# MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING

**Practical No: - 01**

## Aim: Design and develop location based messaging app UI CODE:

*<?*xml version="1.0" encoding="utf-8"*?>*

<RelativeLayoutxmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:tools="<http://schemas.android.com/tools>" android:layout\_width="match\_parent"

android:layout\_height="match\_parent" android:paddingBottom="@dimen/activity\_vertical\_margin" android:paddingLeft="@dimen/activity\_horizontal\_margin" android:paddingRight="@dimen/activity\_horizontal\_margin" android:paddingTop="@dimen/activity\_vertical\_margin" tools:context="com.example.admin.locationmsg.MainActivity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:textAppearance="?android:attr/textAppearanceLarge" android:text="Large Text"

android:id="@+id/textView" android:layout\_alignParentLeft="true" android:layout\_alignParentStart="true" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:textAppearance="?android:attr/textAppearanceLarge" android:text="Large Text"

android:id="@+id/textView3" android:layout\_below="@+id/textView" android:layout\_alignParentLeft="true" android:layout\_alignParentStart="true" android:layout\_marginTop="96dp" />

<Button

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android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Get Longitude and Latitude" android:id="@+id/button" android:layout\_centerVertical="true" android:layout\_alignParentLeft="true" android:layout\_alignParentStart="true" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:textAppearance="?android:attr/textAppearanceLarge" android:text="Large Text"

android:id="@+id/textView2" android:layout\_alignParentBottom="true" android:layout\_alignRight="@+id/button" android:layout\_alignEnd="@+id/button" />

</RelativeLayout>

## SOURCE CODE:

**package** com.example.admin.locationmsg;

**import** android.Manifest;

**import** android.content.Context;

**import** android.content.pm.PackageManager;

**import** android.location.Location;

**import** android.location.LocationListener; **import** android.location.LocationManager; **import** android.net.Uri;

**import** android.support.v4.app.ActivityCompat; **import** android.support.v7.app.AppCompatActivity; **import** android.os.Bundle;

**import** android.util.Log; **import** android.view.View; **import** android.widget.Button;

**import** android.widget.TextView;

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**import** com.google.android.gms.appindexing.Action;

**import** com.google.android.gms.appindexing.AppIndex;

**import** com.google.android.gms.common.api.GoogleApiClient;

**public class** MainActivity **extends** AppCompatActivity **implements**

LocationListener {

TextView**t1**, **t2**, **t3**; Button **b1**;

**protected** LocationManager **locationManager**; **protected** LocationListener **locationListener**; **double lat**, **longg**;

**private** GoogleApiClient **client**; @Override

**protected void** onCreate(Bundle savedInstanceState) { **super**.onCreate(savedInstanceState); setContentView(R.layout.***activity\_main***);

**t1** = (TextView) findViewById(R.id.***textView***); **t2** = (TextView) findViewById(R.id.***textView3***); **t3** = (TextView) findViewById(R.id.***textView2***);

**b1** = (Button) findViewById(R.id.***button***);

**b1**.setOnClickListener(**new** View.OnClickListener() { @Override

**public void** onClick(View view) { **t1**.setText(**"Latitude = "** + **lat**); **t2**.setText(**"Longitude = "** + **longg**);

**if** (**lat**<38 &&**lat**>36 &&**longg**<122 &&**longg**>118) {

**t3**.setText(**"In-Side The Area"**);

} **else** {

**t3**.setText(**"Out-Side The Area"**); }

}

});

**locationManager**= (LocationManager)

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getSystemService(Context.***LOCATION\_SERVICE***);

**if** (ActivityCompat.*checkSelfPermission*(**this**, Manifest.permission.***ACCESS\_FINE\_LOCATION***) != PackageManager.***PERMISSION\_GRANTED***&&ActivityCompat.*checkSelfPermi ssion*(**this**, Manifest.permission.***ACCESS\_COARSE\_LOCATION***) != PackageManager.***PERMISSION\_GRANTED***) {

**return**; } **locationManager**.requestLocationUpdates(LocationManager.***GPS\_PROVIDER***, 0, 0, **this**);

**client** = **new** GoogleApiClient.Builder(**this**).addApi(AppIndex.***API***).build();}

@Override

**public void** onLocationChanged(Location location) {

**lat**= location.getLatitude(); **longg**= location.getLongitude(); Log.*d*(**""** + **lat**, **""** + **lat**);

Log.*d*(**""** + **longg**, **""** + **longg**);

