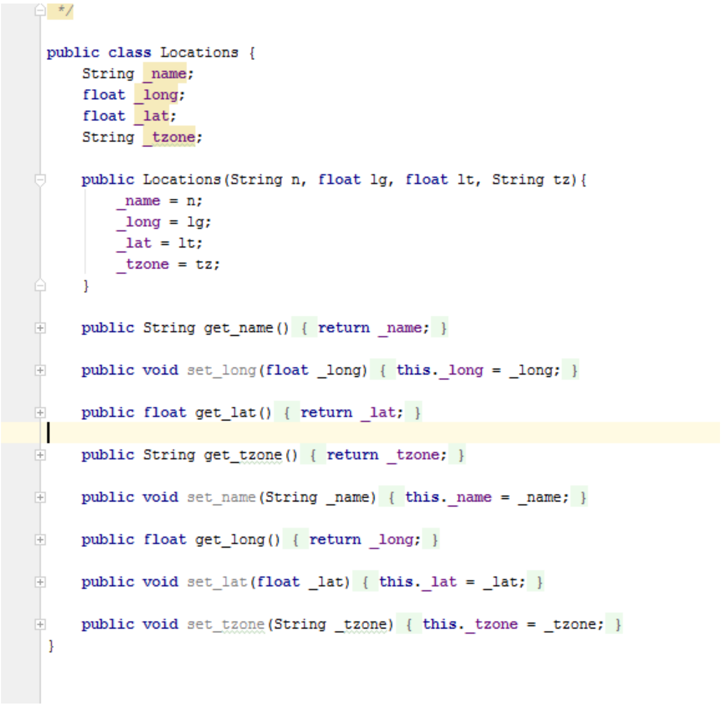
Assignment 5

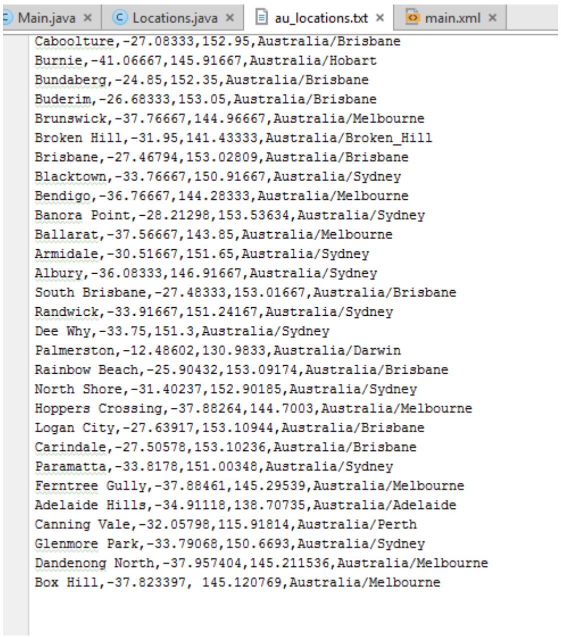
Task 1



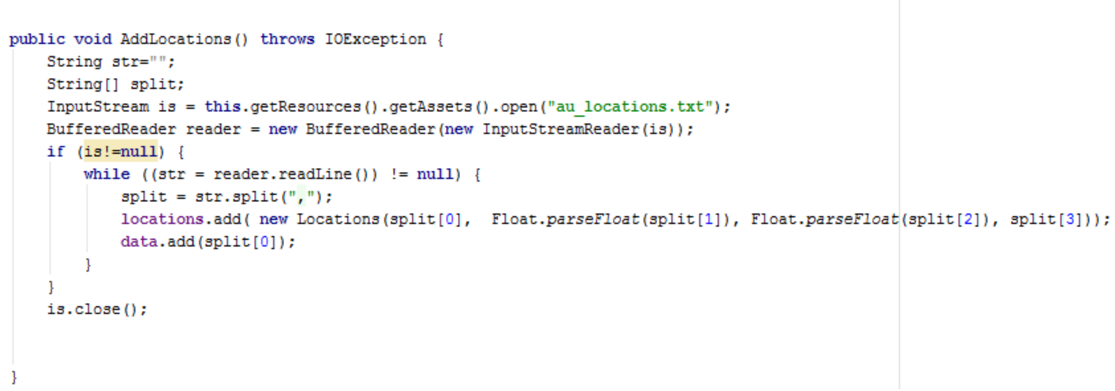
```
*/

public class Locations {
    String _name;
    float _long;
    float _lat;
    String _tzone;

    public Locations(String n, float lg, float lt, String tz){
        _name = n;
        _long = lg;
        _lat = lt;
        _tzone = tz;
    }

    public String get_name() { return _name; }

    public void set_long(float _long) { this._long = _long; }

    public float get_lat() { return _lat; }

    public String get_tzone() { return _tzone; }

    public void set_name(String _name) { this._name = _name; }

    public float get_long() { return _long; }

    public void set_lat(float _lat) { this._lat = _lat; }

    public void set_tzone(String _tzone) { this._tzone = _tzone; }
}
```

