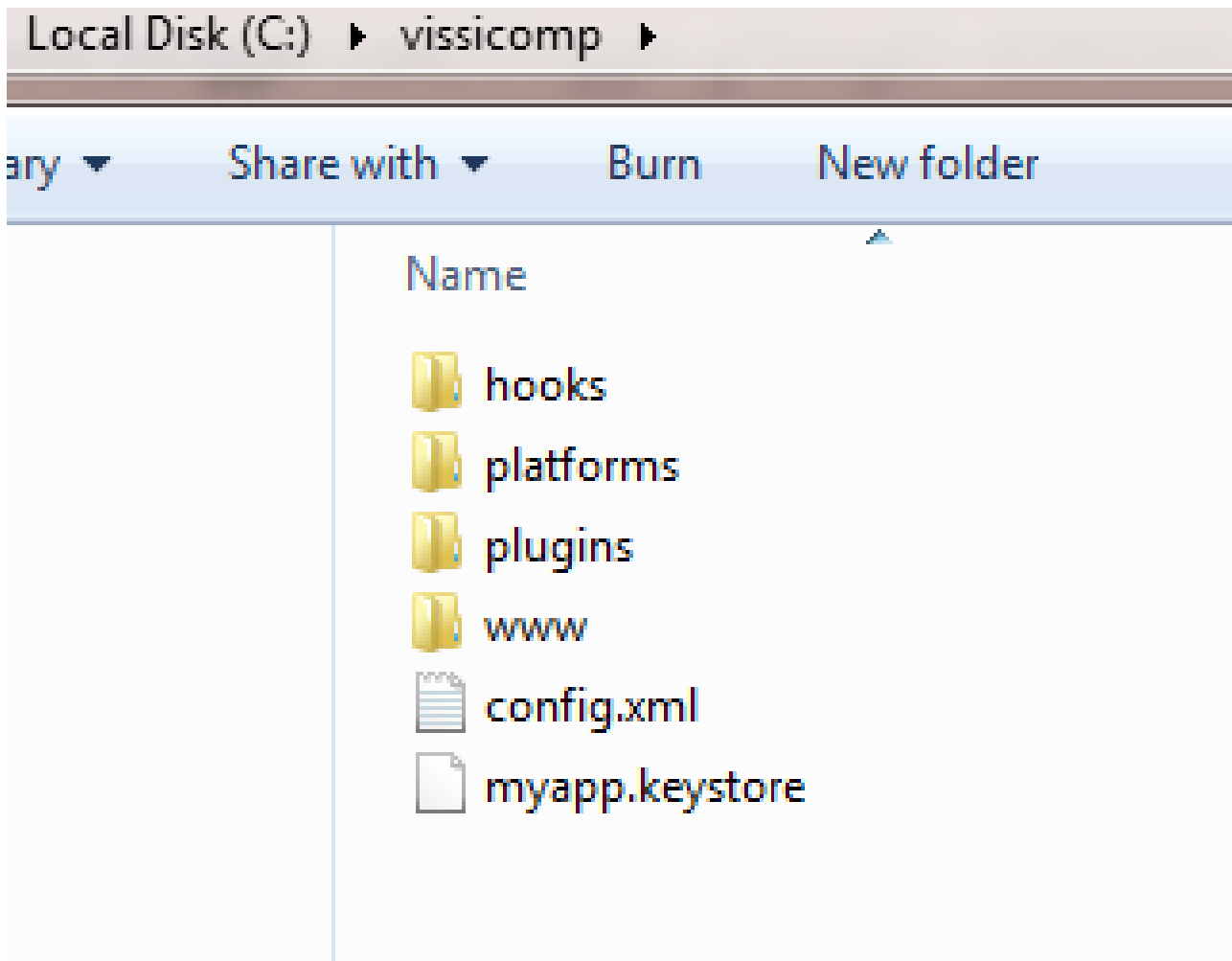
```
cordova create vissicomp com.example.vissicomp vissicomp
```