**if** (**lat**== 38 &&**longg**== 118) {

**t3**.setText(**"You Are at Perfect Place !!!!"**);

} **else** {

**t3**.setText(**"You are not at Perfect Place !!!!"**); }

}

@Override

**public void** onProviderDisabled(String provider) { Log.*d*(**"Latitude"**, **"disable"**); }

@Override

**public void** onProviderEnabled(String provider) { Log.*d*(**"Latitude"**, **"enable"**); }

@Override

**public void** onStatusChanged(String provider, **int**status, Bundle extras) { Log.*d*(**"Latitude"**, **"status"**); }

@Override

**public void** onStart() {

**super**.onStart();

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**client**.connect();

Action viewAction = Action.*newAction*( Action.***TYPE\_VIEW***, *// TODO: choose an action type.* **"Main Page"**, *// TODO: Define a title for the content shown.* Uri.*parse*(**"**[**http://host/path**](http://host/path)**"**),

## Uri.*parse*("android-app://com.example.admin.locationmsg/http/host/path")

);

AppIndex.***AppIndexApi***.start(**client**, viewAction); }

@Override

**public void** onStop() {

**super**.onStop();

Action viewAction = Action.*newAction*( Action.***TYPE\_VIEW***, *// TODO: choose an action type.*

**"Main Page"**, *// TODO: Define a title for the content shown. //*

Uri.*parse*(**"**[**http://host/path**](http://host/path)**"**),

## Uri.*parse*("android-app://com.example.admin.locationmsg/http/host/path")

);

AppIndex.***AppIndexApi***.end(**client**, viewAction); client.disconnect();}}

## PERMISSION:

*<?*xml version="1.0" encoding="utf-8"*?>*

<manifest xmlns:android="<http://schemas.android.com/apk/res/android>" package="com.example.admin.locationmsg">

<uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION" />

<uses-permission android:name="android.permission.INTERNET" />

<application android:allowBackup="true" android:icon="@mipmap/ic\_launcher" android:label="@string/app\_name" android:supportsRtl="true" android:theme="@style/AppTheme">

<activity android:name=".MainActivity">

<intent-filter>

<action android:name="android.intent.action.MAIN" />

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<category android:name="android.intent.category.LAUNCHER" />