Created a new class of Locations to store the data.

Saved the locations in a text file. Added Box Hill and Dandenong North to file.

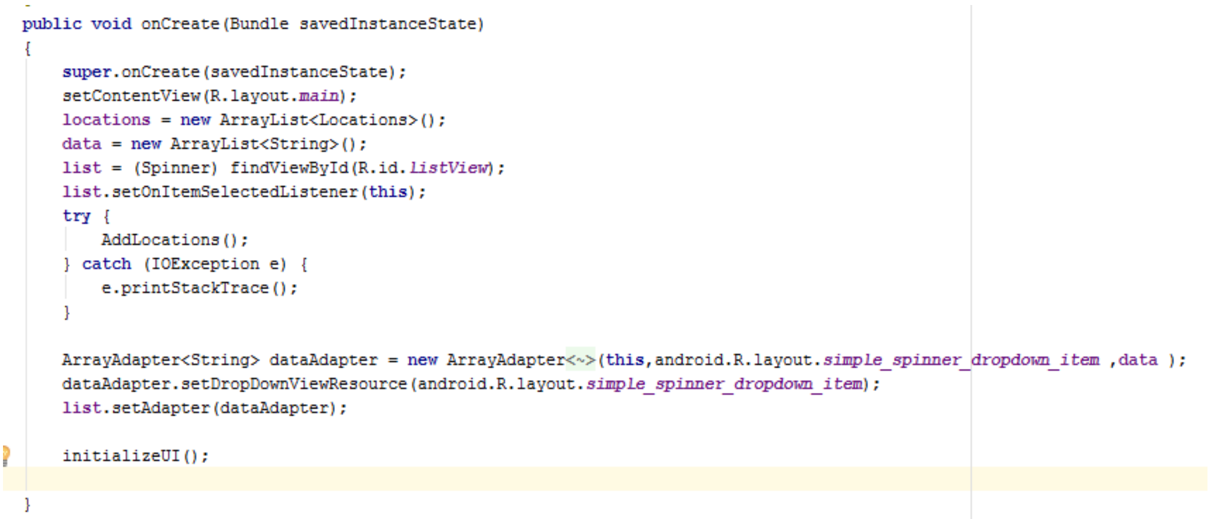


```
Caboolture,-27.08333,152.95,Australia/Brisbane
Burnie,-41.06667,145.91667,Australia/Hobart
Bundaberg,-24.85,152.35,Australia/Brisbane
Buderim,-26.68333,153.05,Australia/Brisbane
Brunswick,-37.76667,144.96667,Australia/Melbourne
Broken Hill,-31.95,141.43333,Australia/Broken_Hill
Brisbane,-27.46794,153.02809,Australia/Brisbane
Blacktown,-33.76667,150.91667,Australia/Sydney
Bendigo,-36.76667,144.28333,Australia/Melbourne
Banora Point,-28.21298,153.53634,Australia/Sydney
Ballarat,-37.56667,143.85,Australia/Melbourne
Armidale,-30.51667,151.65,Australia/Sydney
Albury,-36.08333,146.91667,Australia/Sydney
South Brisbane,-27.48333,153.01667,Australia/Brisbane
Randwick,-33.91667,151.24167,Australia/Sydney
Dee Why,-33.75,151.3,Australia/Sydney
Palmerston,-12.48602,130.9833,Australia/Darwin
Rainbow Beach,-25.90432,153.09174,Australia/Brisbane
North Shore,-31.40237,152.90185,Australia/Sydney
Hoppers Crossing,-37.88264,144.7003,Australia/Melbourne
Logan City,-27.63917,153.10944,Australia/Brisbane
Carindale,-27.50578,153.10236,Australia/Brisbane
Paramatta,-33.8178,151.00348,Australia/Sydney
Ferntree Gully,-37.88461,145.29539,Australia/Melbourne
Adelaide Hills,-34.91118,138.70735,Australia/Adelaide
Canning Vale,-32.05798,115.91814,Australia/Perth
Glenmore Park,-33.79068,150.6693,Australia/Sydney
Dandenong North,-37.957404,145.211536,Australia/Melbourne
Box Hill,-37.823397, 145.120769,Australia/Melbourne
```