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\OM>cd\
C:\>cordova create vissicomp com.example.vissicomp vissicomp_
```

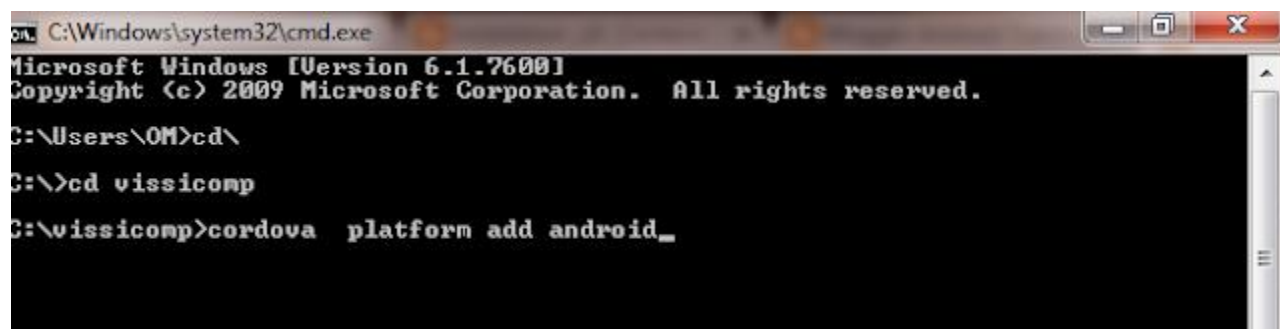
Creating a new cordova project with name "vissicomp" and app id is "com.example.vissicomp" at location "C:"



here there are platforms folder which contains platform details like android ,windows ,IOS in which platform we want to develop apps we have to add that Platform.. and www is a folder where we keep our html,css,javascript code to develop our apps.

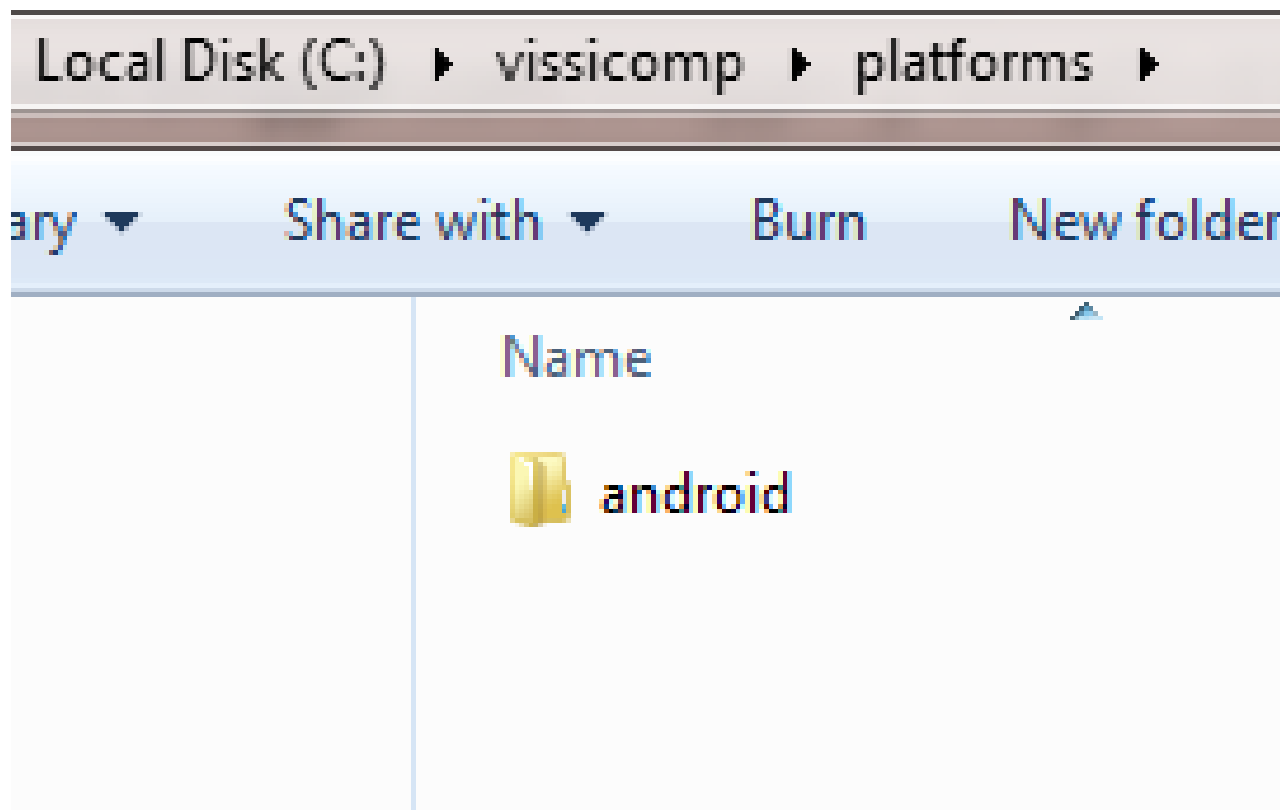
(2) To add platform to cordova type following command to add android platform :

`cordova platform add android`



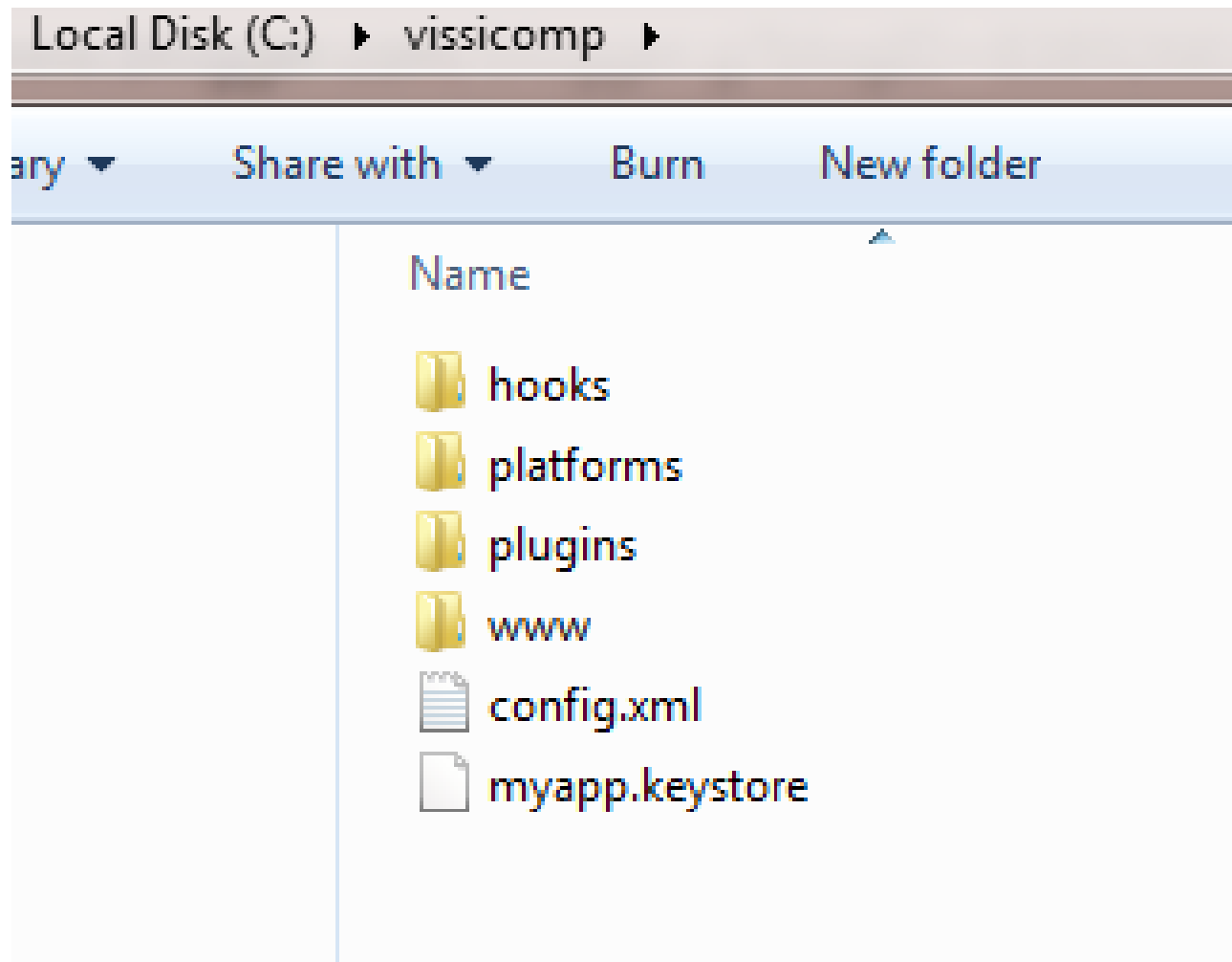
```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\OM>cd\
C:\>cd vissicomp
C:\vissicomp>cordova platform add android_
```

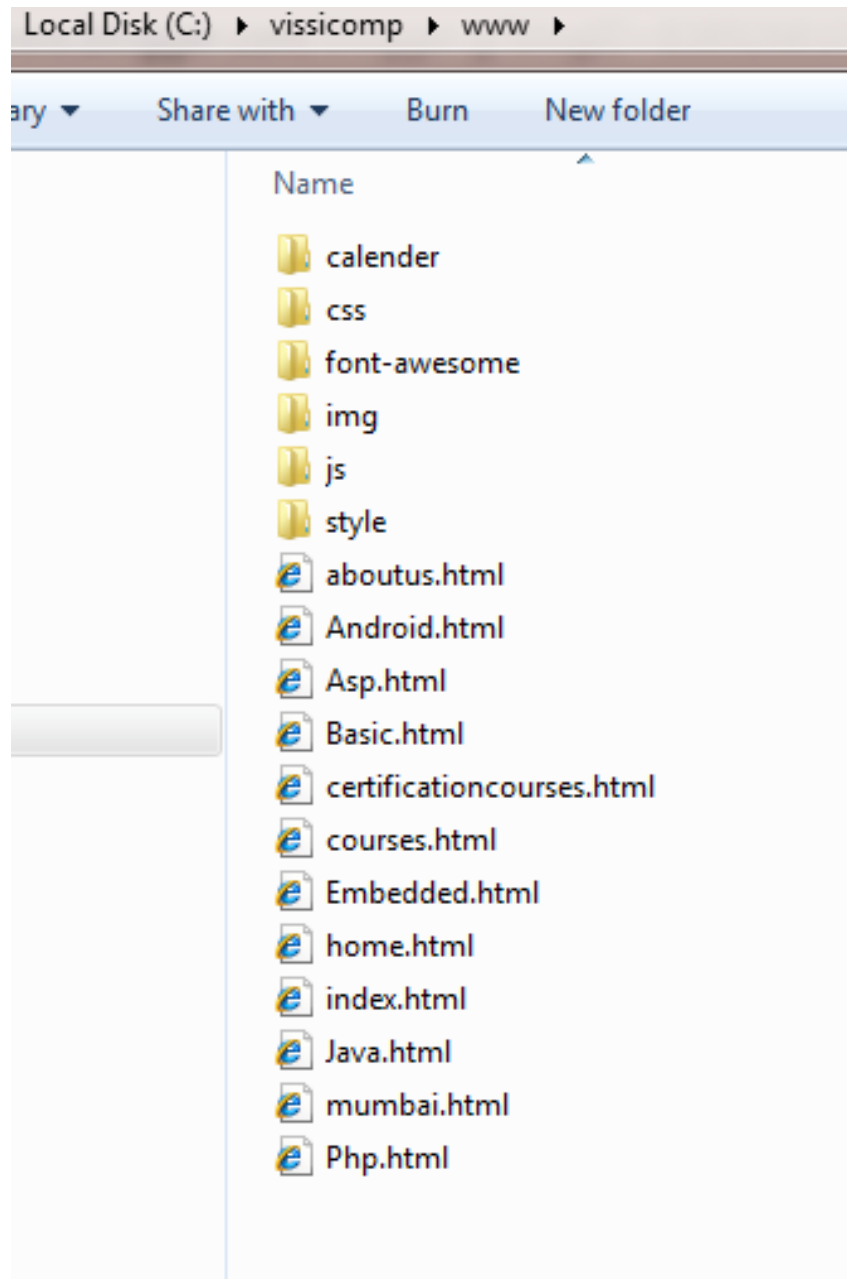


Then under vissicomp/platfforms folder you will see a folder android

(a) then open your folder **vissicomp** :



(i) go to path **C:\vissicomp\www\index.html**



(ii) then open index.html file :

& replace all code by following code of html:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<style>
div#test{ border:#000 1px solid; padding:10px 40px 40px 40px; }
</style>
```

```

<script language='JavaScript' type='text/JavaScript'>

var tenth = "";

function ninth() {
  if (document.all) {
    (tenth);
    alert("Right Click Disable");
    return false;
  }
}

function twelfth(e) {
  if (document.layers || (document.getElementById && !document.all)) {
    if (e.which == 2 || e.which == 3) {
      (tenth);
      return false;
    }
  }
}

if (document.layers) {
  document.captureEvents(Event.MOUSEDOWN);
  document.onmousedown = twelfth;
} else {
  document.onmouseup = twelfth;
  document.oncontextmenu = ninth;
}
document.oncontextmenu = new Function('alert("Right Click Disable"); return false')
</script>