</intent-filter>

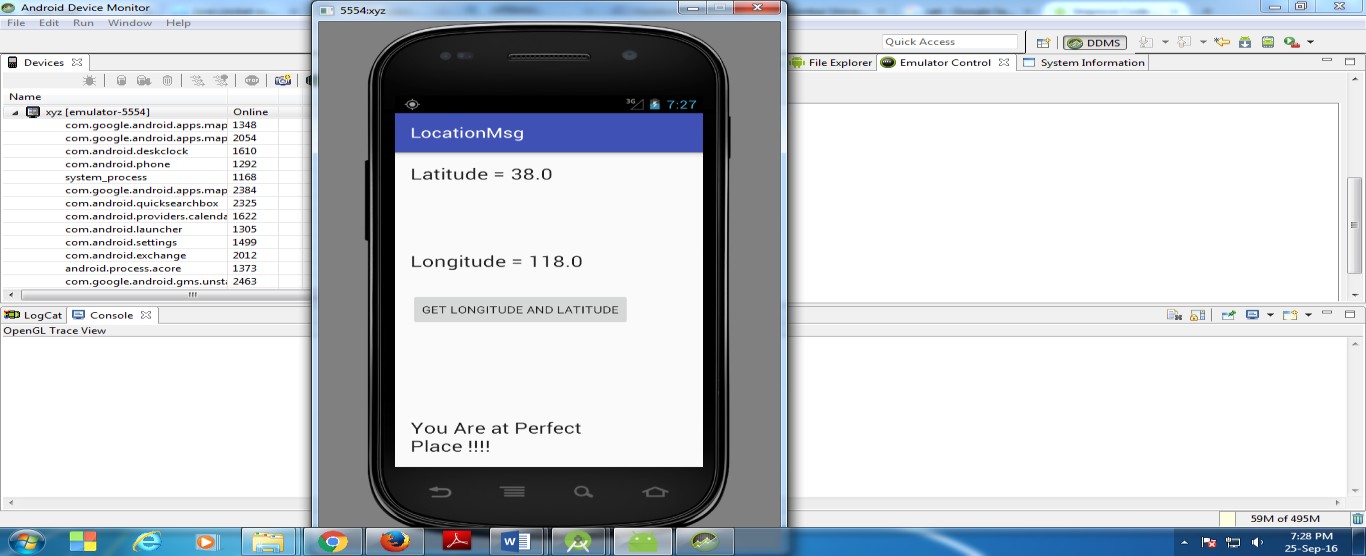
</activity>

<meta-data android:name="com.google.android.gms.version" android:value="@integer/google\_play\_services\_version" />

</application>

</manifest>

## OUTPUT:



**MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING**

**Practical No: - 02**

**Aim: - Design and develop chat messaging app which is a location-based.**

**UI CODE:**

*<?*xml version="1.0" encoding="utf-8"*?>*

<RelativeLayoutxmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:tools="<http://schemas.android.com/tools>" android:layout\_width="match\_parent"

android:layout\_height="match\_parent" android:paddingBottom="@dimen/activity\_vertical\_margin" android:paddingLeft="@dimen/activity\_horizontal\_margin" android:paddingRight="@dimen/activity\_horizontal\_margin" android:paddingTop="@dimen/activity\_vertical\_margin" tools:context="com.example.admin.gpstrace.MainActivity">

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:textAppearance="?android:attr/textAppearanceLarge" android:text="Large Text"

android:id="@+id/textView" android:layout\_alignParentLeft="true" android:layout\_alignParentStart="true" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:textAppearance="?android:attr/textAppearanceLarge" android:text="Large Text"

android:id="@+id/textView3" android:layout\_below="@+id/textView" android:layout\_alignParentLeft="true" android:layout\_alignParentStart="true" android:layout\_marginTop="96dp" />

# MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING

<Button android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Get Longitude and Latitude" android:id="@+id/button" android:layout\_centerVertical="true" android:layout\_alignParentLeft="true" android:layout\_alignParentStart="true" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:textAppearance="?android:attr/textAppearanceLarge" android:text="Large Text"

android:id="@+id/textView2" android:layout\_alignParentBottom="true" android:layout\_alignRight="@+id/button" android:layout\_alignEnd="@+id/button" />

</RelativeLayout>

## SOURCE CODE:

**package** com.example.admin.gpstrace;

**import** android.Manifest;

**import** android.content.Context;

**import** android.content.pm.PackageManager;

**import** android.location.Location;

**import** android.location.LocationListener; **import** android.location.LocationManager; **import** android.support.v4.app.ActivityCompat;

**import** android.support.v7.app.AppCompatActivity;

**import** android.os.Bundle; **import** android.util.Log; **import** android.view.View; **import** android.widget.Button;

**import** android.widget.TextView;

**public class** MainActivity **extends** AppCompatActivity **implements**

# MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING

LocationListener {

TextView**t1**, **t2**, **t3**; Button **b1**;

**protected** LocationManager **locationManager**; **protected** LocationListener **locationListener**; **double** lat, **longg**;

@Override

**protected void** onCreate(Bundle savedInstanceState) { **super**.onCreate(savedInstanceState); setContentView(R.layout.***activity\_main***);

**t1** = (TextView) findViewById(R.id.***textView***); **t2** = (TextView) findViewById(R.id.***textView3***); **t3** = (TextView) findViewById(R.id.***textView2***);

**b1** = (Button) findViewById(R.id.***button***); **b1**.setOnClickListener(**new** View.OnClickListener() { @Override

**public void** onClick(View view) { **t1**.setText(**"Latitude = "** + lat); **t2**.setText(**"Longitude = "**+ **longg**);

**if**(lat<38 &&lat>36 &&**longg**<122 &&**longg**>118)

{ **t3**.setText(**"In-Side The Area"**); }

## else

{ **t3**.setText(**"Out-Side The Area"**); } }

});

**locationManager**= (LocationManager) getSystemService(Context.***LOCATION\_SERVICE***); **if** (ActivityCompat.*checkSelfPermission*(**this**,

Manifest.permission.***ACCESS\_FINE\_LOCATION***) != PackageManager.***PERMISSION\_GRANTED***&&ActivityCompat.*checkSelfPermi ssion*(**this**, Manifest.permission.***ACCESS\_COARSE\_LOCATION***) != PackageManager.***PERMISSION\_GRANTED***) {

