



Vidya Vikas Education Trust's
Universal College of Engineering, Kaman Road,
Vasai-401212 Accredited by B+ Grade by NAAC
Experiment No.08: Location Manager (GPS)

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Aim: Develop a native application that uses GPS location information.

Theory: A Location Manager App is a software application that helps users manage and track their location-based activities, such as navigation, travel planning, geocaching, and more. The app uses location data from the user's device (such as GPS or Wi-Fi signals) to provide real-time information about their location and surroundings.

The core functionality of a Location Manager App typically includes the following features:

1. **Maps and Navigation:** The app provides users with access to maps and navigation tools, allowing them to plan and navigate routes to their desired destinations.
2. **Location Tracking:** The app tracks the user's location in real-time, providing them with information about their current location and nearby points of interest.
3. **Geocaching:** The app allows users to search for and find hidden geocaches or other hidden items based on GPS coordinates.
4. **Travel Planning:** The app can help users plan trips and activities by providing information about nearby attractions, restaurants, and accommodations.
5. **Safety and Emergency Services:** The app can provide users with information about emergency services and safety tips based on their location.

Other features that may be included in a Location Manager App include social sharing and collaboration tools, weather forecasts, and personalized recommendations based on the user's location and preferences.

Overall, a Location Manager App is designed to provide users with a comprehensive set of tools and features for managing and tracking their location-based activities, with the goal of making their travel and exploration experiences more enjoyable, efficient, and safe.

Program:
MainActivity.java

```
package com.yayandroid.locationmanager.sample;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
```



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```
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;

import com.yayandroid.locationmanager.sample.activity.SampleActivity;
import com.yayandroid.locationmanager.sample.fragment.SampleFragmentActivity;
import com.yayandroid.locationmanager.sample.service.SampleServiceActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(@Nullable Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void inActivityClick(View view) {
        startActivity(new Intent(this, SampleActivity.class));
    }

    public void inFragmentClick(View view) {
        startActivity(new Intent(this, SampleFragmentActivity.class));
    }

    public void inServiceClick(View view) {
        startActivity(new Intent(this, SampleServiceActivity.class));
    }
}
```

SamplePresenter.java

```
package com.yayandroid.locationmanager.sample;

import android.location.Location;
import android.text.TextUtils;

import com.yayandroid.locationmanager.constants.FailType;
import com.yayandroid.locationmanager.constants.ProcessType;
```



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```
public class SamplePresenter {  
  
    private SampleView sampleView;  
  
    public SamplePresenter(SampleView view) {  
        this.sampleView = view;  
    }  
  
    public void destroy() {  
        sampleView = null;  
    }  
  
    public void onLocationChanged(Location location) {  
        sampleView.dismissProgress();  
        setText(location);  
    }  
  
    public void onLocationFailed(@FailType int failType) {  
        sampleView.dismissProgress();  
  
        switch (failType) {  
            case FailType.TIMEOUT: {  
                sampleView.setText("Couldn't get location, and timeout!");  
                break;  
            }  
            case FailType.PERMISSION_DENIED: {  
                sampleView.setText("Couldn't get location, because user didn't give permission!");  
                break;  
            }  
            case FailType.NETWORK_NOT_AVAILABLE: {  
                sampleView.setText("Couldn't get location, because network is not accessible!");  
                break;  
            }  
            case FailType.GOOGLE_PLAY_SERVICES_NOT_AVAILABLE: {
```