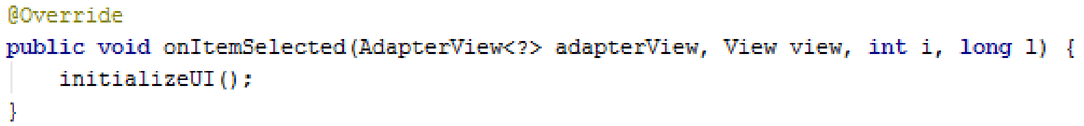
```
public void AddLocations() throws IOException {
    String str="";
    String[] split;
    InputStream is = this.getResources().getAssets().open("au_locations.txt");
    BufferedReader reader = new BufferedReader(new InputStreamReader(is));
    if (is!=null) {
        while ((str = reader.readLine()) != null) {
            split = str.split(",");
            locations.add( new Locations(split[0],  Float.parseFloat(split[1]), Float.parseFloat(split[2]), split[3]));
            data.add(split[0]);
        }
    }
    is.close();


}
```

By using an Input stream and a buffer reader. I was able to read from the text file and save the data in a arraylist of locations.



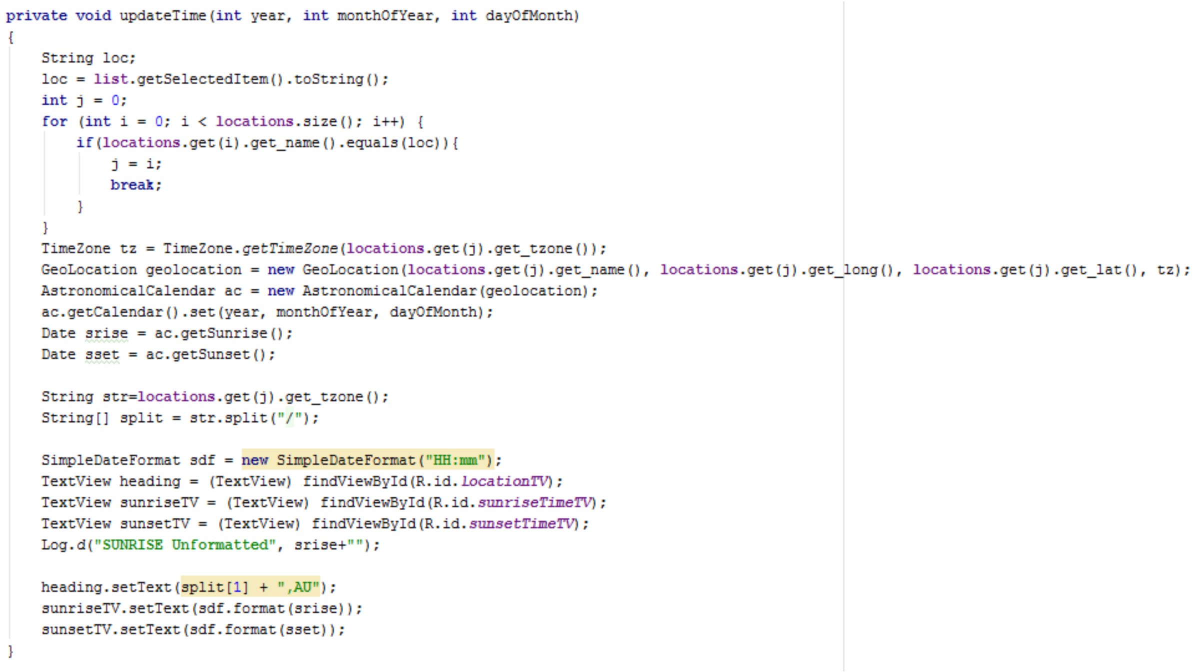
```
public void onCreate(Bundle savedInstanceState)
{
    super.onCreate(savedInstanceState);
    setContentView(R.layout.main);
    locations = new ArrayList<Locations>();
    data = new ArrayList<String>();
    list = (Spinner) findViewById(R.id.listView);
    list.setOnItemSelectedListener(this);
    try {
        AddLocations();
    } catch (IOException e) {
        e.printStackTrace();
    }

    ArrayAdapter<String> dataAdapter = new ArrayAdapter<~>(this,android.R.layout.simple_spinner_dropdown_item ,data );
    dataAdapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
    list.setAdapter(dataAdapter);

    initializeUI();

}
```