*//* ***TODO: Consider calling***

**return**; } **locationManager**.requestLocationUpdates(LocationManager.***GPS\_PROVIDER***, 0, 0, **this**); }

@Override

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**public void** onLocationChanged(Location location) {

*// txtLat = (TextView) findViewById(R.id.textview1);*

lat=location.getLatitude(); **longg**= location.getLongitude(); Log.*d*(**""**+lat,**""**+lat);

Log.*d*(**""**+**longg**,**""**+**longg**);

**if**(lat<38 &&lat>36 &&**longg**<122 &&**longg**>118)

{ **t3**.setText(**"In-Side The Area"**); }

## else

{ **t3**.setText(**"Out-Side The Area"**); }

}

@Override

**public void** onProviderDisabled(String provider) { Log.*d*(**"Latitude"**,**"disable"**); }

@Override

**public void** onProviderEnabled(String provider) { Log.*d*(**"Latitude"**,**"enable"**); }

@Override

**public void** onStatusChanged(String provider, **int**status, Bundle extras) { Log.*d*(**"Latitude"**,**"status"**); }

}

## PERMISSION:

*<?*xml version="1.0" encoding="utf-8"*?>*

<manifest xmlns:android="<http://schemas.android.com/apk/res/android>" package="com.example.admin.gpstrace">

<application android:allowBackup="true" android:icon="@mipmap/ic\_launcher" android:label="@string/app\_name" android:supportsRtl="true" android:theme="@style/AppTheme">

