

Gator On The Go

By Tongda Yin

Demo

Aesthetics

San Francisco State University X +

sfsu.edu

STRONGER TOGETHER: Read the latest information related to the SF State Fall 21 COVID-19 repopulation plan on the [Campus Checkback](#) website.

SAN FRANCISCO STATE UNIVERSITY

FUTURE STUDENTS | CURRENT STUDENTS | FACULTY & STAFF | ALUMNI | GIVE | ABOUT | QUICKLINKS

Commencement date announced for classes of 2020, 2021 >

Get Involved

News

- City youth vaccinated against COVID-19 receive scholarship for four years at SF State
- SF State honored for support of Latino transfer students
- New site provides insight into how aging resources evolve
- Increased research distinguishes the health benefits of running daily

more news >

Events

- Health Promotion & Wellness HPP Ambassador Program Info 01 11:00 AM to 11:30 AM
- Weekend Student Working Gator Ambassadors Narratives 01 Working on campus and in the community
- Open/Refund Resource Center Legal Service Consultations 02 10:00 AM to 7:00 PM

more events >

Join the Gator Family

Why San Francisco State?

- What Current Students Say
- Check Out the University
- Graduation Rates

Make the SF State Connection

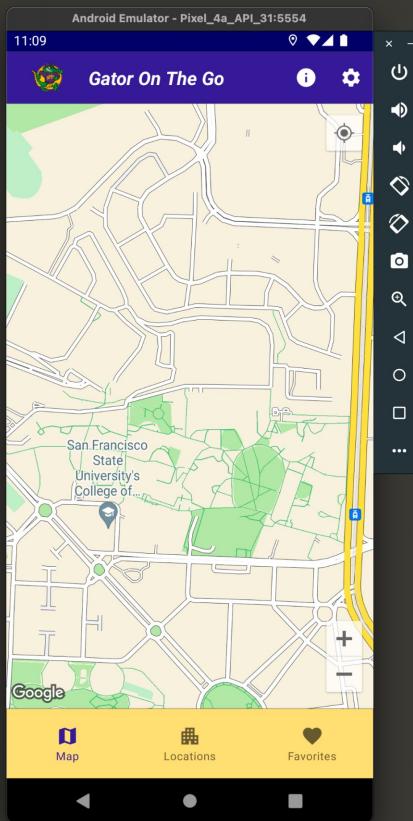
- Why You Should Work
- Learn About Tuition and Financial Aid

Get Social

f t i n m

Equity and Community Inclusion

Home to the nation's first College of Ethnic Studies, San Francisco State has a longstanding commitment to inclusiveness and social justice as expressed every day through University programs, initiatives and services.



COLOR TOOL

USER INTERFACES ACCESSIBILITY

MATERIAL PALETTE CUSTOM

< 2/6 >

Text

ITEM 1 ITEM 2 ITEM 3

CURRENT SCHEME

RESET ALL

Primary	Secondary	Text on P
#311a91 P	#ffe082 S RESET	#fffff T
P - Light #6745c2	S - Light #fffbfb	Text on S #000000 T
P - Dark #000062	S - Dark #caae53	

+

Gator On The Go - themes.xml [Gator_On_The_Go.app]

```

<resources xmlns:tools="http://schemas.android.com/tools">
    <!-- Base application theme. -->
    <style name="Theme.GatorOnTheGo" parent="Theme.MaterialComponents.DayNight.NoActionBar">
        <!-- Primary brand color. -->
        <item name="colorPrimary">@color/primary</item>
        <item name="colorPrimaryVariant">@color/primary_dark</item>
        <item name="colorOnPrimary">@color/white</item>
        <!-- Secondary brand color. -->
        <item name="colorSecondary">@color/secondary_light</item>
        <item name="colorSecondaryVariant">@color/secondary</item>
        <item name="colorOnSecondary">@color/grey</item>
        <!-- Status bar color. -->
        <item name="android:statusBarColor" tools:targetApi="l">?attr/colorPrimaryVariant</item>
        <!-- Customize your theme here. -->
        <item name="colorPrimaryDark">@color/primary_dark</item>
        <item name="colorAccent">@color/primary_dark</item>
    </style>
    <style name="location_item">
        <item name="android:textColor">@color/black</item>
    </style>
    <style name="locations_row">
        <item name="android:background">@drawable/border_outline</item>
    </style>
</resources>

```

Project values themes.xml app Pixel 4a API 31 Git Logcat Build Profiler Run App Inspection Event Log Layout Inspector resources

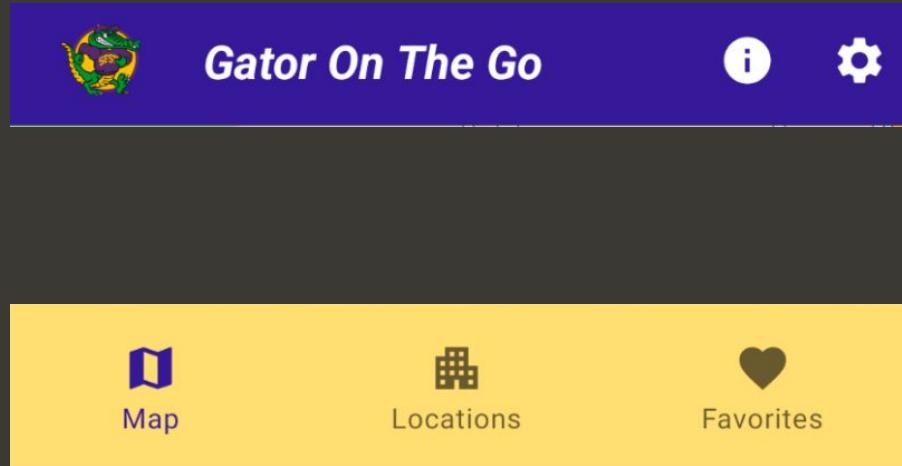
! TODO Problems Git Terminal Logcat Build Profiler Run App Inspection Event Log Layout Inspector resources