In Android, a drop down box is called a spinner. So after you read the file and add the locations. You then you need to create an arrayadapter that stores all the details to be inputted to the spinner.



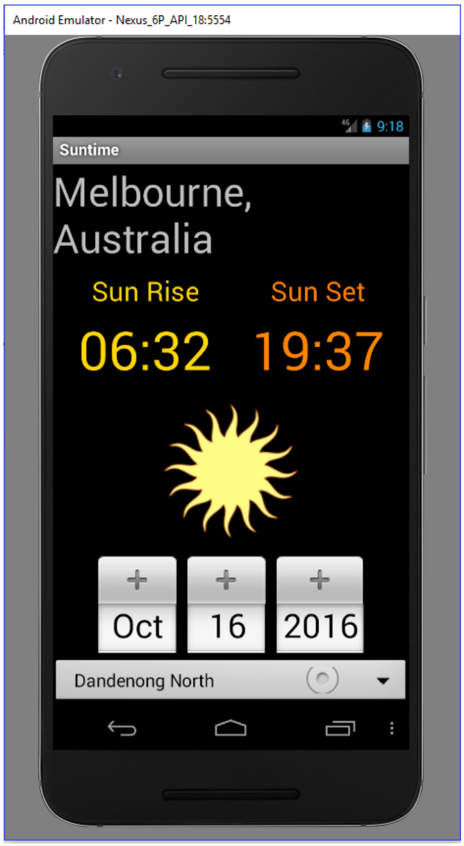
```
@Override
public void onItemSelected(AdapterView<?> adapterView, View view, int i, long l) {
    initializeUI();
}
```

When you select an item in the spinner. It will automatically update any functionality using onitemselected.

