

Android Project Setup and linking with GIT

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GIT Repository

- Create one directory on your GIT repository for the main team project.
- Create Separate directories for your experiments. (Please do not perform your experiments on the main team project directory).
- Click on the “+” next to SampleAndroid to create new directories.

The screenshot shows a GitHub repository page for 'SampleAndroid'. At the top, there is a profile icon with a 'S' and the repository name 'SampleAndroid'. Below the header, there are statistics: 0 stars, 0 forks, and an HTTPS link. A navigation bar includes 'Files (41 KB)', 'Commit (1)', 'Branch (1)', 'Tags (0)', and 'Readme', along with buttons for 'Add Changelog', 'Add License', 'Add Contribution guide', 'Add Kubernetes cluster', and 'Set up CI/CD'.

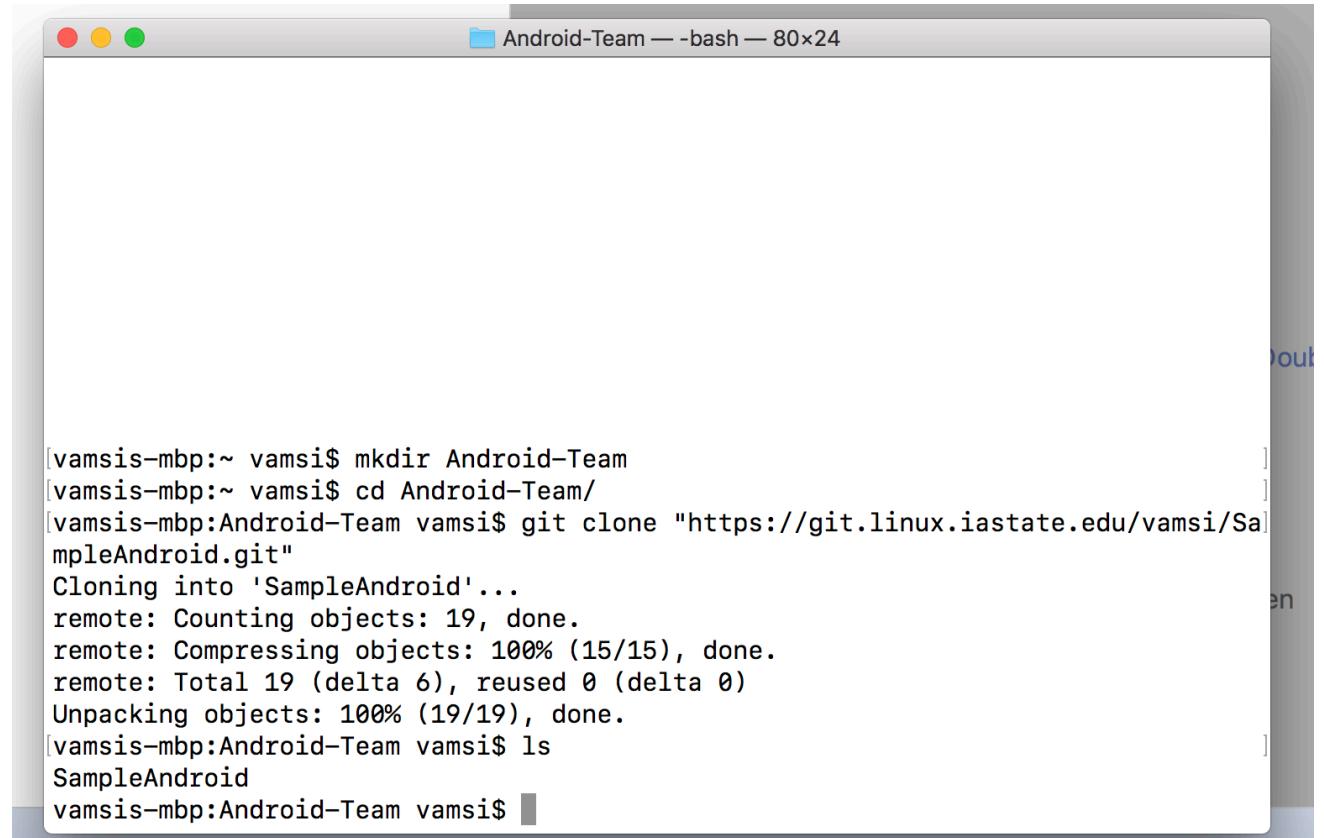
A 'Auto DevOps' section is present, with a sub-section titled 'Auto DevOps' explaining it will automatically build, test, and deploy the application. It includes a 'Learn more in the Auto DevOps documentation' link and an 'Enable in settings' button.