Launch succeeded (6 minutes ago) 1:59 LF UTF-8 4 spaces main ☀

Navigation

Navigation

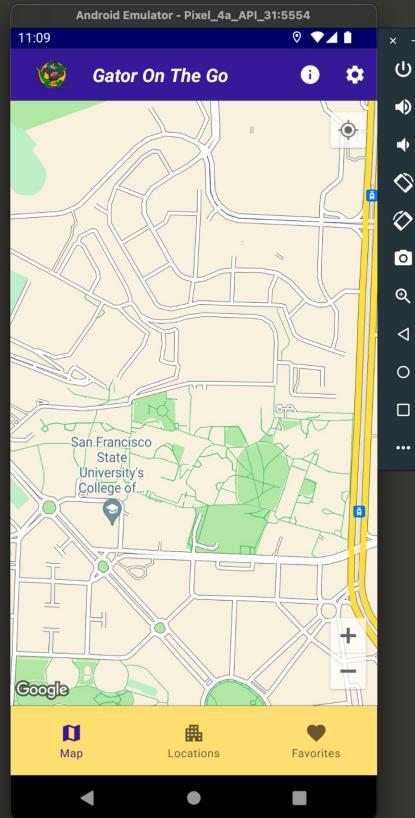
- 1 activity, 5 fragments
 - Main Activity
 - Map fragment
 - Locations fragment
 - Favorites fragment
 - Settings fragment
 - Information fragment
- 3 items on bottom navigation bar, 2 items on app bar



Map fragment

Map fragment

1. Prepare Google Maps API
2. Create map
3. Set up map parameters



Map fragment

1. Prepare Google Maps API
 - a. Google Cloud Platform
 - b. API key
 - c. Add dependencies

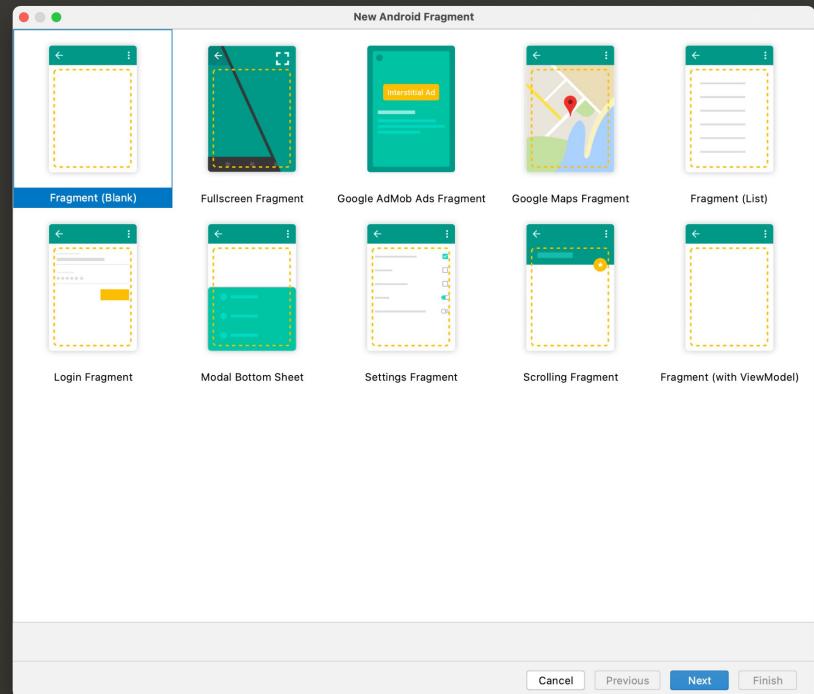
The screenshot shows the Google Cloud Platform APIs & Services Credentials page. The left sidebar has 'APIs & Services' selected, with 'Credentials' highlighted. A message at the top right says 'Create credentials to access your enabled APIs. Learn more' and 'Remember to configure the OAuth consent screen with information about your application.' Below is a 'CONFIGURE CONSENT SCREEN' button. The main area shows three sections: 'API Keys', 'OAuth 2.0 Client IDs', and 'Service Accounts'. The 'API Keys' section contains one entry:

Name	Creation date	Restrictions	Key	Actions
API key	Nov 6, 2021	None	AIzaSyD14-...G7Iu-qWNQw	

The 'OAuth 2.0 Client IDs' section says 'No OAuth clients to display'. The 'Service Accounts' section says 'Manage service accounts' and 'No service accounts to display'.

Map fragment

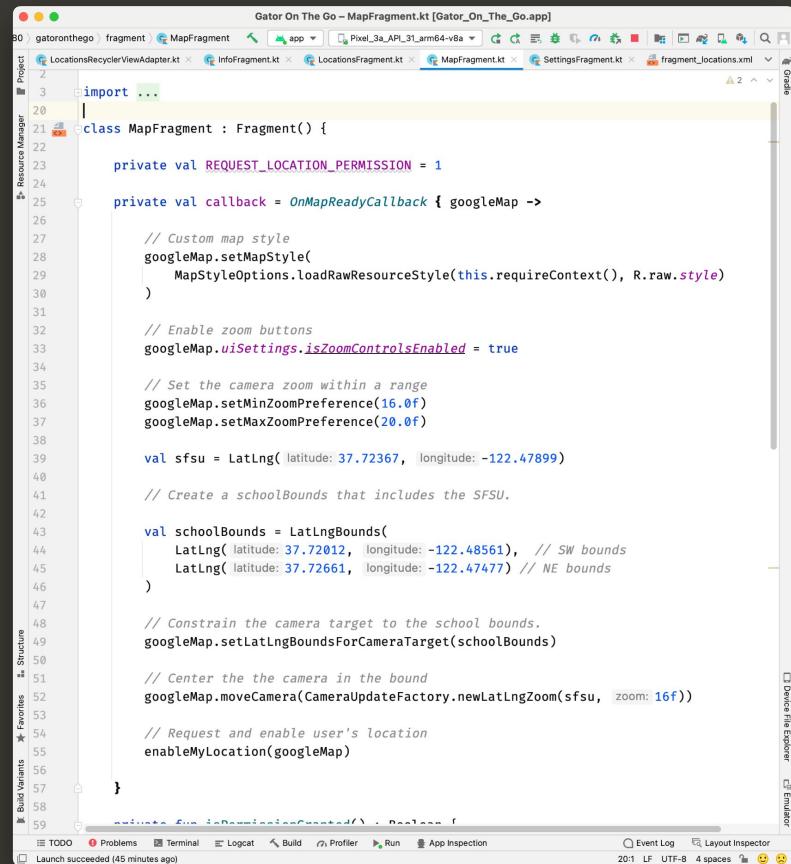
1. Prepare Google Maps API ✓
2. Create map
 - Create fragment by using Android studio template