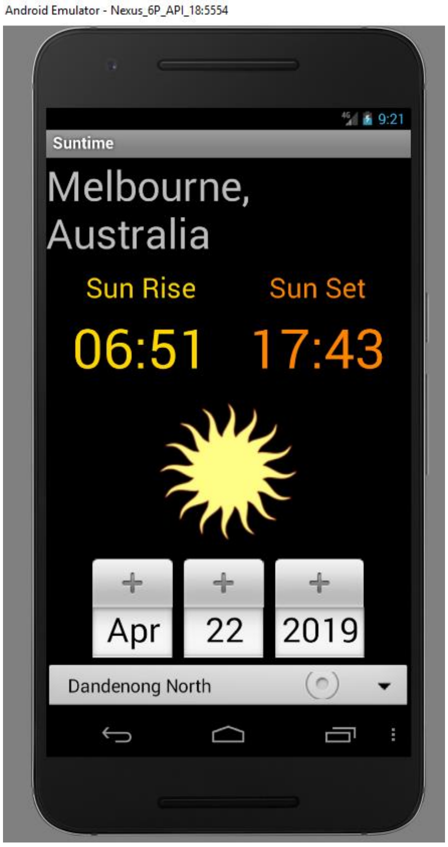


```
private void updateTime(int year, int monthOfYear, int dayOfMonth)
{
    String loc;
    loc = list.getSelectedItem().toString();
    int j = 0;
    for (int i = 0; i < locations.size(); i++) {
        if(locations.get(i).get_name().equals(loc)){
            j = i;
            break;
        }
    }
    TimeZone tz = TimeZone.getTimeZone(locations.get(j).get_tzone());
    GeoLocation geolocation = new GeoLocation(locations.get(j).get_name(), locations.get(j).get_long(), locations.get(j).get_lat(), tz);
    AstronomicalCalendar ac = new AstronomicalCalendar(geolocation);
    ac.getCalendar().set(year, monthOfYear, dayOfMonth);
    Date srise = ac.getSunrise();
    Date sset = ac.getSunset();

    String str=locations.get(j).get_tzone();
    String[] split = str.split("/");

    SimpleDateFormat sdf = new SimpleDateFormat("HH:mm");
    TextView heading = (TextView) findViewById(R.id.locationTV);
    TextView sunriseTV = (TextView) findViewById(R.id.sunriseTimeTV);
    TextView sunsetTV = (TextView) findViewById(R.id.sunsetTimeTV);
    Log.d("SUNRISE Unformatted", srise+"");

    heading.setText(split[1] + ",AU");
    sunriseTV.setText(sdf.format(srise));
    sunsetTV.setText(sdf.format(sset));
}
```

When you go to update the time it will grab the item from the spinner and then update the time zone and geo location to the data from the locations arraylist and then update the UI according to the location.



As you can see, there is a spinner on the bottom with the list of locations from the text file. It has changed to Dandenong North which is in the Melbourne time zone.