The main content area shows a list of branches: 'master' (selected) and 'SampleAndroid'. A recent commit is highlighted: 'Add new directory' by 'vamsi' 1 minute ago, with a commit hash 'bf66ad37'. Below this, a table lists recent commits:

Name	Last commit	Last update
Android-MainProject	Add new directory	1 minute ago
Experiment-Student1	Add new directory	3 minutes ago
Experiment-Student2	Add new directory	2 minutes ago
Experiment-Student3	Add new directory	2 minutes ago
Experiment-Student4	Add new directory	2 minutes ago

Cloning the GIT Repository

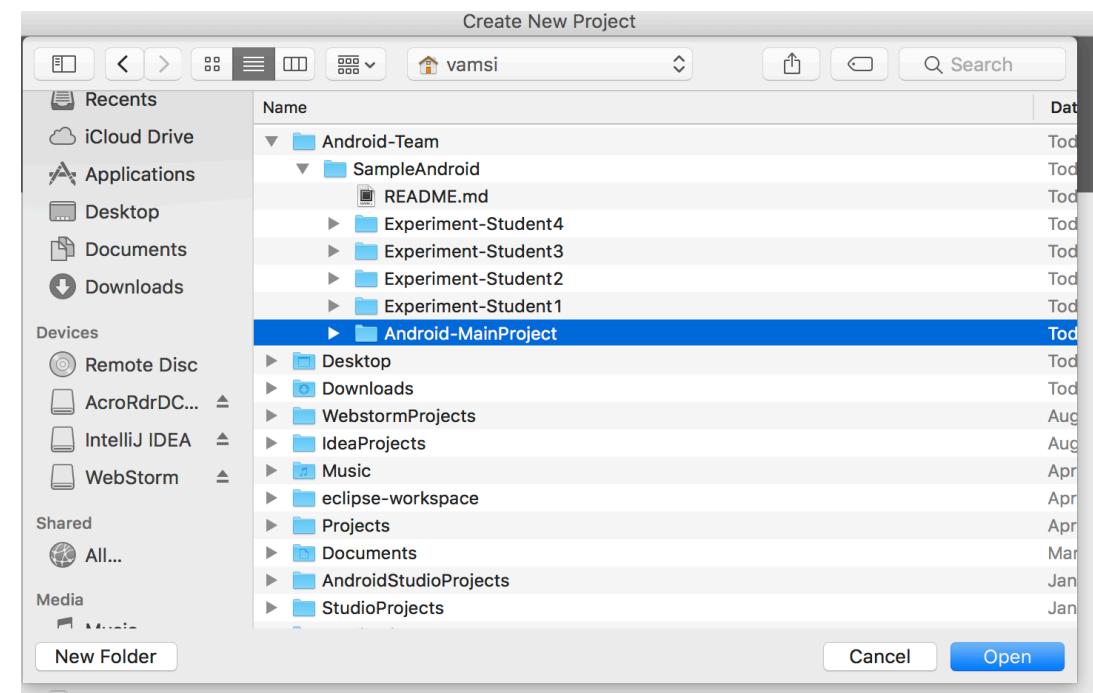
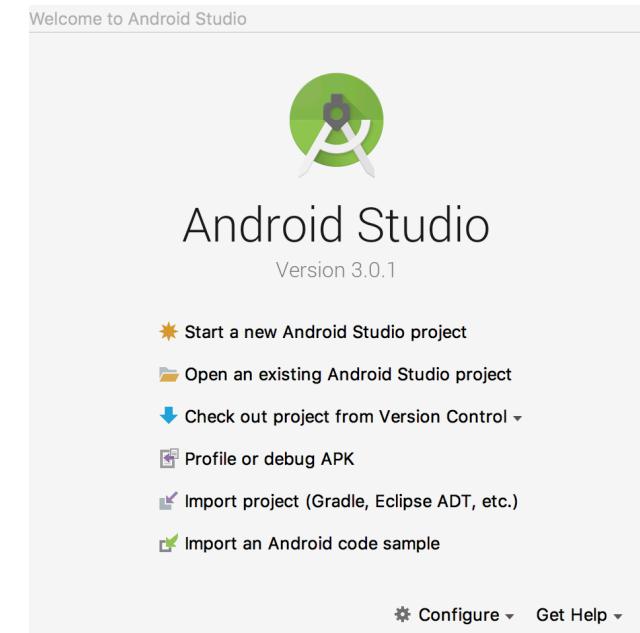
- Clone your GIT repository to your local machine.
- Open your terminal/Git Terminal. And create a new folder if you want.(Not necessary).
- Please refer to the Git materials for commands.



```
[vamsis-mbp:~ vamsi$ mkdir Android-Team
[vamsis-mbp:~ vamsi$ cd Android-Team/
[vamsis-mbp:Android-Team vamsi$ git clone "https://git.linux.iastate.edu/vamsi/SampleAndroid.git"
Cloning into 'SampleAndroid'...
remote: Counting objects: 19, done.
remote: Compressing objects: 100% (15/15), done.
remote: Total 19 (delta 6), reused 0 (delta 0)
Unpacking objects: 100% (19/19), done.
[vamsis-mbp:Android-Team vamsi$ ls
SampleAndroid
vamsis-mbp:Android-Team vamsi$ ]
```