Map fragment

1. Prepare Google Maps API ✓
2. Create map ✓
3. Set up map parameters
 - Ui settings
 - Min, Max zoom
 - Camera boundary
 - Enable my location
 - Custom style

• • •



The screenshot shows the Android Studio interface with the code editor open to the `MapFragment.kt` file. The code implements a `MapFragment` class that initializes a Google Map with specific parameters:

```
import ...

class MapFragment : Fragment() {

    private val REQUEST_LOCATION_PERMISSION = 1

    private val callback = OnMapReadyCallback { googleMap ->

        // Custom map style
        googleMap.setMapStyle(
            MapStyleOptions.loadRawResourceStyle(this.requireContext(), R.raw.style)
        )

        // Enable zoom buttons
        googleMap.uiSettings.isZoomControlsEnabled = true

        // Set the camera zoom within a range
        googleMap.setMinZoomPreference(16.0f)
        googleMap.setMaxZoomPreference(20.0f)

        val sfsu = LatLng( latitude: 37.72367, longitude: -122.47899)

        // Create a schoolBounds that includes the SFSU.
        val schoolBounds = LatLngBounds(
            LatLng( latitude: 37.72012, longitude: -122.48561), // SW bounds
            LatLng( latitude: 37.72661, longitude: -122.47477) // NE bounds
        )

        // Constrain the camera target to the school bounds.
        googleMap.setLatLngBoundsForCameraTarget(schoolBounds)

        // Center the the camera in the bound
        googleMap.moveCamera(CameraUpdateFactory.newLatLngZoom(sfsu, zoom: 16f))

        // Request and enable user's location
        enableMyLocation(googleMap)
    }
}
```

The code uses `LatLng` and `LatLngBounds` classes from the `com.google.android.gms.maps.model` package. It also imports `OnMapReadyCallback` from `com.google.android.gms.maps`. The code is annotated with `16.0f` and `20.0f` for zoom levels.

Location fragment

Locations fragment

1. Prepare data
 - Local File or Database?

Locations fragment

1. Preparing data
 - a. Raw data to Json
 - b. Json to List

sfstate.edu/~sfsumap/

San Francisco State University | Home | Login | Calendar | A-Z Index | Search Tools | Search

SFSU maps

Main campus map
Click on a quadrant for more details on campus facilities, services, and access information. To find a building, see the directory below.

Resources:

- Disability Programs and Resource Center (DPRC), 415-338-2472

Contact:

Facilities

- Hours: M - F, 8 a.m. - 5 p.m.
- Phone: 415-338-1568
- Fax: 415-338-6265
- Address: 1600 Holloway Ave, San Francisco, CA 94132, Facilities, Room 102



The Mashouf Wellness Center

Last Update: May 1, 2017

Main directory (read across each row; links are to the relevant quadrant map)

Administration (ADM) – I-B-9	Annex I & II – D3-4 (Q1) (Q4)	August Coppola Theatre (FA) – H6 (Q4)
Bike Barn (in GYM) – G7-B (Q4)	Bookstore – H7 (Q4)	Burk Hall (BH) – H-G6 (Q4)
Business (BUS) – H1-B-8/9- (Q4)	Cesar Chavez Student Center (CCSC) – H7 (Q4)	Child Care Center (Associated Students) – F2 (Q3)
Children's Campus – C3-D4 (Q1)	Conference Center (The Towers) – G4 (Q3)	Copy Center (in CCSC) – H7 (Q4)
Corporation Yard CYD) – D4 (Q1)	Cox Stadium – F7 (Q2)	Creative Arts (CA) – I6 (Q4)
Dining Center (aka City Eats) – G3 (Q3)	Ethnic Studies & Psychology (EP) – G6 (Q4)	Facilities & Capital Planning (in CYD) – D4 (Q1)

Google Maps

google.com/maps/@37.7238694,-122.4792866,17.07z

Search Google Maps

37.7238694, -122.4792866

Directions from here
Directions to here
What's here?
Search nearby
Print
Add a missing place
Add your business
Report a data problem
Measure distance
Layers