```

```

<script>
var pos = 0, test, test_status, question, choice, choices, chA, chB, chC, correct = 0;
var questions = [
  [ "What is 10 + 4?", "12", "14", "16", "B" ],
  [ "What is 20 - 9?", "7", "13", "11", "C" ],
  [ "What is 7 x 3?", "21", "24", "25", "A" ],
  [ "What is 8 / 2?", "10", "2", "4", "C" ],
  [ "What is 4 / 2?", "10", "2", "4", "B" ],
  [ "What is full form of html?", "htypertext markup language", "2", "4", "A" ]
];
function _(x){
  return document.getElementById(x);
}
function renderQuestion(){
  test = _("test");
  if(pos >= questions.length){
    test.innerHTML = "<h2>You got "+correct+" of "+questions.length+" questions correct</h2>";
    _("test_status").innerHTML = "Test Completed";
    pos = 0;
    correct = 0;
    return false;
  }
}

```



```

}
_("test_status").innerHTML = "Question "+(pos+1)+" of "+questions.length;
question = questions[pos][0];
chA = questions[pos][1];
chB = questions[pos][2];
chC = questions[pos][3];
test.innerHTML = "<h3>"+question+"</h3>";
test.innerHTML += "<input type='radio' name='choices' value='A'> "+chA+"<br>";
test.innerHTML += "<input type='radio' name='choices' value='B'> "+chB+"<br>";
test.innerHTML += "<input type='radio' name='choices' value='C'> "+chC+"<br><br>";
test.innerHTML += "<button onclick='checkAnswer()'>Submit Answer</button>";
}
function checkAnswer(){
choices = document.getElementsByName("choices");
for(var i=0; i<choices.length; i++){
if(choices[i].checked){
choice = choices[i].value;
}
}
if(choice == questions[pos][4]){
correct++;
}
pos++;
renderQuestion();
}
window.addEventListener("load", renderQuestion, false);

</script>

</head>

<body>
<h2 id="test_status"></h2>
<div id="test"></div>
</body>
</html>