<activity android:name=".MainActivity">

<intent-filter>

<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER" />

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</intent-filter>

</activity>

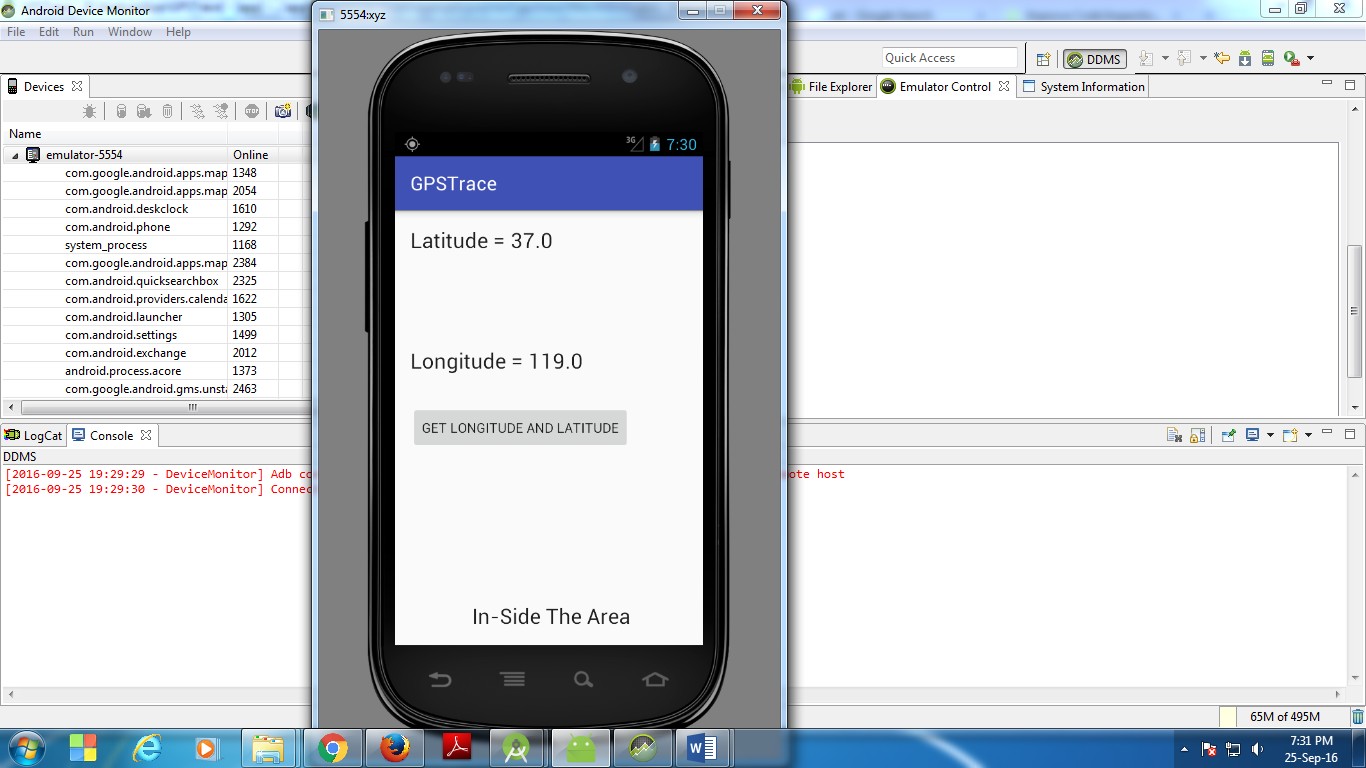
</application>

<uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION" />

<uses-permission android:name="android.permission.INTERNET" />

</manifest>

## OUTPUT:



**MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING**

**Practical No: - 07**

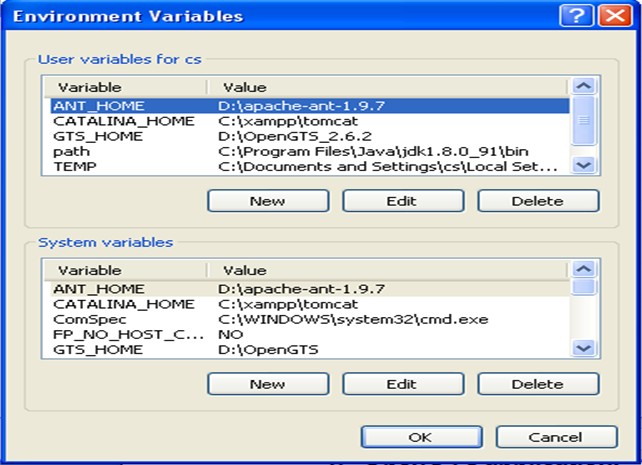
**Aim: - Demonstrate use of OpenGTS (Open Source GPS Tracking System). Settings:-**

**Required Software:-**

1. JDK 1.6
2. XAMPP Server
3. Mysql-java connector
4. OpenGTS application

[**http://www.opengts.org/**](http://www.opengts.org/)