Map data ©2021 Google United States Terms Privacy Send feedback 200 ft

Untitled.txt — Edited

Administration (ADM) : 37.721119541584656, -122.47681604293307
 Annex I & II : 37.726302477257704, -122.48229080328922
 August Coppola Theatre (in FA) : 37.72221030201127, -122.47980160086873
 Bike Barn (in GYM) : 37.72353175319301, -122.4781913427086
 Bookstore : 37.72256618211584, -122.4783479444991
 Burk Hall (BH) : 37.723096671968946, -122.47948314372287
 Business (BUS) : 37.72201840373923, -122.4767451687843
 Cesar Chavez Student Center (CCSC) : 37.722480294871595, -122.47838982720317
 Child Care Center (Associated Students) : 37.7244881205454, -122.4837288327773
 Children's Campus : 37.72670672011048, -122.48293575510692
 Conference Center (The Towers) : 37.72395091175312, -122.48253407507332
 Copy Center (in CCSC) : 37.722480294871595, -122.47838982720317
 Corporation Yard (CYD) : 37.72593720876254, -122.48140535308151
 Cox Stadium : 37.72478932478366, -122.47829072440895
 Creative Arts (CA) : 37.72158519221359, -122.4793619941216
 Dining Center (City Eats) : 37.72374531456213, -122.48299318255212
 Ethnic Studies & Psychology (EP) : 37.72368420184953, -122.47907539277601
 Facilities & Capital Planning (in CYD) : 37.72593720876254, -122.48140535308151
 Fine Arts (FA) : 37.72221874283879, -122.47987709697964
 Garden of Remembrance : 37.72281160393313, -122.47962344178197
 Greenhouse #1 : 37.722782483687055, -122.4766794444028
 Greenhouse #2 : 37.7245022732866, -122.47600627933005
 Gymnasium (GYM) : 37.7235306071586, -122.4782301116203
 Hensill Hall (HH) : 37.72353506307536, -122.47553560393933
 Housing, Dining & Conference Services (in TCSQ) : 37.723986676199594, -122.48227983916732
 Housing Office (MWH) : 37.723635670647484, -122.48385899877835
 HSS : 37.7219753785816, -122.475946505852
 Humanities (HUM) : 37.72240839288927, -122.48139327255063
 Jack Adams Hall (in CCSC) : 37.722480294871595, -122.47838982720317
 Knuth Hall (in CA) : 37.72158519221359, -122.4793619941216
 Labor Archives (in LIB) : 37.72141079217456, -122.47752362407768
 Library, J. P. Leonard & Sutro (LIB) : 37.72141079217456, -122.47752362407768
 Little Theatre (in CA) : 37.72158519221359, -122.4793619941216
 Maloney Field (hardball) : 37.725030411548445, -122.4822893327661
 Manzanita Square (MS) : 37.72081830598019, -122.47581019625582
 Marcus Hall (MH) : 37.72143174212515, -122.48088874804729
 Mary Park Hall (MPH) : 37.72461984385043, -122.48434749268183
 Mary Ward Hall (MWH) : 37.723635670647484, -122.48385899877835
 Mashouf Wellness Center (MWC) : 37.722811916266507, -122.48435670687623
 McKenna Theatre (in CA) : 37.72158519221359, -122.4793619941216
 Memorial Grove : 37.72303951443829, -122.47803768286613
 Museum (in HUM) : 37.72240839288927, -122.48139327255063
 Nasser Family Plaza (GYM courtyard) : 37.72353343921403, -122.47818708862587
 OneStop Center (in SSB) : 37.72346870201042, -122.48085796765098
 Parking Garage (main) : 37.72471071090395, -122.48076691628162
 Parking & Transportation (in CYD) : 37.72593720876254, -122.48140535308151
 Planetarium (in TH) : 37.72377810769007, -122.47680274000972
 University Police Department (in CYD) : 37.72608900956886, -122.48153236861722
 Procurement and Support Services (in CYD) : 37.72593720876254, -122.48140535308151
 Recycling/Resource Center : 37.724659871438035, -122.48002017285947
 Science (SCI) : 37.72312485378423, -122.47579578806317
 Seven Hills Center : 37.724190026890774, -122.48295489469604
 Shipping & Receiving (in CYD) : 37.72593720876254, -122.48140535308151
 Softball Field : 37.72211799666455, -122.4834228888749

Untitled

Home Insert Draw Page Layout Formulas Data Review View Tell me

Calibri (Body) 18 A[~] fx

Number Conditional Formatting Format as Table Cell Styles Cells Editing Analyze Data

	A	B	C	D	E	F	G	H	I	J
1.	Administration (ADM)	37.72111954	-122.476816							
2.	Annex I & II	37.72630248	-122.4822908							
3.	August Coppola Theatre (in FA)	37.7222103	-122.4798016							
4.	Bike Barn (in GYM)	37.72353175	-122.4781913							
5.	Bookstore	37.72256618	-122.4783438							
6.	Burk Hall (BH)	37.72309667	-122.4794831							
7.	Business (BUS)	37.7220184	-122.4767452							
8.	Cesar Chavez Student Center (CCSC)	37.72248029	-122.4783898							
9.	Child Care Center (Associated Students)	37.72448812	-122.4837288							
10.	Children's Campus	37.72670672	-122.4829358							
11.	Conference Center (The Towers)	37.72395901	-122.4825341							
12.	Copy Center (in CCSC)	37.72248029	-122.4783898							
13.	Corporation Yard (CYD)	37.72593721	-122.4814054							
14.	Cox Stadium	37.72478932	-122.4782907							
15.	Creative Arts (CA)	37.72158519	-122.479362							
16.	Dining Center (City Eats)	37.72374531	-122.4829932							
17.	Ethnic Studies & Psychology (EP)	37.7236842	-122.4790754							
18.	Facilities & Capital Planning (in CYD)	37.72593721	-122.4814054							
19.	Fine Arts (FA)	37.72221875	-122.4798771							
20.	Garden of Remembrance	37.7228116	-122.4796234							
21.	Greenhouse #1	37.72278248	-122.4766794							
22.	Greenhouse #2	37.72450227	-122.4760063							
23.	Gymnasium (GYM)	37.72353061	-122.4782301							
24.	Hensill Hall (HH)	37.72353506	-122.4755356							
25.	Housing, Dining & Conference Services (in TCSQ)	37.72398668	-122.4822798							
26.	Housing Office (MWH)	37.72363567	-122.483859							
27.	HSS	37.72197538	-122.4759465							
28.	Humanities (HUM)	37.72240839	-122.4813933							
29.	Jack Adams Hall (in CCSC)	37.72248029	-122.4783898							
30.	Knuth Hall (in CA)	37.72158519	-122.479362							
31.	Labor Archives (in LIB)	37.72141079	-122.4775236							
32.	Library, J. P. Leonard & Sutro (LIB)	37.72141079	-122.4775236							
33.	Little Theatre (in CA)	37.72158519	-122.479362							
34.	Maloney Field (hardball)	37.72503041	-122.4822893							
35.	Manzanita Square (MS)	37.72081831	-122.4758102							
36.	Marcus Hall (MH)	37.72143174	-122.4808887							
37.	Mary Park Hall (MPH)	37.72461984	-122.4843475							

[CSV to JSON - CSVJSON](https://csvjson.com/csv2json)

Sponsored by Flatfile.io

CSV to JSON Tools Save CSV Importer • Install in minutes Works with React, Angular, Vue and more...

Online tool to convert your CSV or TSV formatted data to JSON.

1) Copy/paste or upload your Excel data (CSV or TSV) to convert it to JSON. 2) Set up options: parse numbers, transpose your data, or output an object instead of an array. 3) Convert and copy/paste back to your computer. 4) Save your result for later or for sharing.

Upload a CSV file
+ Select a file...