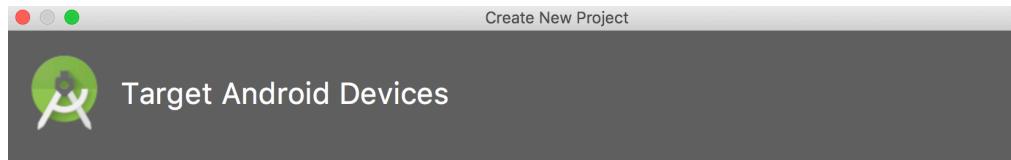
Creating Android Project

- Launch android studio.
- Click create new project and select the directory you want, in this case it would be android-main project.



Creating Android Project

- Choose a name for your project.
- Select the android version for your project.
(Recommended version is 5.0 lollipop)



Select the form factors and minimum SDK

Some devices require additional SDKs. Low API levels target more devices, but offer fewer API features.

Phone and Tablet

API 21: Android 5.0 (Lollipop)

By targeting **API 21 and later**, your app will run on approximately **71.3%** of devices. [Help me choose](#)

Include Android Instant App support

Wear

API 21: Android 5.0 (Lollipop)

TV

API 21: Android 5.0 (Lollipop)

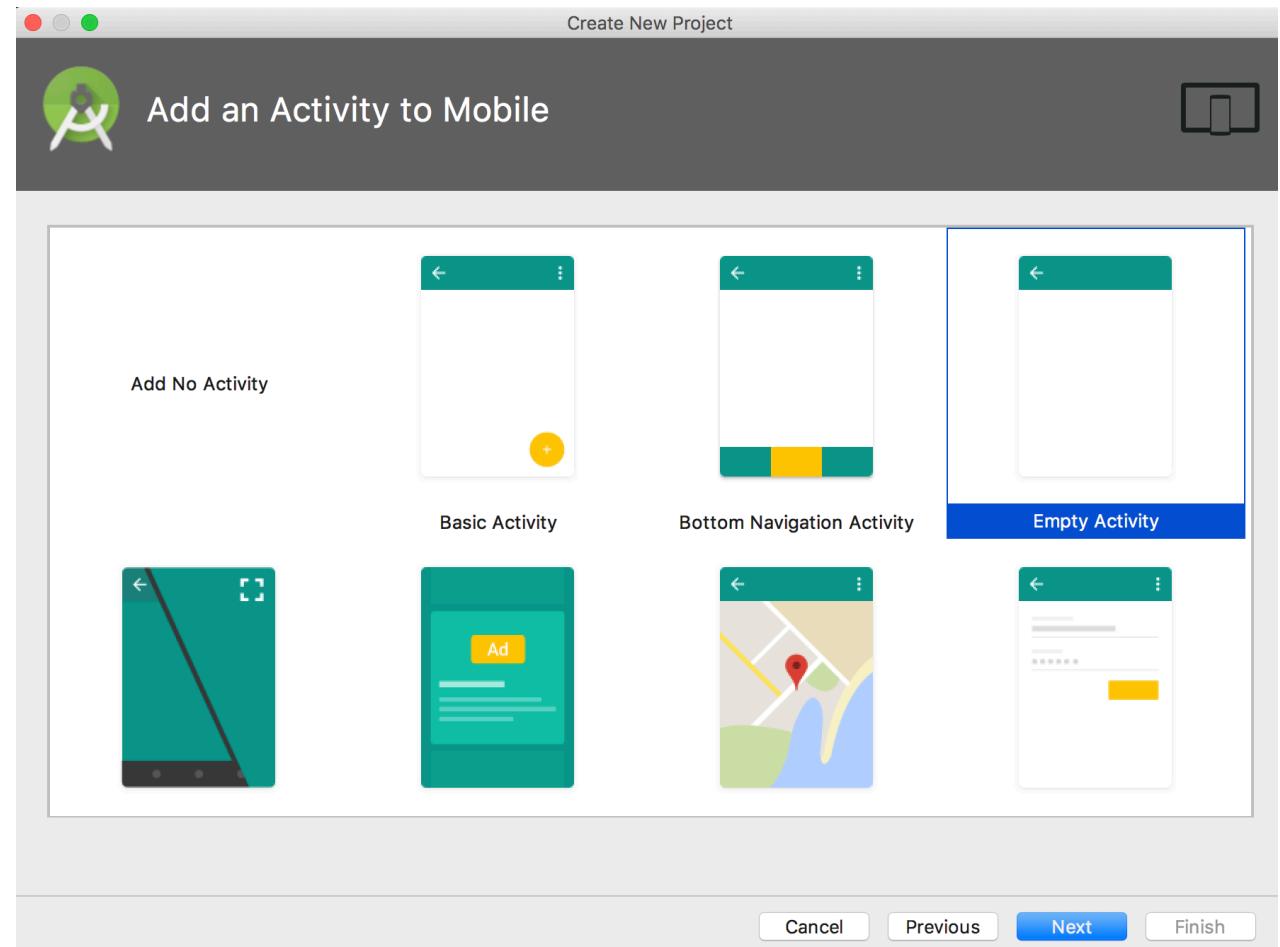
Android Auto

Android Things

API 24: Android 7.0 (Nougat)

