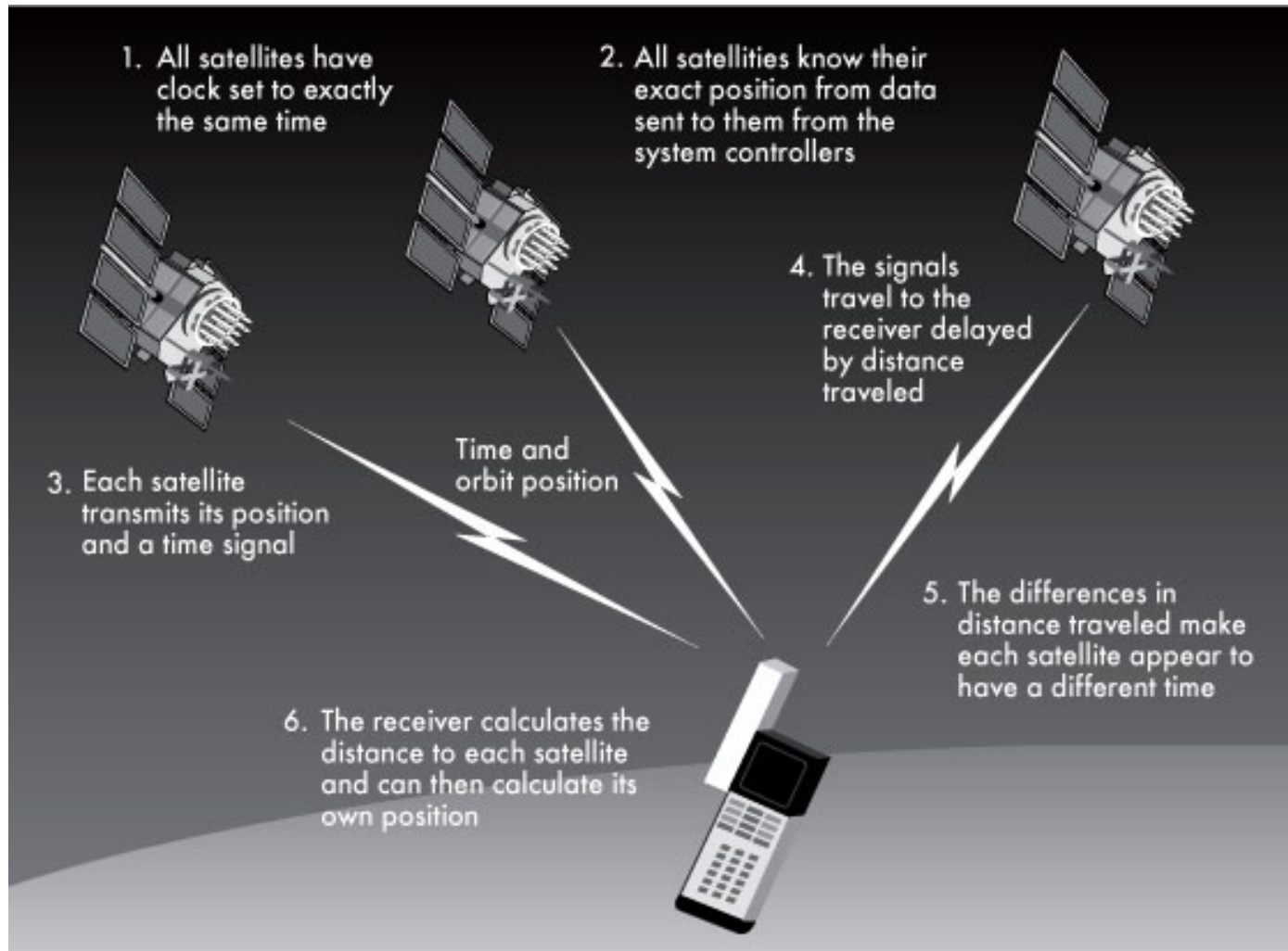


# GPS Sensor in Android Java

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# How does GPS Work?



# Steps to set up GPS Sensor



1. Add permissions to AndroidManifest.xml to allow use of GPS Sensor
2. Define LocationManager and LocationListener in the onCreate() function.
3. Define the Inner Class that acts as the Listener. The code to read and utilize GPS Data goes inside this class.

# Modify the AndroidManifest.xml to allow usage of GPS Sensor

```
10  
11     <uses-permission  
12         android:name = "android.permission.ACCESS_FINE_LOCATION"  
13         />  
14
```

This code goes between the  
<uses-sdk /> and the  
<application /> tags

# In onCreate() – setup the LocationManager and LocationListener

```
26
27 // Use the Location Manager to obtain GPS locations
28 LocationManager locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);
29 LocationListener locListener = new MyLocationListener();
30 locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 0, 0, locListener);
31
32 } // end method onCreate()
33
```

In onCreate():

1. Create an instance of LocationManager named locationManager and get the getSystemService LOCATION\_SERVICE
2. Create an instance of MyLocationListener named locListener
3. Set locationManager to request updates from the GPS\_PROVIDER using the locListener object as the listener.

# Define the inner class MyLocationListener

```
40  
41 public class MyLocationListener implements LocationListener  
42 {  
43
```

Class Definition

```
43  
44 public void onLocationChanged(Location loc) {  
45     // Get Latitude and Longitude  
46     double lat = loc.getLatitude();  
47     double lon = loc.getLongitude();  
48  
49     textLat.setText(String.valueOf(lat));  
50     textLong.setText(String.valueOf(lon));  
51  
52 } // end onLocationChanged
```

4 Required Functions:

onLocationChanged() -> Event called when location is changed. Work of event goes here. (Printing Text, sending Location data to other classes ...

```
53  
54 public void onProviderDisabled(String provider) {  
55     // Not used in this App  
56 }  
57  
58 public void onProviderEnabled(String provider) {  
59     // Not used in this App  
60 }  
61  
62 public void onStatusChanged(String provider, int status, Bundle extras) {  
63     // Not used in this App  
64 }  
65  
66 } // end Class MyLocationListener  
67
```

3 Other Functions:  
Not used in this example (But required to define)

# Available GPS Data

- `getAltitude()` : double - Location
- `getLatitude()` : double - Location
- `getLongitude()` : double - Location
- `bearingTo(Location dest)` : float - Location
- `describeContents()` : int - Location
- `distanceTo(Location dest)` : float - Location
- `getAccuracy()` : float - Location
- `getBearing()` : float - Location
- `getElapsedRealtimeNanos()` : long - Location
- `getSpeed()` : float - Location
- `getTime()` : long - Location