Or paste your CSV here

```
Administration (ADM),37.72111954,-122.476816
Annex I & II ,37.72630248,-122.4822908
August Coppola Theatre (in FA)
,37.7222103,-122.4798016
Bike Barn (in GYM)
,37.72353175,-122.4781913
Bookstore ,37.7256618,-122.4783438
Burk Hall (BH) ,37.72309667,-122.4794831
Business (BUS) ,37.7220184,-122.4767452
Cesar Chavez Student Center (CCSC)
,37.72248029,-122.4783898
Child Care Center (Associated Students)
,37.7244812,-122.4837288
Children's Campus
,37.72670672,-122.4829358
Conference Center (The Towers)
,37.72395901,-122.4825341
```

Options Hover on option for help
Separator Auto-detect Parse numbers Parse JSON Transpose
Output: Array Hash Minify
JSON

```
[{"name": "Administration (ADM)", "lat": 37.72111954, "lng": -122.476816}, {"name": "Annex I & II", "lat": 37.72630248, "lng": -122.4822908}, {"name": "August Coppola Theatre (in FA)", "lat": 37.7222103, "lng": -122.4798016}, {"name": "Bike Barn (in GYM)", "lat": 37.72353175, "lng": -122.4781913}, {"name": "Bookstore", "lat": 37.7256618, "lng": -122.4783438}, {"name": "Burk Hall (BH)", "lat": 37.72309667, "lng": -122.4794831}, {"name": "Business (BUS)", "lat": 37.7220184, "lng": -122.4767452}, {"name": "Cesar Chavez Student Center (CCSC)", "lat": 37.72248029, "lng": -122.4783898}, {"name": "Child Care Center (Associated Students)", "lat": 37.7244812, "lng": -122.4837288}, {"name": "Children's Campus", "lat": 37.72670672, "lng": -122.4829358}, {"name": "Conference Center (The Towers)", "lat": 37.72395901, "lng": -122.4825341}]
```

Convert Clear Download Copy Bug or suggestion?

Node.js
This function is available as a [npm package](#).

Uploading multiple CSVs?
Embed all the functionality of CSVJSON in any web application with [Flatfile](#), and more. Auto-match columns, validate data fields, and provide an intuitive CSV import experience.

About CSV

- CSV stands for Comma Separated Values. Often used as an interchange data format to represent table records, one per line. CSV is plain text.
- The CSV format is documented in an RFC memo [RFC-4180](#).
- The first line is often the header, or column names. Each subsequent row is a record and should have the same number of fields.

Fields containing the separator character, line breaks and double quotes must be enclosed

Gator On The Go – locations.json [Gator_On_The_Go.app]

Project locations.json

```
1 {"name": "Administration (ADM)", "lat": 37.72111954, "lng": -122.476816}
2 },
3 {"name": "Annex I & II", "lat": 37.72630248, "lng": -122.4822908}
4 },
5 {"name": "August Coppola Theatre", "lat": 37.72221, "lng": -122.479802}
6 },
7 {"name": "Bike Barn", "lat": 37.723532, "lng": -122.478191}
8 },
9 {"name": "Bookstore", "lat": 37.722566, "lng": -122.478344}
10 },
11 {"name": "Burk Hall (BH)", "lat": 37.723097, "lng": -122.479483}
12 },
13 {"name": "Business (BUS)", "lat": 37.722018, "lng": -122.476745}
14 },
15 {"name": "Cesar Chavez Student Center (CCSC)", "lat": 37.722482, "lng": -122.478393}
```

Resource Manager Favorites Build Variants Device File Explorer Emulator

58 : name

TODO Problems Terminal Logcat Build Profiler Run App Inspection Event Log Layout Inspector

Failed to start monitoring emulator-5554 (4 minutes ago)

293:27 LF UTF-8 2 spaces No JSON schema

Locations fragment

1. Preparing data

- a. Raw data to Json
- b. Json to List
 - i. Create POJO
 - ii. Read Json file
 - iii. Json to data type
 - iv. Data to list

2. Recyclerview Implementation

```
5  data class Location (
6    val name: String,
7    val latLng: LatLng
8  ) {
```

```
1  package edu.sfsu.csc680.gatoronthego.model
2
3  import com.google.android.gms.maps.model.LatLng
4
5  data class LocationsResponse(
6    val lat: Double,
7    val lng: Double,
8    val name: String
9  )
10
11 fun LocationsResponse.toLocation(): Location = Location(
12   name = name,
13   latLng = LatLng(lat, lng),
14 )
```

```
11
12  private val gson = Gson()
13
14  private val inputStream: InputStream
15    get() = context.resources.openRawResource(R.raw.locations)
16
17  fun read(): List<Location> {
18    val itemType = object : TypeToken<List<LocationsResponse>>() {}.type
19    val reader = InputStreamReader(inputStream)
20    return gson.fromJson<List<LocationsResponse>>(reader, itemType).map {
21      it.toLocation()
22    }
23 }
```

Locations fragment

Why I want to switch to database?

Locations fragment

1. Refactor architecture
 - a. Entity
 - b. Dao
 - c. Repository
 - d. Database
 - e. Application

Locations fragment

1. Refactor architecture
 - a. Entity

```
@Entity(tableName = "locations_table")
data class Location(
    @PrimaryKey(autoGenerate = true)
    var id: Int = 0,
    @ColumnInfo(name = "name")
    var name: String = "",
    @ColumnInfo(name = "lat")
    var lat: Double = 0.0,
    @ColumnInfo(name = "lng")
    var lng: Double = 0.0,
    @ColumnInfo(name = "isFav")
    var isFav: Boolean = false
)
```

Locations fragment

1. Refactor architecture
 - a. Entity
 - b. Dao

```
    @Dao
    interface LocationDao {
        @Insert
        suspend fun insert(location: Location)

        @Update
        suspend fun update(location: Location)

        @Delete
        suspend fun delete(location: Location)

        @Query("SELECT * FROM locations_table ORDER BY name")
        fun getAll(): Flow<List<Location>>
    }
```

