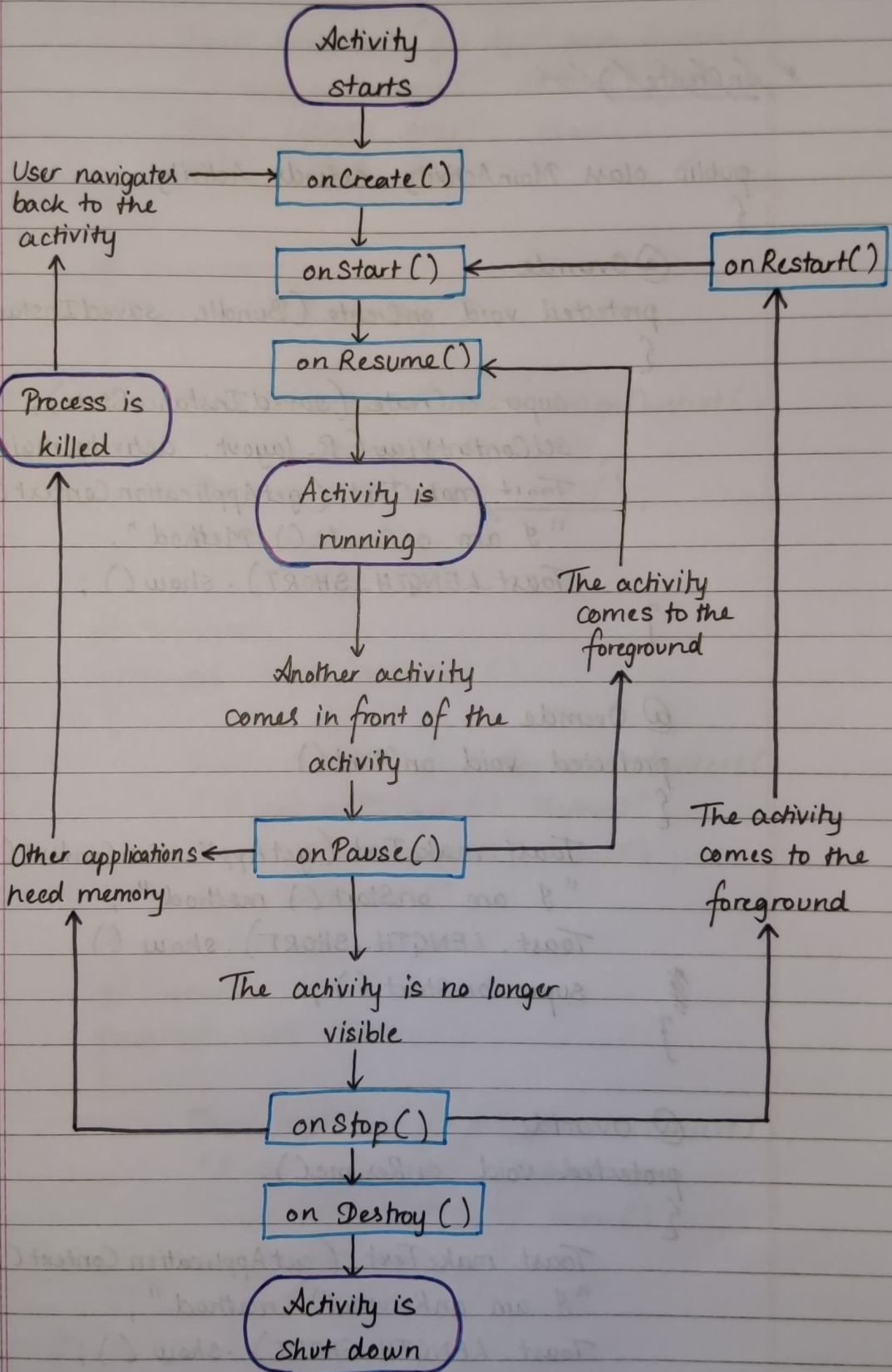## Q3. Activity Life Cycle

- Involves the steps an app goes through from start to finish
- Each app runs it's own process