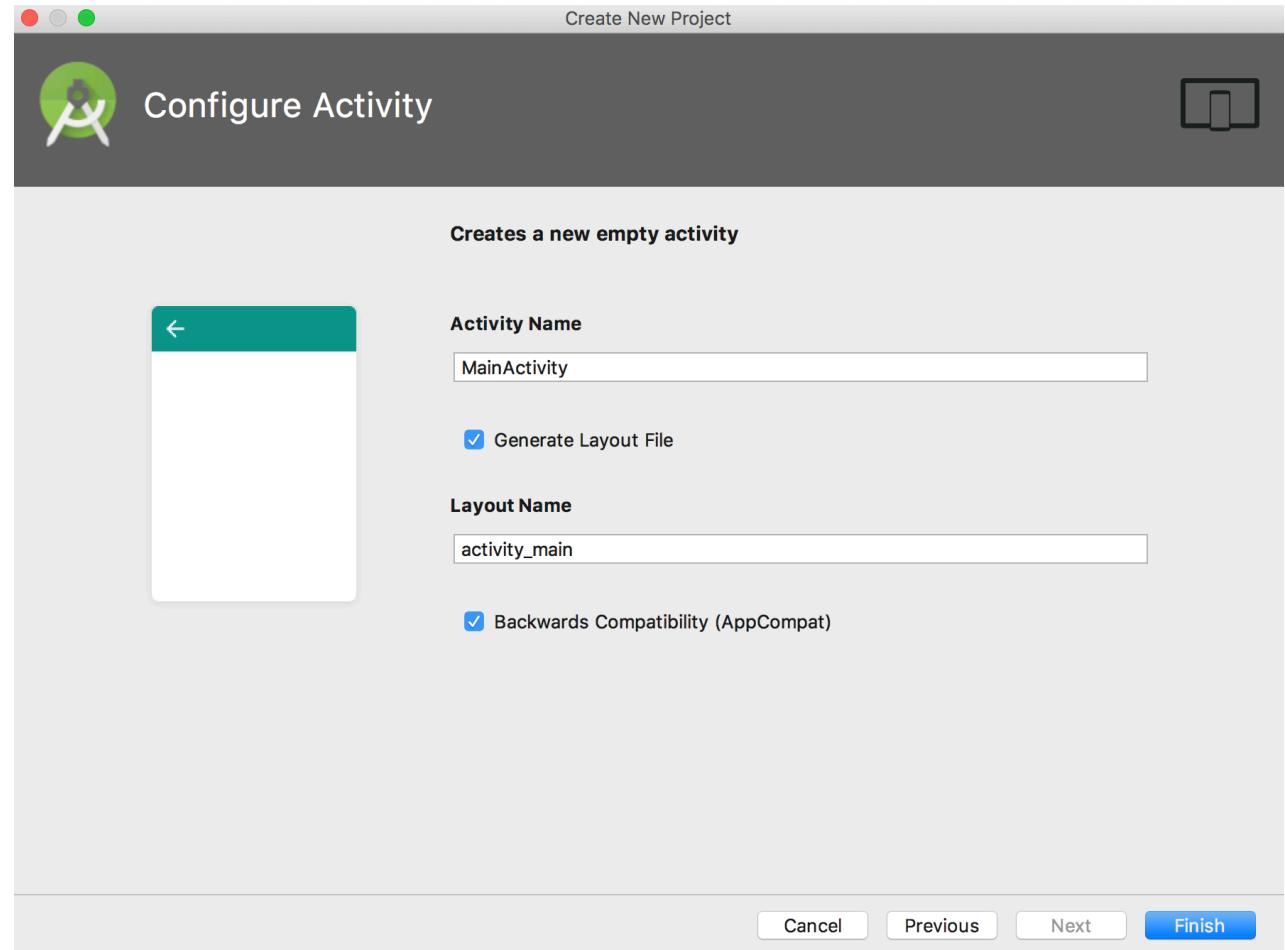
Creating Android Project

- Choose a layout for your activity.



Creating Android Project

- Give a name for your activity and click Finish.
- Your project is created.



Start using GIT on android studio

- Click on the terminal tab located on the bottom left corner of your android studio.
- Start using the GIT commands from here.

The screenshot shows the Android Studio interface. The code editor at the top displays the MainActivity.java file, which contains the following code:

```
1 package com.example.vamsi.myapplication;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6     @Override
7     protected void onCreate(Bundle savedInstanceState) {
8         super.onCreate(savedInstanceState);
9         setContentView(R.layout.activity_main);
10    }
11 }
12
13
14
```

Below the code editor is the Terminal tab, which shows the output of the git status command:

```
vamsis-mbp:Android-MainProject vamsi$ git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)

    .gitignore
    .idea/
    app/
    build.gradle
    gradle.properties
    gradle/
    gradlew
    gradlew.bat
    settings.gradle

nothing added to commit but untracked files present (use "git add" to track)
vamsis-mbp:Android-MainProject vamsi$
```

The bottom of the screen shows the macOS dock with various application icons.