Android Emulator - Nexus_6P_API_18:5554

Suntime

Melbourne, Australia

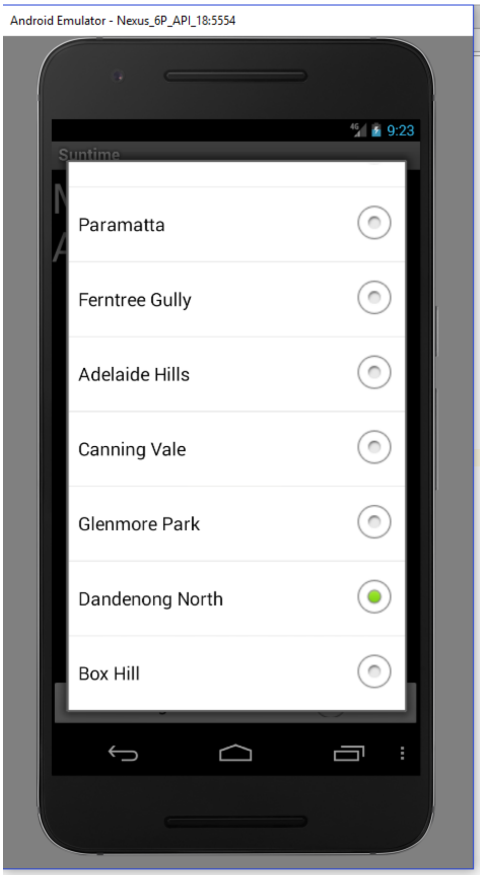
Sun Rise 06:51

Sun Set 17:43

Apr 22 2019

Dandenong North

You can change the date and the UI will update to accommodate the changes



Android Emulator - Nexus_6P_API_18:5554

Suntime

○ Paramatta

○ Ferntree Gully

○ Adelaide Hills

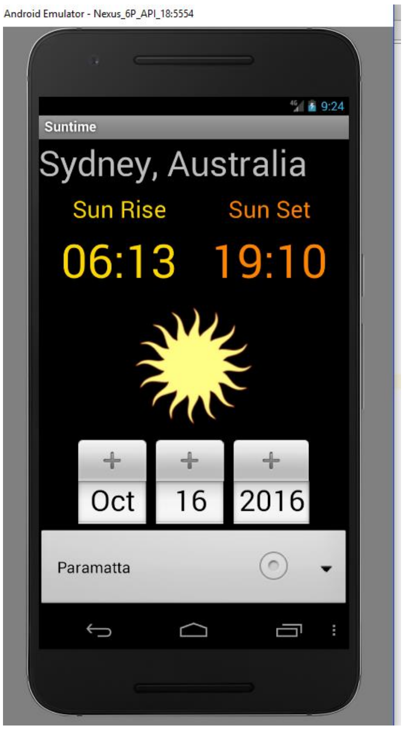
○ Canning Vale

○ Glenmore Park

● Dandenong North

○ Box Hill

As you can see I have populated the spinner and you can select whichever location you want. When you change the item in the spinner it will defaul back to the day before today.



Android Emulator - Nexus_6P_API_18:5554

Suntime

Sydney, Australia

Sun Rise 06:13

Sun Set 19:10

Oct 16 2016

Paramatta

Task2

Hi-Fidelity Testing

Executive Summary

The Sun Rise App hi-fidelity testing was completed by 4 participants and all 4 were satisfied that it runs the way it was intended to.

Introduction

The Sun Rise app is an idea which a user can access the time the Sun will rise/ set in a certain location. You will be able to look at the weather forecast for any past/ present/ future date that is valid.

The apps main features will include:

- Sun Rise/Set times
- Select from a pre-existing library of popular locations
- Generate a table of sun rise/ set times for a range of dates
- Share information via SMS and email
- Location Detection
- Google maps integration
- View weather forecast
- View sun rise/set times for various locations on a map

User Stories

As a holiday maker, I want to see the sun rise/ set times in Wellington NZ so that can take pictures of the harbour

As a man fasting for 40 days due to religious believes, I want to find out the sun rise/set times so that I can have a spreadsheet of details from the 3 counties I will be in.

As a man fasting for 40 days due to religious believes, I want to email the spreadsheet so that I can have a copy to look once I close the app.

As a man fasting for 40 days due to religious believes, I want to print off the spreadsheet so that I can have a physical copy.

As a beach walker, I want to find out when the sun rises so I can ponder the meaning of live

As a camper, I want to use the in-built GPS system so that I can find out the sun rise/ set times due to poor signal.

As a camper, I want to email a spreadsheet so that I can find out the sun rise/ set times due to poor signal.