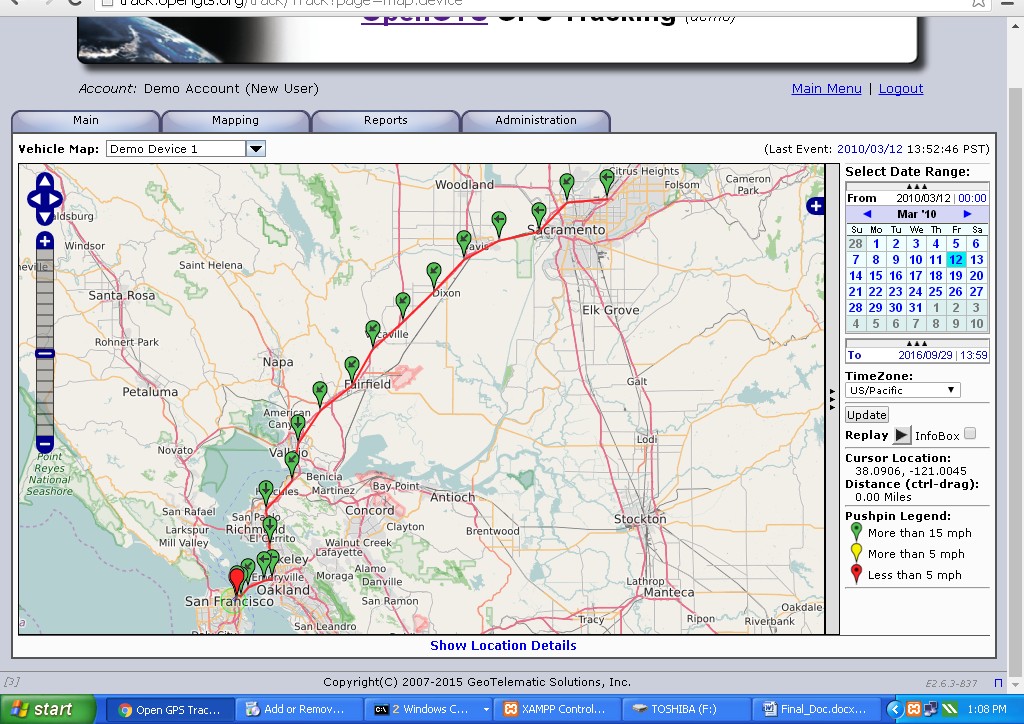
## Set Environment Variables:-



1. Open command Prompt and go to D:\OpenGTS\_2.6.2
2. Type command ant all
3. Type command ant track
4. Type command ant track.deploy
5. Type command initdb.bat –rootUser=root –pass=123456789
6. Type Command admin.bat Account –account:admin –pass:123456 –create
7. Type url 127.0.0.0:8080/track/Track and login with admin and 123456

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**MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING**

**Practical No: - 09**

## Aim: - Develop application demonstrating Human Computer Interaction SOURCE CODE:

import java.awt.\*; import java.awt.event.\*;

public class CloseableSimpleWarning extends Frame implements WindowListener {

static private final int frame\_height = 150; static private final int frame\_width = 250;

public CloseableSimpleWarning() {

//setBackground(Color.red);

//setForeground(Color.black); setTitle("Warning"); setSize(frame\_width, frame\_height); addWindowListener(this); }

public void windowClosing (WindowEvent e)

{ System.exit(0); }

public void windowClosed (WindowEvent e)

{ System.exit(0); }

public void windowIconified (WindowEvent e)

{ System.exit(0); }

public void windowDeiconified (WindowEvent e)

{ System.exit(0); }

public void windowOpened (WindowEvent e)

{ System.exit(0); }

public void windowActivated (WindowEvent e)

{ System.exit(0); }

public void windowDeactivated (WindowEvent e)

{ System.exit(0); }

public static void main(String [] args)

