1. **How bitmaps take up a lot of memory especially for rich images like photographs?**

ANS:

The camera on the Galaxy Nexus takes photos up to 2592x1936 pixels (5 megapixels). If the bitmap configuration used is ARGB\_8888, then loading this image into memory takes about 19MB of memory (2592\*1936\*4 bytes), immediately exhausting the per-app limit on some devices.

1. **What is the name of the class and decoding method for creating a**[**Bitmap**](http://developer.android.com/reference/android/graphics/Bitmap.html)**from various sources? To avoid  java.lang.OutOfMemory  exceptions what should we do?**

ANS

class : BitmapFactory

Decoding methods: decodeByteArray(), decodeFile(),decodeResource(), etc.

We should check the dimensions of a bitmap before decoding it.

1. **What is the technique allows to read the dimensions and type of the image data prior to construction of the bitmap?**

ANS

Setting the inJustDecodeBounds property to true

while decoding avoids memory allocation,

returning null for the bitmap object but

setting outWidth, outHeight and outMimeType.

## What is AsyncTask?

ANS

AsyncTask enables proper and easy use of the UI thread. This class allows to perform background operations and publish results on the UI thread without having to manipulate threads and/or handlers.

public abstract class AsyncTask extends [Object](http://developer.android.com/reference/java/lang/Object.html)

1. **What is the use of LruCache class?**

ANS

The LruCache class is particularly well suited to the task of caching bitmaps, keeping recently referenced objects in a strong referenced LinkedHashMap and evicting the least recently used member before the cache exceeds its designated size.

## 6.What are the factors should be taken into consideration choosing a suitable size for a [LruCache](http://developer.android.com/reference/android/util/LruCache.html)?

ANS

memory intensive,  images and their availability on-screen, screen size and density of the device, dimensions and configuration of the bitmaps and memory, image access.

## 7.What are the conditions when  code recycles the bitmap?

ANS

* The reference count for both mDisplayRefCount and mCacheRefCount is 0.
* The bitmap is not null, and it hasn't been recycled yet.

**8. What is the use of**[**BitmapFactory.Options.inBitmap**](http://developer.android.com/reference/android/graphics/BitmapFactory.Options.html#inBitmap)**field?**

ANS

Decode method take the [Options](http://developer.android.com/reference/android/graphics/BitmapFactory.Options.html) object will attempt to reuse an existing bitmap when loading content. This means that the bitmap's memory is reused, resulting in improved performance, and removing both memory allocation and de-allocation.

# 9. What is FragmentStatePagerAdapter?

ANS

It is a abstract class which is an Implementation of [PagerAdapter](http://developer.android.com/reference/android/support/v4/view/PagerAdapter.html) that uses a [Fragment](http://developer.android.com/reference/android/support/v4/app/Fragment.html) to manage each page. This class also handles saving and restoring of fragment's state.

**10.  What are the types of asynchronous task ?**

ANS

The three types used by an asynchronous task are the following:

1. Params,
2. Progress,.
3. Result

**11. What is the task of LocationManager in an application?**

ANS

Once your application has a [LocationManager](http://developer.android.com/reference/android/location/LocationManager.html), your application is able to do three things:

* Query for the list of all [LocationProvider](http://developer.android.com/reference/android/location/LocationProvider.html)s
* Register/unregister for periodic updates
* Register/unregister for a given [Intent](http://developer.android.com/reference/android/content/Intent.html)

**12. How can I integrate Google Map in my application?**

ANS

To integrate Google Maps into your app, you need to install the Google Play services libraries for your Android SDK.

**13.  How you can obtain user location on Android?**

ANS

Getting user location in Android works by means of callback.

To receive location updates from the [LocationManager](http://developer.android.com/reference/android/location/LocationManager.html)

by calling [requestLocationUpdates()](http://developer.android.com/reference/android/location/LocationManager.html#requestLocationUpdates(java.lang.String, long, float, android.app.PendingIntent)),

passing it a[LocationListener](http://developer.android.com/reference/android/location/LocationListener.html).