```

& save it

Now go for next step:

(3)then build your first app type following command:

cordova build

(note : and sometimes it may throw exit code 1 problem during cordova build if you are using latest version of cordova so use following command to downgrade your cordova version:

npm uninstall -g cordova && npm install -g cordova@4.3.0

)

(note : sometimes you may get error "Error occurred during initialization of VM
Could not reserve enough space for 2097152KB object heap"

then solution for it is:

Right click on computer ->properties->Advance system setting->then clike on Environment variables ->then click on new and enter following details:

variable name=_JAVA_OPTIONS

varibale value=-Xmx1024M

and can red more about from build environment:

https://docs.gradle.org/2.14.1/userguide/build_environment.html

some times you may also get error

Upgrading Gradle For Cordova Mobile Apps In Windows:-

<https://androidstraining.blogspot.com/2019/09/upgrading-gradle-for-cordova-mobile.html>

(4)then run your apps by typing following apps:

cordova emulate android

-----end of step 6-----

----- sep 7-----

finally HOW TO RELEASE YOUR APK FILE :use following command :

cordova build android --release

find your apk file from android-build folder:

Local Disk (C:) > vissicomp > platforms > android > ant-build >

Library ▾ Share with ▾ Burn New folder

Name	Date modified	Type	Size
classes	9/8/2015 7:03 PM	File folder	
dexedLibs	9/8/2015 7:03 PM	File folder	
res	9/8/2015 7:03 PM	File folder	
rsLibs	9/2/2015 7:55 PM	File folder	
rsObj	9/2/2015 7:55 PM	File folder	
AndroidManifest.cordova.xml	9/2/2015 7:55 PM	XML File	2 KB
AndroidManifest.xml.d	9/2/2015 7:55 PM	D File	1 KB
build.prop	9/2/2015 7:55 PM	PROP File	1 KB
classes.dex	9/2/2015 7:55 PM	DEX File	400 KB
classes.dex.d	9/2/2015 7:55 PM	D File	1 KB
MainActivity.ap_	9/2/2015 7:55 PM	AP_ File	1,234 KB
MainActivity.ap_.d	9/2/2015 7:55 PM	D File	10 KB
MainActivity-debug.apk	9/2/2015 7:55 PM	APK File	1,393 KB
MainActivity-debug-unaligned.apk	9/2/2015 7:55 PM	APK File	1,393 KB
MainActivity-debug-unaligned.apk.d	9/2/2015 7:55 PM	D File	1 KB
MainActivity-release.apk	8/28/2015 2:55 PM	APK File	1,393 KB
MainActivity-release-unaligned.apk	8/28/2015 2:55 PM	APK File	1,393 KB
MainActivity-release-unsigned.apk	8/28/2015 2:54 PM	APK File	1,385 KB
MainActivity-release-unsigned.apk.d	8/28/2015 2:54 PM	D File	1 KB
proguard.txt	9/2/2015 7:55 PM	Text Document	1 KB
R.txt	9/2/2015 7:55 PM	Text Document	1 KB

install this apk file on you Android phone & see output of this sample apps:

Question 1 of 6

What is $10 + 4$?

- 12
- 14
- 16

Submit Answer