Locations fragment

1. Refactor architecture
 - a. Entity
 - b. Dao
 - c. Repository

```
class LocationRepository(private val locationDao: LocationDao) {  
  
    val allLocations: Flow<List<Location>> = locationDao.getAll()  
  
    suspend fun insert(location: Location) {  
        locationDao.insert(location)  
    }  
  
    suspend fun update(location: Location) {  
        locationDao.update(location)  
    }  
  
    suspend fun delete(location: Location) {  
        locationDao.delete(location)  
    }  
}
```

Locations fragment

1. Refactor architecture
 - a. Entity
 - b. Dao
 - c. Repository
 - d. Database

```
@Database(entities = [Location::class], version = 1, exportSchema = true)
abstract class LocationDatabase : RoomDatabase() {

    abstract fun locationDao(): LocationDao

    companion object {
        // Singleton prevents multiple instances of database opening at the
        // same time.
        @Volatile
        private var INSTANCE: LocationDatabase? = null

        fun getDatabase(
            context: Context,
        ): LocationDatabase {
            // if the INSTANCE is not null, then return it,
            // if it is, then create the database
            return INSTANCE ?: synchronized(lock: this) {
                val instance = Room.databaseBuilder(
                    context.applicationContext,
                    LocationDatabase::class.java,
                    name: "locations_db"
                )
                    .createFromAsset(databaseFilePath: "database/locations.db")
                    .build()
                INSTANCE = instance
                // return instance
                instance ^synchronized
            }
        }
    }
}
```

Locations fragment

1. Refactor architecture
 - a. Entity
 - b. Dao
 - c. Repository
 - d. Database
 - e. Application

```
class LocationApplication: Application() {  
    val database by lazy { LocationDatabase.getDatabase(context: this) }  
    val repository by lazy { LocationRepository(database.locationDao()) }  
}
```

Locations fragment

1. Refactor architecture
2. ViewModel
 - a. Observable
 - b. Coroutine

```
class LocationViewModel(  
    private val repository: LocationRepository  
) : ViewModel() {  
  
    // For interacting with the map  
    private val _location = MutableLiveData<Location>()  
    val location: LiveData<Location> = _location  
  
    // Database  
    // For retrieving all locations from database  
    val allLocations: LiveData<List<Location>> = repository.allLocations.asLiveData()  
  
    fun insert(location: Location) = viewModelScope.launch { this: CoroutineScope  
        repository.insert(location)  
    }  
  
    fun update(location: Location) = viewModelScope.launch { this: CoroutineScope  
        repository.update(location)  
    }  
  
    fun delete(location: Location) = viewModelScope.launch { this: CoroutineScope  
        repository.delete(location)  
    }  
}  
  
class LocationViewModelFactory(private val repository: LocationRepository): ViewModelProvider.Factory {  
    override fun <T : ViewModel> create(modelClass: Class<T>): T {  
        if (modelClass.isAssignableFrom(LocationViewModel::class.java)) {  
            @Suppress("UNCHECKED_CAST")  
            return LocationViewModel(repository) as T  
        }  
        throw IllegalArgumentException("Unknown ViewModel class")  
    }  
}
```

Locations fragment

1. Refactor architecture
2. ViewModel
 - a. Observable

```
private fun setUpAdapter() {  
    viewModel.allLocations.observe(viewLifecycleOwner, { it: List<Location>!  
        adapter = LocationsAdapter(it, viewModel, clickListenerImpl)  
        binding.rvLocations.adapter = adapter  
    })  
}
```

Locations fragment

1. Refactor architecture
2. ViewModel
 - a. Observable
 - b. Coroutine

```
@Insert
suspend fun insert(location: Location)

@Update
suspend fun update(location: Location)

@Delete
suspend fun delete(location: Location)
```

```
fun insert(location: Location) = viewModelScope.launch { this: CoroutineScope
    repository.insert(location)
}

fun update(location: Location) = viewModelScope.launch { this: CoroutineScope
    repository.update(location)
}

fun delete(location: Location) = viewModelScope.launch { this: CoroutineScope
    repository.delete(location)
}
```

Locations fragment

- Favorite button

Administration (ADM)	
Annex I & II	
August Coppola Theatre (in FA)	
Bike Barn (in GYM)	
Bookstore	
Burk Hall (BH)	
Business (BUS)	
Cesar Chavez Student Center (CCSC)	
Child Care Center (Associated Students)	

```
// Set toggle button listener
holder.toggle.setOnCheckedChangeListener { _, _ ->
    if (holder.toggle.isPressed) {
        location.isFav = !location.isFav
        viewModel.update(location)
        notifyItemChanged(index)
    }
}
```

Locations fragment

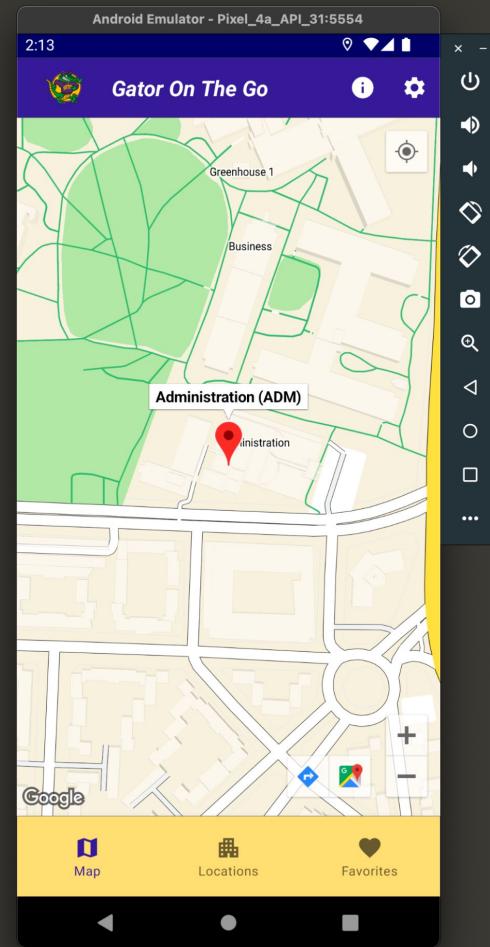
- Search view

```
// Search view filter logic
override fun getFilter(): Filter {
    return object : Filter() {
        override fun performFiltering(constraint: CharSequence?): FilterResults {
            val charSearch = constraint.toString()
            filterList = if (charSearch.isEmpty()) {
                locationsList
            } else {
                val resultList = ArrayList<Location>()
                for (row in locationsList) {
                    if (row.name.lowercase(Locale.ROOT)
                        .contains(charSearch.lowercase(Locale.ROOT)))
                    {
                        resultList.add(row)
                    }
                }
                resultList
            }
            val filterResults = FilterResults()
            filterResults.values = filterList
            return filterResults
        }

        @SuppressLint("NotifyDataSetChanged")
        @Suppress("UNCHECKED_CAST")
        override fun publishResults(constraint: CharSequence?, results: FilterResults?) {
            filterList = results?.values as List<Location>
            notifyDataSetChanged()
        }
    }
}
```

