Assignment 08

COS30017 - Software Development for Mobile Devices

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1. Task 1

1.1. Introduction

1.2. Performance Optimisations

1.3. Usability Improvement

1.4. References

1.5. Appendix

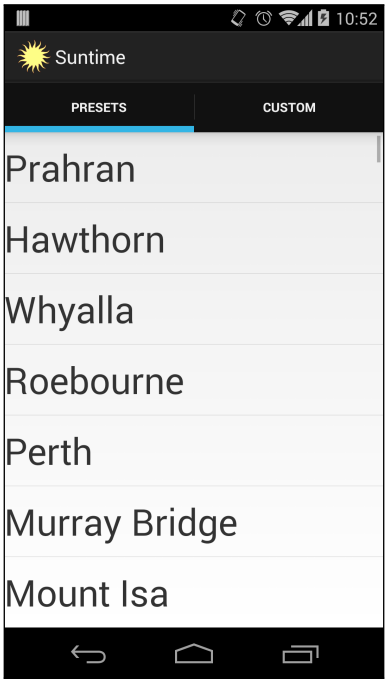
2. Task 2

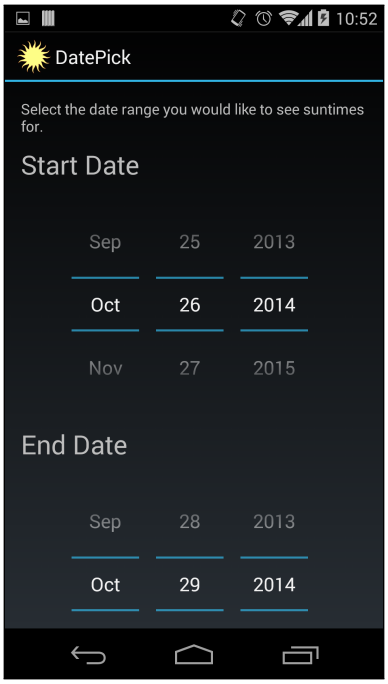
This improved suntime app contains various new features including custom locations using a map, sun rise and set times for a range of dates, and share functionality to send a specific day's sun rise and set times for a location.

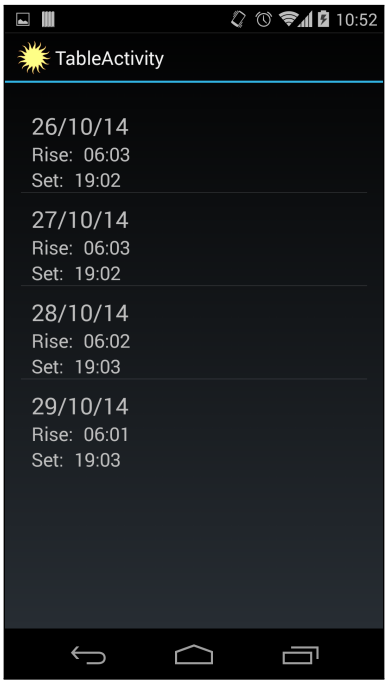
The new app includes the following fragments:

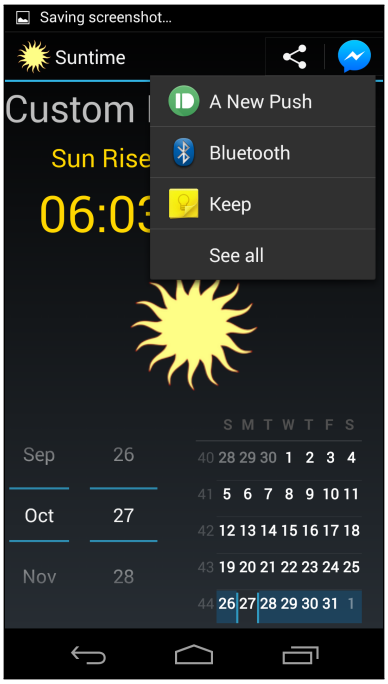
- List of preset locations
- Custom location using map

2.1. Screenshots




10:52
DatePick
Select the date range you would like to see suntimes for.
Start Date
Sep 25 2013
Oct 26 2014
Nov 27 2015
End Date
Sep 28 2013
Oct 29 2014


10:52
TableActivity
26/10/14
Rise: 06:03
Set: 19:02
27/10/14
Rise: 06:03
Set: 19:02
28/10/14
Rise: 06:02
Set: 19:03
29/10/14
Rise: 06:01
Set: 19:03