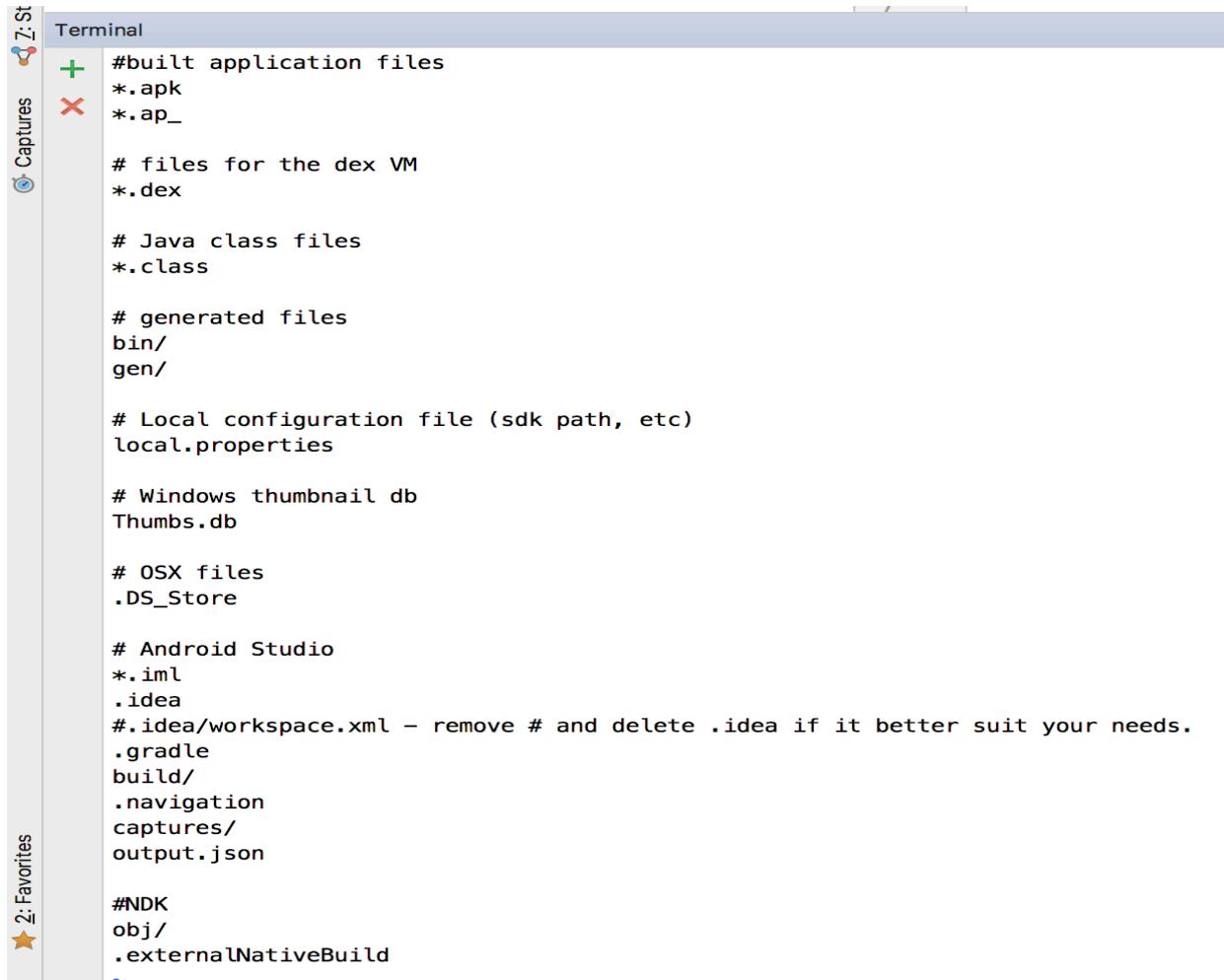
GIT Ignore

- Some files are meant to be there only on your local repository.
- Use .gitignore to achieve that.
- Android Studio 2.2 and up to 3.0, new projects are created with this .gitignore file:
 - *.iml .gradle /local.properties
/.idea/workspace.xml
/.idea/libraries .DS_Store /build
captures .externalNativeBuild.



A screenshot of a Mac OS X Dock at the bottom of the screen. The dock contains several icons, including the Finder, Mail, Safari, and others. Above the dock, the title bar of a Terminal window is visible, showing the path "vamsis-MacBook-Pro:Experiment-Student1 vamsi\$ vi .gitignore". The Terminal window itself is mostly empty, with a few small red and green icons visible on its left side.