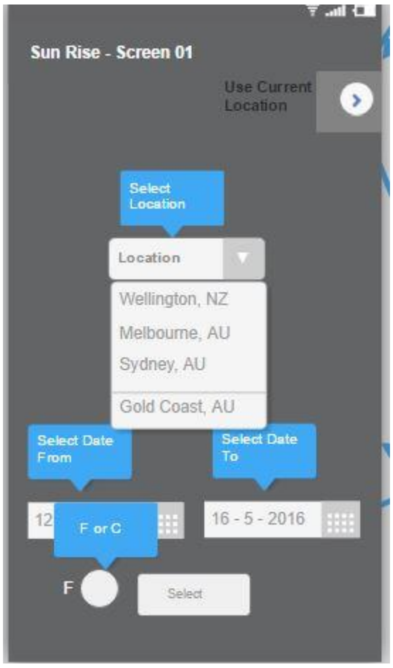
Scenarios or Stories

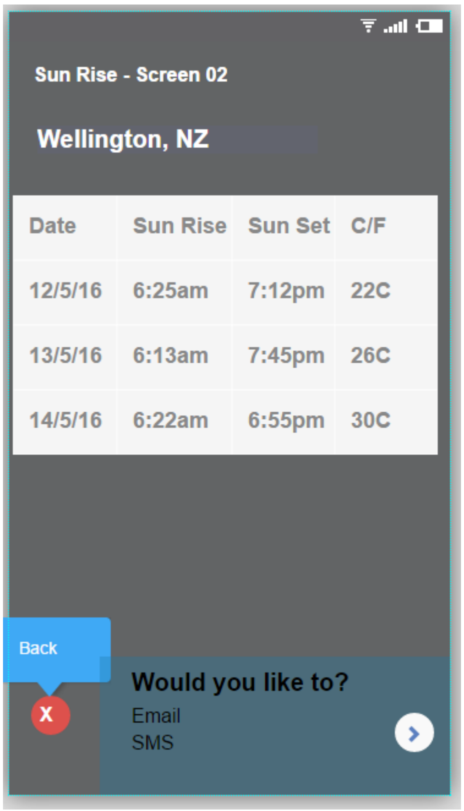
When developing for the full app, A user story is more beneficial because people can relate to a good story more than a scenario. Even though stories might not be able to show a full feature list, they can portray enough information for people, so if they wish to research the app, they can then see what extra features they have which can increase the chances of people downloading and using the app.

Hi-Fidelity Prototype

Screen 01

On the home screen you have the ability to select a location and the dates you wish to see the sun rise and set. You have the ability to see the weather in Fahrenheit because the app is in Celsius since it's being made in Australia and Celsius is the standard here. You also have the ability to click the fragment and go to google maps and see it for the current location.

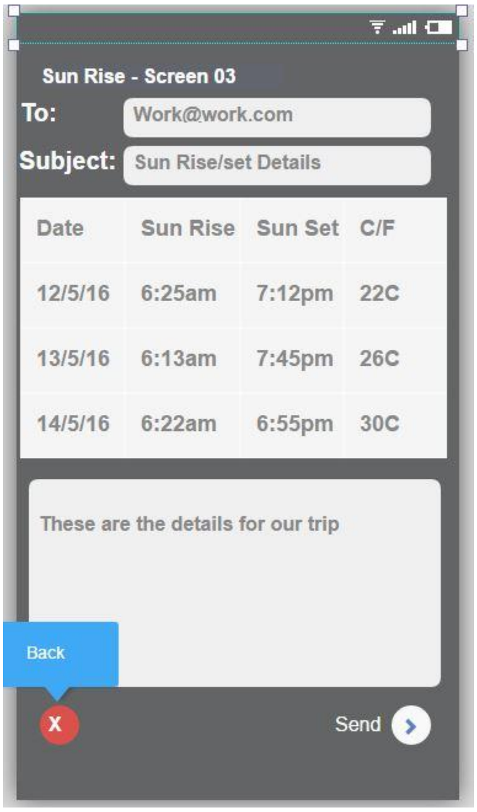




Date	Sun Rise	Sun Set	C/F
12/5/16	6:25am	7:12pm	22C
13/5/16	6:13am	7:45pm	26C
14/5/16	6:22am	6:55pm	30C

Screen 02

After you have finished selecting your dates and location. It will setup a table with all the relevant data. Since Fahrenheit wasn't selected it defaulted too Celsius. You also the ability to email or SMS the details. You also the capability to go back to main activity.



Sun Rise - Screen 03

To: Work@work.com

Subject: Sun Rise/set Details

Date	Sun Rise	Sun Set	C/F
12/5/16	6:25am	7:12pm	22C
13/5/16	6:13am	7:45pm	26C
14/5/16	6:22am	6:55pm	30C

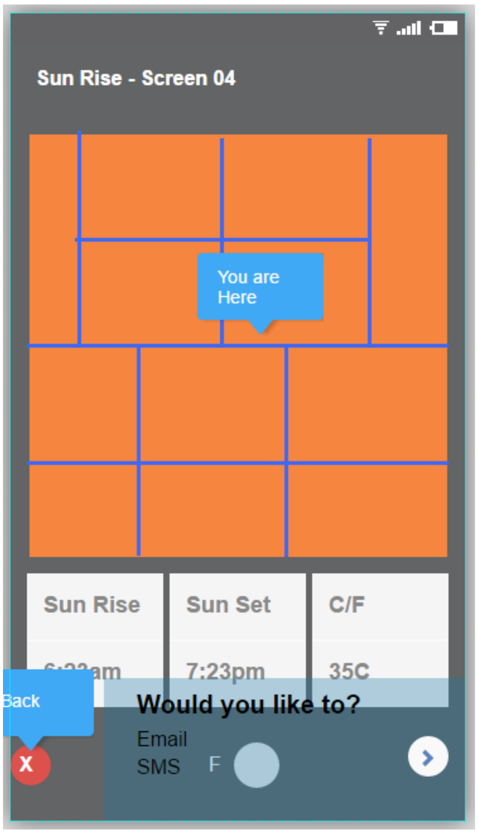
These are the details for our trip

Screen 3

The activity populates the table and give you the ability to add people to the sending field and create a subject for the email. You can add anything you like to a small text field if you feel like it. You can send the email or go back to the pervious activity.