{ CloseableSimpleWarning f = new CloseableSimpleWarning(); f.show(); } }

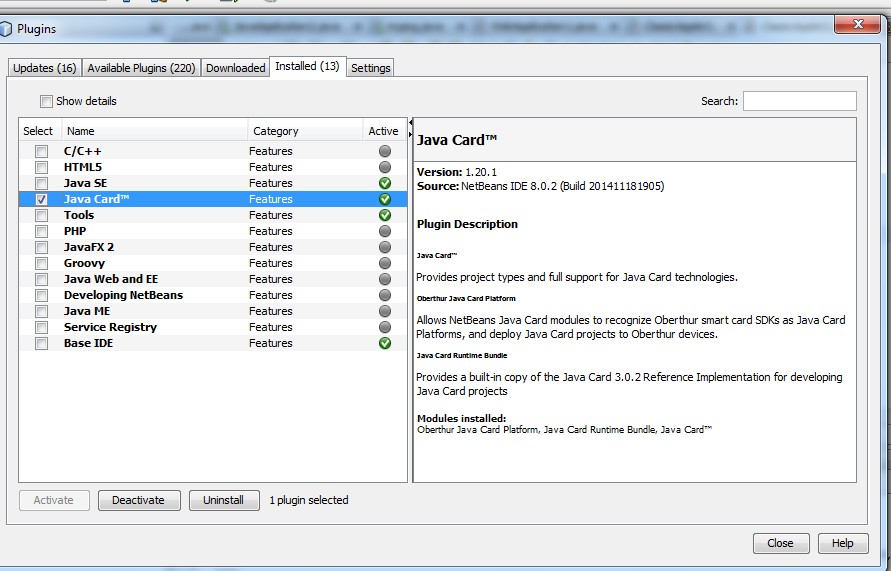
# MSC COMPUTER SCIENCE SEM-III PAPER-I: UBIQUITOUS COMPUTING

**Practical No: - 10**

## Aim: - Write a Java Card applet

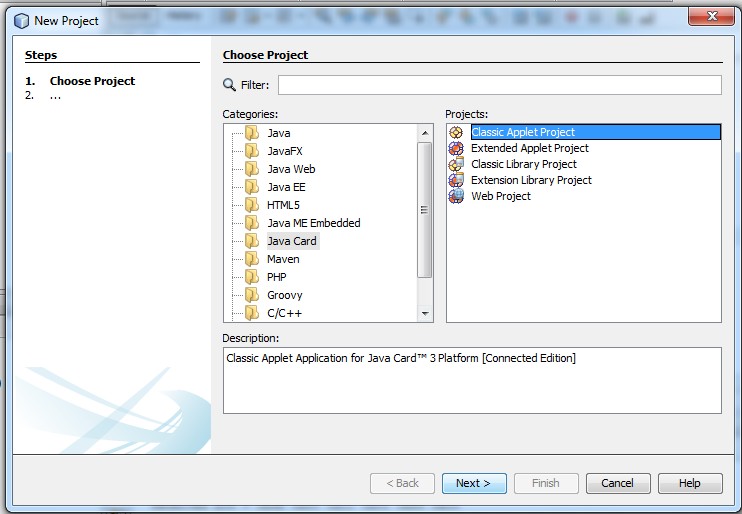
Download Java Card Sdk from [http://www.oracle.com/technetwork/java/embedded/javacard/downloads/jav](http://www.oracle.com/technetwork/java/embedded/javacard/downloads/javacard-sdk-2043229.html) [acard-sdk-2043229.html](http://www.oracle.com/technetwork/java/embedded/javacard/downloads/javacard-sdk-2043229.html)

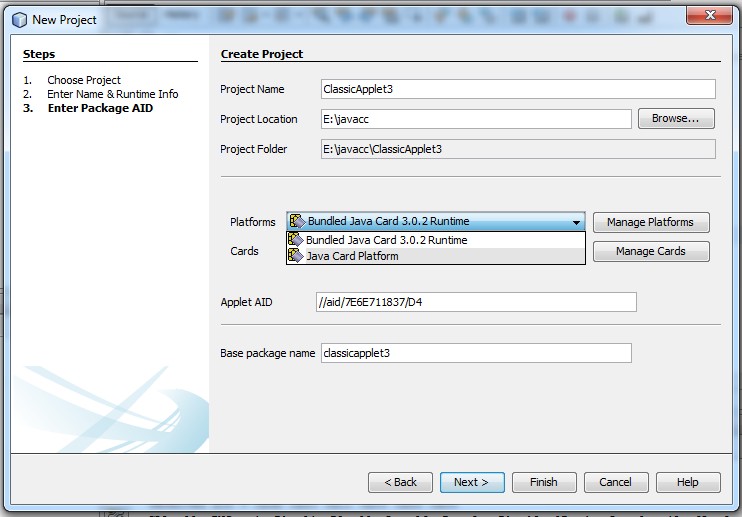
Install in Netbeans as plugin :- Tools -> Plugin