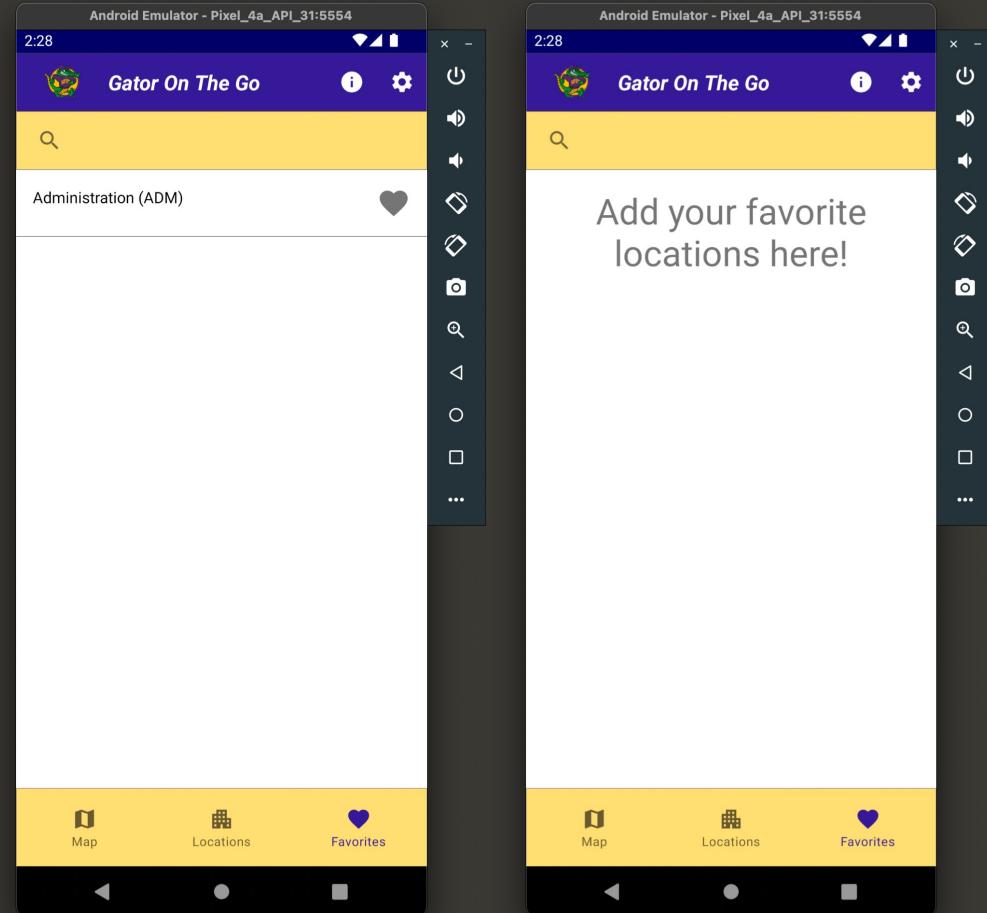
Locations fragment

- Adding marker



Favorites fragment

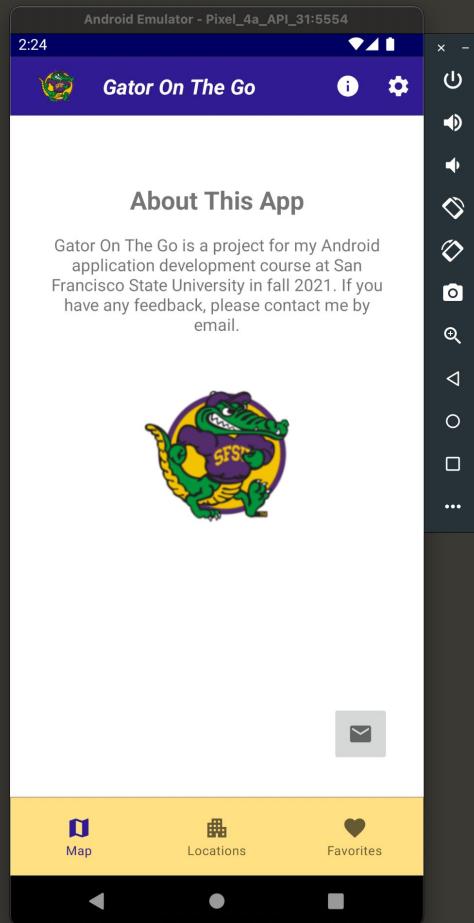
- Filter isFav attribute
- Hide.recyclerview