Saving screenshot...
Suntime
Custom
Sun Rise
06:03
A New Push
Bluetooth
Keep
See all
Sep
Oct
Nov
26
27
28
S M T W T F S
40 28 29 30 1 2 3 4
41 5 6 7 8 9 10 11
42 12 13 14 15 16 17 18
43 19 20 21 22 23 24 25
44 26 27 28 29 30 31 1

2.2. Source

2.2.1. MainActivity

```
@EActivity(R.layout.activity_main)
public class MainActivity extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        ActionBar actionBar = getActionBar();
        actionBar.setNavigationMode(ActionBar.NAVIGATION_MODE_TABS);
        actionBar.setDisplayShowTitleEnabled(true);

        ActionBar.Tab presetsTab = actionBar.newTab()
                                    .setText(R.string.presets)
                                    .setTabListener(new TabListener<LocationsFragment_>(
                                            this, "Presets", LocationsFragment_.class
                                    ));

        actionBar.addTab(presetsTab);

        ActionBar.Tab customTab = actionBar.newTab()
                                    .setText(R.string.custom)
                                    .setTabListener(new TabListener<CustomFragment_>(
                                            this, "Custom", CustomFragment_.class
                                    ));

        actionBar.addTab(customTab);
```

```
}

public static class TabListener<T extends Fragment> implements ActionBar.TabListener {

    private Fragment mFragment = null;
    private final Activity mActivity;
    private final String mTag;
    private final Class<T> mClass;

    public TabListener(Activity activity, String tag, Class<T> clz) {
        mActivity = activity;
        mTag = tag;
        mClass = clz;
    }

    @Override
    public void onTabSelected(ActionBar.Tab tab, FragmentTransaction ft) {
        if (mFragment == null) {
            mFragment = Fragment.instantiate(mActivity, mClass.getName());
            ft.add(android.R.id.content, mFragment, mTag);
        } else {
            ft.attach(mFragment);
            //fragmentTransaction.show(mFragment);
        }
    }

    @Override
    public void onTabUnselected(ActionBar.Tab tab, FragmentTransaction ft) {
        if (mFragment != null) {
            ft.detach(mFragment);
```

```
                //fragmentTransaction.hide(mFragment);
            }
        }

        @Override
        public void onTabReselected(ActionBar.Tab tab, FragmentTransaction ft) {

        }
    }
}
```

2.2.2. CustomFragment

```
@EFragment(R.layout.activity_custom_location)
public class CustomFragment extends Fragment {

    private MapFragment fragment;
    private GoogleMap googleMap;
    private ViewGroup mapContainer;

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {
        mapContainer = container;
        return inflater.inflate(R.layout.activity_custom_location, container, false);
    }

    @Override
    public void onActivityCreated(Bundle savedInstanceState) {
        super.onActivityCreated(savedInstanceState);
        FragmentManager fm = getChildFragmentManager();
```

```
        fragment = (MapFragment)fm.findFragmentById(R.id.map_fragment);
        if (fragment == null) {
            fragment = MapFragment.newInstance();
            fm.beginTransaction().replace(R.id.map_fragment, fragment).commit();
        }
    }

    @Override
    public void onResume() {
        super.onResume();
        if(googleMap == null) {
            googleMap = fragment.getMap();
        }
        googleMap.setMyLocationEnabled(true);
        googleMap.getUiSettings().setMyLocationButtonEnabled(true);
        googleMap.setOnMapClickListener(new GoogleMap.OnMapClickListener() {
            @Override
            public void onMapClick(final LatLng latLng) {
                new AlertDialog.Builder(getActivity())
                    .setTitle("Confirm location")
                    .setMessage("Would you like see suntimes for \n" +
                                "Latitude: " + latLng.latitude + "\n" +
                                "Longitude: " + latLng.longitude + "?")
                    .setPositiveButton(android.R.string.yes, new DialogInterface.OnClickListener(){
                        @Override
                        public void onClick(DialogInterface dialog, int which) {
                            Location location = new Location("Custom Location", latLng.latitude, latLng.longitude, Time
                            Intent intent = new Intent(getActivity(), DatePick_.class );
                            intent.putExtra("location", location);
```

```
                        startActivity(intent);
                    }
                })
                .setNegativeButton(android.R.string.no, new DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        // Do nothing
                    }
                })
                .setIcon(android.R.drawable.ic_dialog_info)
                .show();
            }
        });
    }
}
```