GIT Ignore (Cont..)



```
# built application files
*.apk
*.ap_

# files for the dex VM
*.dex

# Java class files
*.class

# generated files
bin/
gen/

# Local configuration file (sdk path, etc)
local.properties

# Windows thumbnail db
Thumbs.db

# OSX files
.DS_Store

# Android Studio
*.iml
.idea
.idea/workspace.xml - remove # and delete .idea if it better suit your needs.
.gradle
build/
.navigation
captures/
output.json

#NDK
obj/
.externalNativeBuild
```

Commands:

vi .gitignore

Press "i" to insert

Fill you .gitnore files (Please refer:

<https://stackoverflow.com/questions/16736856/what-should-be-in-my-gitignore-for-an-android-studio-project>)

Press esc

Type :wq to save the file.

Basic GIT Commands

- git status
- git add .
- git commit -m “your-message here”
- git push -u origin master
- vi .gitignore

Please Note: The following operations have been done without using .gitignore.

But, Please use .gitignore refer to slides 9 and 10.

Android Studio File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

MainActivity.java - Android-MainProject - [~/Android-Team/SampleAndroid/Android-MainProject]

Android-MainProject app src main java com example vamsi myapplication MainActivity

activity_main.xml MainActivity.java

MainActivity

```
1 package com.example.vamsi.myapplication;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6     @Override
7     protected void onCreate(Bundle savedInstanceState) {
8         super.onCreate(savedInstanceState);
9         setContentView(R.layout.activity_main);
10    }
11 }
12
13
14
```

Terminal

```
+ vamsis-mbp:Android-MainProject vamsi$ git add .
vamsis-mbp:Android-MainProject vamsi$ git commit -m "First"
[master d9dcbe5] First
 37 files changed, 745 insertions(+)
 create mode 100644 Android-MainProject/.gitignore
 create mode 100644 Android-MainProject/.idea/.name
 create mode 100644 Android-MainProject/.idea/gradle.xml
 create mode 100644 Android-MainProject/.idea/misc.xml
 create mode 100644 Android-MainProject/.idea/runConfigurations.xml
 create mode 100644 Android-MainProject/app/.gitignore
 create mode 100644 Android-MainProject/app/build.gradle
 create mode 100644 Android-MainProject/app/proguard-rules.pro
 create mode 100644 Android-MainProject/app/src/androidTest/java/com/example/vamsi/myapplication/ExampleInstrumentedTest.java
 create mode 100644 Android-MainProject/app/src/main/AndroidManifest.xml
 create mode 100644 Android-MainProject/app/src/main/java/com/example/vamsi/myapplication/MainActivity.java
 create mode 100644 Android-MainProject/app/src/main/res/drawable-v24/ic_launcher_foreground.xml
 create mode 100644 Android-MainProject/app/src/main/res/drawable/ic_launcher_background.xml
 create mode 100644 Android-MainProject/app/src/main/res/layout/activity_main.xml
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-anydpi-v26/ic_launcher.xml
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-anydpi-v26/ic_launcher_round.xml
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-hdpi/ic_launcher.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-hdpi/ic_launcher_round.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-mdpi/ic_launcher.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-mdpi/ic_launcher_round.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-xhdpi/ic_launcher.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-xhdpi/ic_launcher_round.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-xxhdpi/ic_launcher.png
 create mode 100644 Android-MainProject/app/src/main/res/mipmap-xxhdpi/ic_launcher_round.png
 create mode 100644 Android-MainProject/app/src/main/res/values/colors.xml
 create mode 100644 Android-MainProject/app/src/main/res/values/strings.xml
```

Terminal Logcat Messages TODO

Event Log Gradle Console

Gradle build finished with 1 error(s) in 3s 986ms



Android Studio File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

MainActivity.java - Android-MainProject - [~/Android-Team/SampleAndroid/Android-MainProject]