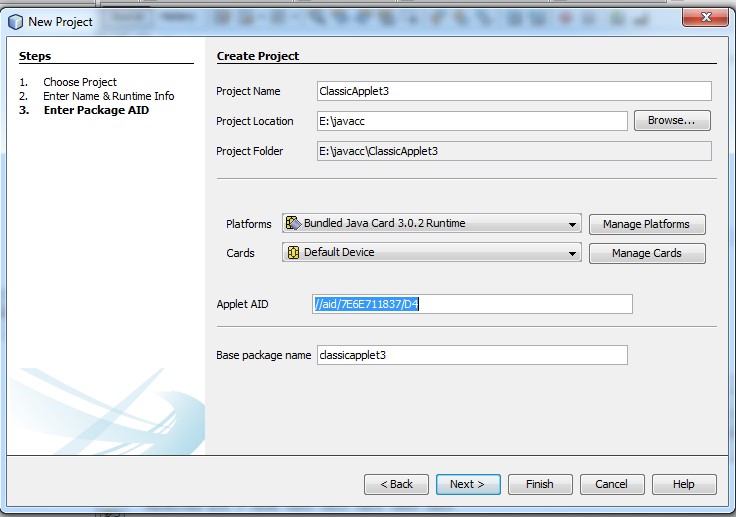
Create an application

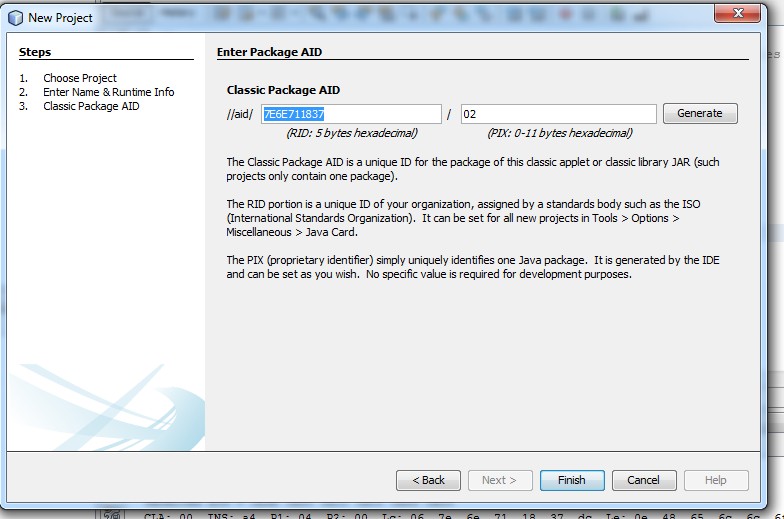
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## SOURCE CODE:

package classicapplet2; import javacard.framework.\*;

public class ClassicApplet2 extends Applet { private byte[] received;

private static final short MAX\_LENGTH = 256; private static final byte[] helloFidesmo =

{(byte)'H',(byte)'e',(byte)'l',(byte)'l',(byte)'o',(byte)' ',(byte)'F',(byte)'i',(byte)'d',(byte)'e',(byte)'s',(byte)'m',(byte)'o',(byte)'!'}; public static void install(byte[] bArray, short bOffset, byte bLength) { new ClassicApplet2();

}

protected ClassicApplet2() {

received = new byte[MAX\_LENGTH]; register();

}

public void process(APDU apdu) {

//Insert your code here

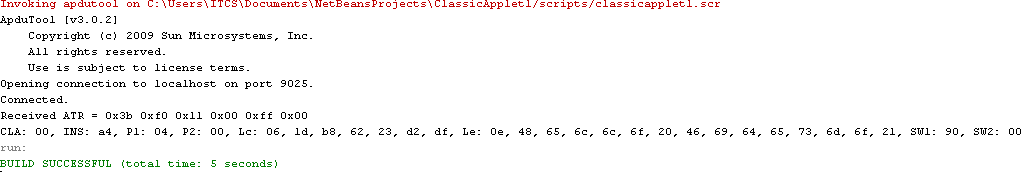
byte buffer[] = apdu.getBuffer();

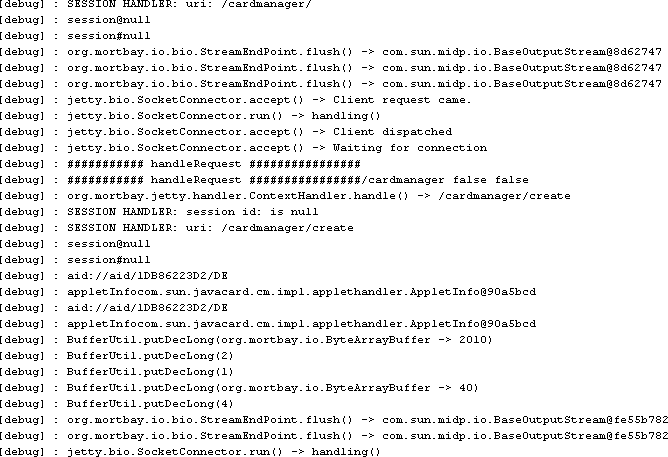
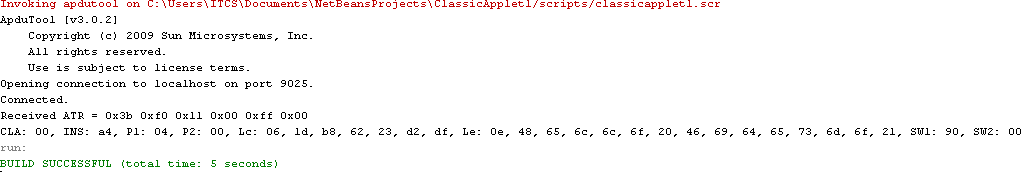
short length = (short) helloFidesmo.length; Util.arrayCopyNonAtomic(helloFidesmo, (short)0, buffer, (short)0, (short)length); apdu.setOutgoingAndSend((short)0, length);

}

}

## OUTPUT:



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