Info fragments & Settings

Information fragment

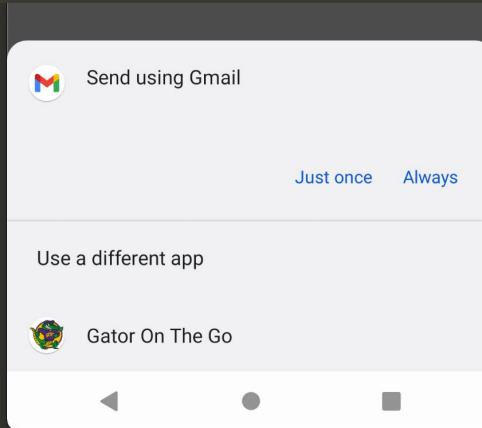
- General information
- Implicit intend



Information fragment

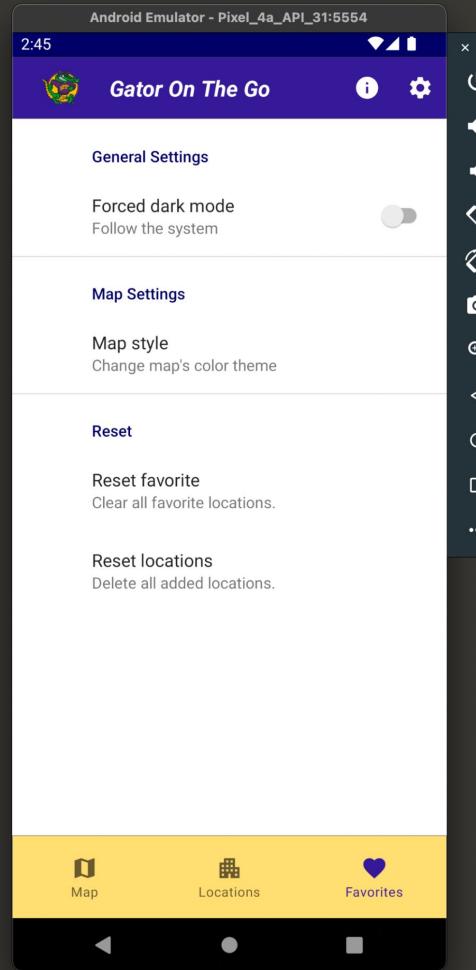
- Implicit intend

```
binding.infoEmail.setOnClickListener { it: View!  
    val intent = Intent(Intent.ACTION_SENDTO).apply { this: Intent  
        data = Uri.parse("mailto:")  
        putExtra(Intent.EXTRA_EMAIL, ADDRESS)  
        putExtra(Intent.EXTRA_SUBJECT, SUBJECT)  
    }  
    if (intent.resolveActivity(requireActivity().packageManager) != null) {  
        startActivity(intent)  
    }  
}
```



Settings fragment

- Dark mode
- Map style
- Reset

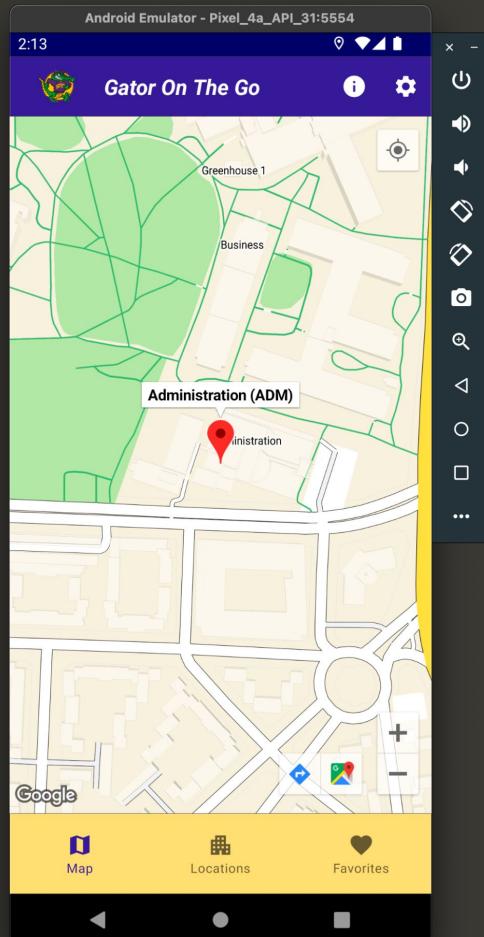
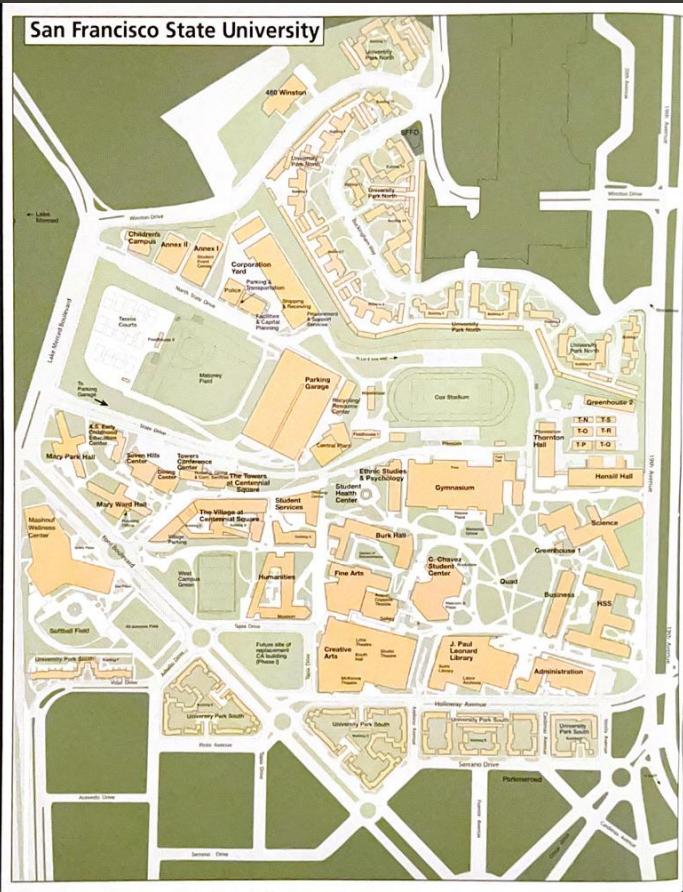


```
val mapStyles = arrayOf(  
    R.raw.map_style_default,  
    R.raw.map_style_night,  
    R.raw.map_style_retr,  
    R.raw.map_style_pale  
)
```

Conclusion

Topic from lecut

- Layout - lecture 2
 - Activity - lecture 3
 - Threading - lecture 4
 - Permissions - lecture 4
 - Persistence - lecture 4
 - Fragment - lecture 5
 - Sensor - lecture 6
 - Navigation - lecture 7
 - Lifecycle - lecture 7
 - ViewModel - lecture 7
 - Observables - lecture 8
 - LiveData - lecture 8
 - RecyclerView - lecture 9
 - Room - lecture 9
 - Coroutines - lecture 9
- ...



Thank You!