Android-MainProject > app > src > main > java > com > example > vamsi > myapplication > MainActivity

activity_main.xml > MainActivity.java

Project: 1: Android app Gradle Scripts

Captures Z: Structure

MainActivity

```
1 package com.example.vamsi.myapplication;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6     @Override
7     protected void onCreate(Bundle savedInstanceState) {
8         super.onCreate(savedInstanceState);
9         setContentView(R.layout.activity_main);
10    }
11 }
12
13
14
```

Grade

Terminal

```
+ create mode 100644 Android-MainProject/app/src/main/res/mipmap-anydpi-v26/ic_launcher_round.xml
+ create mode 100644 Android-MainProject/app/src/main/res/mipmap-hdpi/ic_launcher.png
✖ create mode 100644 Android-MainProject/app/src/main/res/mipmap-hdpi/ic_launcher_round.png
create mode 100644 Android-MainProject/app/src/main/res/mipmap-mdpi/ic_launcher.png
create mode 100644 Android-MainProject/app/src/main/res/mipmap-mdpi/ic_launcher_round.png
create mode 100644 Android-MainProject/app/src/main/res/mipmap-xhdpi/ic_launcher.png
create mode 100644 Android-MainProject/app/src/main/res/mipmap-xhdpi/ic_launcher_round.png
create mode 100644 Android-MainProject/app/src/main/res/mipmap-xxhdpi/ic_launcher.png
create mode 100644 Android-MainProject/app/src/main/res/mipmap-xxhdpi/ic_launcher_round.png
create mode 100644 Android-MainProject/app/src/main/res/values/colors.xml
create mode 100644 Android-MainProject/app/src/main/res/values/styles.xml
create mode 100644 Android-MainProject/app/src/test/java/com/example/vamsi/myapplication/ExampleUnitTest.java
create mode 100644 Android-MainProject/build.gradle
create mode 100644 Android-MainProject/gradle.properties
create mode 100644 Android-MainProject/gradle/wrapper/gradle-wrapper.jar
create mode 100644 Android-MainProject/gradle/wrapper/gradle-wrapper.properties
create mode 100755 Android-MainProject/gradlew
create mode 100644 Android-MainProject/gradlew.bat
create mode 100644 Android-MainProject/settings.gradle
vamsis-mbp:Android-MainProject vamsi$ git push -u origin master
Counting objects: 73, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (52/52), done.
Writing objects: 100% (73/73), 123.43 KiB | 9.49 MiB/s, done.
Total 73 (delta 0), reused 0 (delta 0)
To https://git.linux.iastate.edu/vamsi/SampleAndroid.git
 bf66ad3..d9dbc5 master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
vamsis-mbp:Android-MainProject vamsi$
```

Logcat Messages TODO

Event Log Gradle Console

Gradle build finished with 1 error(s) in 3s 986ms (a minute ago)

43% Sat 2:32 PM

Device File Explorer

Icons: Calendar, Mail, Photos, Chat, Sheets, Charts, Android Studio, Music, Books, Settings, Screenshot, Google Sheets, Google Slides, Google Chrome, Terminal, Logcat, Messages, TODO, Event Log, Gradle Console, Build Variants, Favorites, Build Scripts, Project, Activity, Main, Java, Com, Example, Vamsi, MyApplication, MainActivity, activity_main.xml, App, Gradle Scripts, Captures, Z: Structure, Favorites, Build Variants, Device File Explorer.

master

SampleAndroid / Android-MainProject /

+ ▾

History

Find file

Web IDE



First

vamsi authored 54 seconds ago

d9dcbe56



Name	Last commit	Last update
..		
📁 .idea	First	53 seconds ago
📁 app	First	53 seconds ago
📁 gradle/wrapper	First	53 seconds ago
📄 .gitignore	First	53 seconds ago
📄 .gitkeep	Add new directory	7 minutes ago
📄 build.gradle	First	53 seconds ago
📄 gradle.properties	First	53 seconds ago
📄 gradlew	First	53 seconds ago
📄 gradlew.bat	First	53 seconds ago
📄 settings.gradle	First	53 seconds ago

Instructions

- Please use the same procedure to push your experiments to your experiments directory.
- Please don't push unnecessary files.
- Refer to this .gitignore for android.
<https://stackoverflow.com/questions/16736856/what-should-be-in-my-gitignore-for-an-android-studio-project>