- Each activity of an app is run in the apps process

- Processes are started and stopped as needed to run the ~~the~~ ^an apps ~~application~~ components

- Processes may be killed to reclaim needed resources

- Killed apps may be restored to their last state when requested by user

- Management of life cycle is done automatically by the system ~~&~~ via the activity stack

- The activity class has the following method callbacks to help you manage the app →

  → on Create ( )
  → on Start ( )
  → on Resume ( )
  → on Pause ( )
  → on Stop ( )
  → on Restart ( )
  → on Destroy ( )

ACTIVITY LIFE CYCLE →

```
                        ┌──────────────┐
                        │   Activity   │
                        │    starts    │
                        └──────┬───────┘
                               ↓
User navigates ─────────→ ┌──────────────┐
back to the              │  onCreate()  │
activity                 └──────┬───────┘
   ↑                            ↓
   │          ┌──────────────┐  ←──────────  ┌──────────────┐
   │          │  onStart()   │               │  onRestart() │
   │          └──────┬───────┘               └──────────────┘
   │                 ↓                              ↑
   │          ┌──────────────┐  ←────────┐
   │          │  onResume()  │           │
   │          └──────┬───────┘           │
┌──────────┐         ↓                   │
│Process is│  ┌──────────────┐           │
│  killed  │  │ Activity is  │           │
└──────────┘  │   running    │           │
   ↑          └──────┬───────┘           │
   │                 ↓                    The activity
   │          Another activity            comes to the
   │          comes in front of the       foreground
   │               activity                 ↑
   │                 ↓                       │
Other applications← ┌──────────────┐ ───────┘       The activity
need memory         │  onPause()   │               comes to the
   ↑                └──────┬───────┘                foreground
   │                       ↓                            ↑
   │          The activity is no longer                 │
   │                  visible                            │
   │                       ↓                             │
   │                ┌──────────────┐ ──────────────────┘
   └────────────────│  onStop()    │
                    └──────┬───────┘
                           ↓
                    ┌──────────────┐
                    │ onDestroy()  │
                    └──────┬───────┘
                           ↓
                    ┌──────────────┐
                    │ Activity is  │
                    │  shut down   │
                    └──────────────┘
```

✓ onCreate() →

```java
public class MainActivity extends Activity
{
    @Override
    protected void onCreate (Bundle savedInstanceState)
    {
        super.onCreate (savedInstanceState);
        setContentView (R. layout. activity_main);
        Toast.makeText (getApplication Context(),
        "I am onCreate() Method",
        Toast.LENGTH_SHORT). show ();
    }

    @Override
    protected void onStart()
    {
        Toast.makeText (getApplication Context(),
        "I am onStart() method",
        Toast.LENGTH_SHORT). show ();
        super.onStart ();
    }

    @Override
    protected void onResume()
    {
        Toast.makeText (getApplication Context(),
        "I am onResume() method",
        Toast.LENGTH_SHORT). show ();
        super.onResume ();
    }
}
```

```java
@ Override
protected void onPause ()
{
        Toast.makeText (getApplicationContext (),
        "I am onResume () Method",
        Toast. LENGTH_SHORT) . show ();
        super. onRePause ();
}
@ Override
protected void onStop ()
{
        Toast. makeText (getApplicationContext (),
        "I am onStop() Method",
        Toast. LENGTH_SHORT). show ();
        super. onStop ();
}
@ Override
protected void onRestart ()
{
        Toast. makeText (getApplicationContext (),
        "I am onRestart () Method",
        Toast. LENGTH_SHORT). show ();
        super. onRestart ();
}
@ Override
protected void Destroy ()
{
        Toast. makeText (getApplicationContext (),
        "I am onDestroy () Method",
        Toast. LENGTH_SHORT). show ();
        super. onDestroy ();
}
}
```