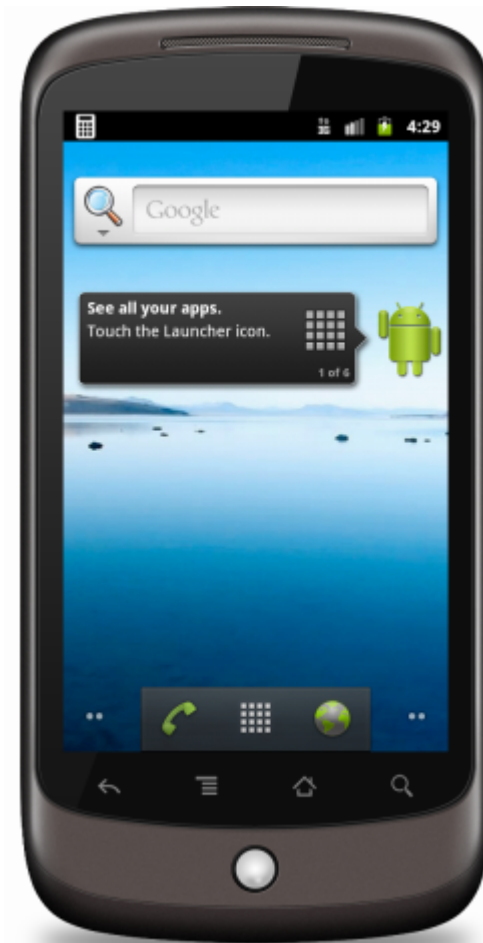


# Android - Service (started)

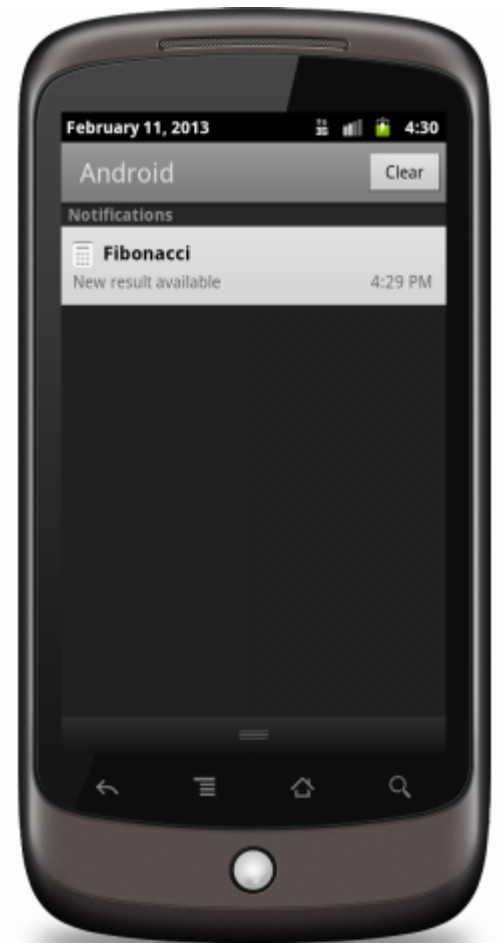
- An Android Service is an application component that can perform long running operations.
- By default, a service runs in the context of the UI thread. I.e., requires a thread to be created for background operations.
- A started service can run indefinitely. It is usually created to perform a single operation that does not return any results (e.g., download a file).
- A started service often posts completion of a task via a notification in the status bar.
- A started service is created via a call to `ContextWrapper.startService()` (class `ContextWrapper` is a base class of class `Activity`).
- A started service needs to derive from class `android.app.Service` and needs to override `onStartCommand()`.
- A service needs to be declared in `AndroidManifest.xml` using the `<service>` tag.
- Helper class `IntentService` automatically creates a background thread and adds a message queue.



Step 1: Enter "12" and press "Compute" button. Application will automatically terminate and return to the home screen.



Step 2: After 5 seconds a notification icon will appear in the top left corner of the screen.



Step 3: Swiping from the top of the screen downward will reveal the notifications.



Step 4: Click on the notification will re-launch the app which will then display the result of the computation.

# References

- General overview of [Android Services](#)
- [android.app.Service](#)
- [android.app.IntentService](#)
- [android.app.Notification](#)
- [android.app.PendingIntent](#)

# Exercise

Change the application such that it will compute the Fibonacci as well as the summation of the input value (i.e.,  $1 + 2 + 3 + \dots + n$ ). The summation should be performed in a separate service. For the new service, derive your implementation from base class `android.app.Service` (not `android.app.IntentService`). Use a `HandlerThread` to run the computation in the background. The summation should force a 3 second delay and post a notification for the result.