Outline

- Logistics
- Submission guidelines (Git/Github)
- Layouts
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Week #

Assn 1: Tip Calculator
Assn 2: Google Maps
Assn 3: Yelp Clone

Industry panel discussion
Tip Calculator

- **Canvas > Assignment**
  - Follow the README template to use markdown
  - Partners are assigned randomly after submission
  - Due October 11
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Number Guessing Game
Press the button which contains the larger number!

- 9
- 4

- 5
- 7

- 8
- 4
Source Control

- Records all your code changes
- Single source of truth for all developers
- Key functionality
  - Revert files back to previous state
  - Compare changes over time
  - Easily collaborate on features
  - "Blame" a code change :) for bug triage or learning
Git: a distributed version control system

- One of many version control systems
  - Git (git)
  - Mercurial (hg)
  - Subversion (svn)
Github

- A website/community that provides hosting for Git repositories
- Allows you to easily view files in the browser and comment on changes
- Register for an account at github.com
Public vs private repos

- Prefer public repositories:
  - Better for building a portfolio
  - Easier for sharing

- Be careful with what you put in Github
  - Secret API keys or access tokens
  - Use .gitignore file
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Android Activity

- A “screen” in Android is called an Activity
- Activities are where we write our application logic:
  - handle user interaction
  - change what’s on the screen
  - tell views to update
package edu.stanford.rkpandey.biggernumber

import ...

class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }
}
Layouts

- Layouts are defined in XML
- Consist of various “views”
  - TextView
  - ImageView
  - Button
  - EditText
  - ...

Activity ←→ Layout Communication
Layouts (ViewGroups)

- **ViewGroup**: a special view that can contain other views (called **children**)
- **Subclasses**:
  - ConstraintLayout
  - LinearLayout
  - FrameLayout
  - RelativeLayout
XML

- Language used to describe hierarchical data (e.g. views inside a viewgroup)
  - `<element attr1="value" attr2="value"> ... </element>`
  - `<element attr1="value" attr3="value" />` (self-closing)
- Case sensitive!
- Let autocomplete help you
Padding inside, margin outside
Prefer design tab, but understand XML

Most professional devs will edit the XML directly

- Faster to specify attribute names instead of searching
- Company-specific abstractions = less value from design preview
ConstraintLayout

- The new default layout system, intended to create powerful and flat view hierarchies
- Views are laid out according to relationships (or **constraints**) between sibling views and the parent layout.
**LinearLayout**

Aligns all children in a single direction, vertically or horizontally
RelativeLayout
Displays child views in relative positions
Flat hierarchies
Prep for next week

- Build the Tip Calculator
- If you’re stuck for more than 30 minutes, post on Piazza or come to office hours