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```
sampleView.setText("Couldn't get location, because Google Play Services not available!");
    break;
}
case FailType.GOOGLE_PLAY_SERVICES_SETTINGS_DIALOG: {
    sampleView.setText("Couldn't display settingsApi dialog!");
    break;
}
case FailType.GOOGLE_PLAY_SERVICES_SETTINGS_DENIED: {
    sampleView.setText("Couldn't get location, because user didn't activate providers via
settingsApi!");
    break;
}
case FailType.VIEW_DETACHED: {
    sampleView.setText("Couldn't get location, because in the process view was
detached!");
    break;
}
case FailType.VIEW_NOT_REQUIRED_TYPE: {
    sampleView.setText("Couldn't get location, "
        + "because view wasn't sufficient enough to fulfill given configuration!");
    break;
}
case FailType.UNKNOWN: {
    sampleView.setText("Ops! Something went wrong!");
    break;
}
}
}

public void onProcessTypeChanged(@ProcessType int newProcess) {
    switch (newProcess) {
        case ProcessType.GETTING_LOCATION_FROM_GOOGLE_PLAY_SERVICES: {
            sampleView.updateProgress("Getting Location from Google Play Services...");
            break;
        }
        case ProcessType.GETTING_LOCATION_FROM_GPS_PROVIDER: {
```



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```
sampleView.updateProgress("Getting Location from GPS...");
    break;
}
case ProcessType.GETTING_LOCATION_FROM_NETWORK_PROVIDER: {
    sampleView.updateProgress("Getting Location from Network...");
    break;
}
case ProcessType.ASKING_PERMISSIONS:
case ProcessType.GETTING_LOCATION_FROM_CUSTOM_PROVIDER:
    // Ignored
    break;
}
}

private void setText(Location location) {
    String appendValue = location.getLatitude() + ", " + location.getLongitude() + "\n";
    String newValue;
    CharSequence current = sampleView.getText();

    if (!TextUtils.isEmpty(current)) {
        newValue = current + appendValue;
    } else {
        newValue = appendValue;
    }

    sampleView.setText(newValue);
}

public interface SampleView {

    String getText();

    void setText(String text);
}
```



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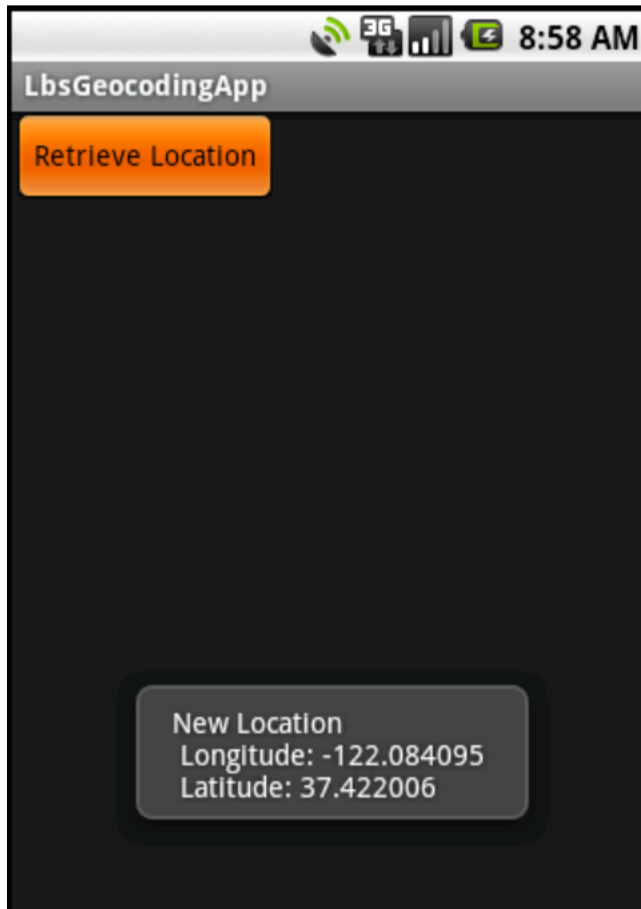
```
void updateProgress(String text);
```

```
void dismissProgress();
```

```
}
```

```
}
```

Output:





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GitHub Link: <https://github.com/jayparekh1290/Mobile-Computing-Lab/tree/main/GPS/LocationManager-master>

Conclusion: The experiment was about Location Manager and the use of Location to connect the app which is successfully implemented and verified.