**14. Explain the parameters of requestLocationUpdates()?**

ANS

The first parameter in [requestLocationUpdates()](http://developer.android.com/reference/android/location/LocationManager.html#requestLocationUpdates(java.lang.String, long, float, android.app.PendingIntent)) is the type of location provider to use.

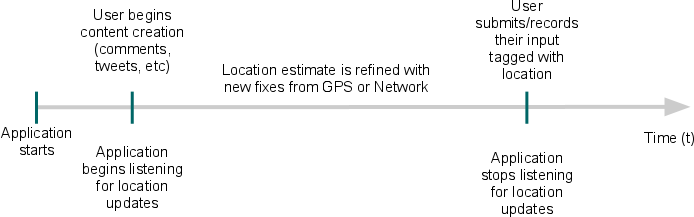
the second is the minimum time interval between notifications

third is the minimum change in distance between notifications

The last parameter is [LocationListener](http://developer.android.com/reference/android/location/LocationListener.html), which receives callbacks for location updates.

**15. Show A timeline representing the window in which the user location is obtained and listening stops when the user consumes the current location.**

ANS



**16.  Name Sensor types supported by the Android platform?**

ANS

|  |  |
| --- | --- |
| Sensor | Type |
| [TYPE\_ACCELEROMETER](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_ACCELEROMETER) | Hardware |
| [TYPE\_AMBIENT\_TEMPERATURE](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_AMBIENT_TEMPERATURE) | Hardware |
| [TYPE\_GRAVITY](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_GRAVITY) | Software or Hardware |
| [TYPE\_GYROSCOPE](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_GYROSCOPE) | Hardware |
| [TYPE\_LIGHT](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_LIGHT) | Hardware |
| [TYPE\_LINEAR\_ACCELERATION](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_LINEAR_ACCELERATION) | Software or Hardware |
| [TYPE\_MAGNETIC\_FIELD](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_MAGNETIC_FIELD) | Hardware |
| [TYPE\_ORIENTATION](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_ORIENTATION) | Software |
| [TYPE\_PRESSURE](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_PRESSURE) | Hardware |
| [TYPE\_PROXIMITY](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_PROXIMITY) | Hardware |
| [TYPE\_RELATIVE\_HUMIDITY](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_RELATIVE_HUMIDITY) | Hardware |
| [TYPE\_ROTATION\_VECTOR](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_ROTATION_VECTOR) | Software or Hardware |
| [TYPE\_TEMPERATURE](http://developer.android.com/reference/android/hardware/Sensor.html#TYPE_TEMPERATURE) | Hardware |

# 17.What is SensorEventListener?

ANS

# public interface SensorEventListener Used for receiving notifications from the SensorManager when sensor values have changed.

**18.What are the class and interface for sensor framework?**

ANS

[SensorManager](http://developer.android.com/reference/android/hardware/SensorManager.html)

[Sensor](http://developer.android.com/reference/android/hardware/Sensor.html)

[SensorEvent](http://developer.android.com/reference/android/hardware/SensorEvent.html)

[SensorEventListener](http://developer.android.com/reference/android/hardware/SensorEventListener.html)

**19. How to identify the sensors that are on a device ?**

ANS

First need to get a reference to the sensor service and to do this,create an instance of the [SensorManager](http://developer.android.com/reference/android/hardware/SensorManager.html) class by calling the [getSystemService()](http://developer.android.com/reference/android/content/Context.html#getSystemService(java.lang.String)) method and passing in the[SENSOR\_SERVICE](http://developer.android.com/reference/android/content/Context.html#SENSOR_SERVICE) argument.

# 20. How does SensorManager work?

ANS

public abstract class SensorManager extends [Object](http://developer.android.com/reference/java/lang/Object.html)

# SensorManager lets access the device's [sensors](http://developer.android.com/reference/android/hardware/Sensor.html),get an instance of this class by calling [Context.getSystemService()](http://developer.android.com/reference/android/content/Context.html#getSystemService(java.lang.String)) with the argument [SENSOR\_SERVICE](http://developer.android.com/reference/android/content/Context.html#SENSOR_SERVICE).