Screen 04

If you decide to select the current location it will come up with the google maps api on the screen showing your location. Then underneath it. It displays the sun rise/set time with the current weather of the location. Change be changed to Fahrenheit. You have the ability to email or SMS it. You can go back to the main activity.



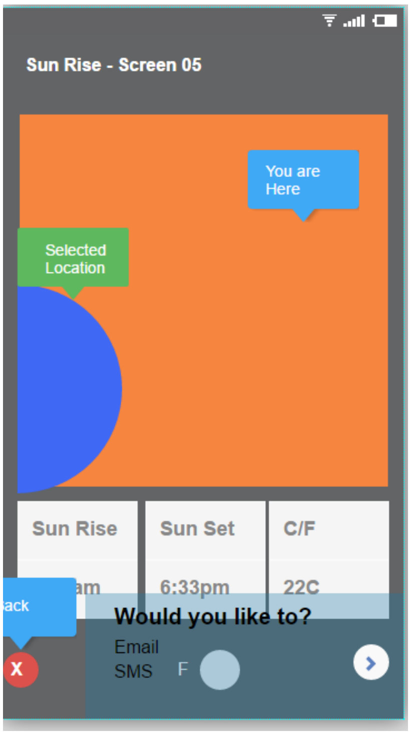
Sun Rise - Screen 04

Sun Rise	Sun Set	C/F
6:??am	7:23pm	35C

Would you like to?

Email

SMS

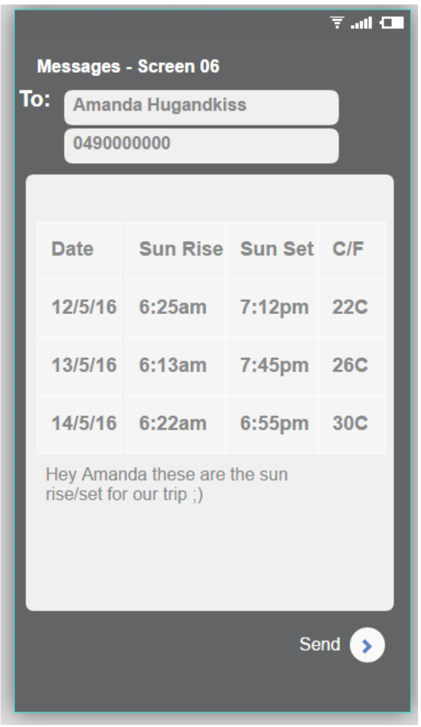


Screen 05

When you select your current location. You have the power to change your location. When you do change your location it will update the sun rise/set to the appropriate times and update the weather.

Screen 06

If you were interested in sending an SMS. It would take you to your SMS app and save the table as a JPEG and you can send it.


Messages - Screen 06

To: Amanda Hugandkiss

0490000000

Date	Sun Rise	Sun Set	C/F
12/5/16	6:25am	7:12pm	22C
13/5/16	6:13am	7:45pm	26C
14/5/16	6:22am	6:55pm	30C

Hey Amanda these are the sun rise/set for our trip ;)

User Scenarios and the UI

Scenario 1

All Brad has to do is go from Screen 01 -> Screen 02

Scenario 2

Sachin can complete his task by going from Screen 01 -> Screen 02 -> Screen 03

Scenario 3

Li has 2 options

1. Screen 01 -> Screen 02
2. Screen 01 -> Screen 05

Scenario 4

Justin and Mary can complete their task by going Screen 01 -> Screen 04 -> Screen 3