

Team ID	PT2022TMID11856
Project Name	Project - IOT Based Safety Gadget for ChildSafety Monitoring&Notification

CODING & SOLUTIONING

FEATURE 1 (ADDING GEOFENCE)

- ☐ Geofence is like a round wall covering the given location. So parents can use them to mark the location where their children are going.

```

package com.example.geofence;

import android.app.PendingIntent;
import android.content.Context;
import android.content.ContextWrapper;
import android.content.Intent;import android.widget.Toast;
import com.google.android.gms.common.api.ApiException;
import com.google.android.gms.location.Geofence;
import com.google.android.gms.location.GeofenceStatusCodes;
import com.google.android.gms.location.GeofencingRequest;
import com.google.android.gms.maps.model.LatLng;
public class GeofenceHelper extends ContextWrapper {

    private static final String TAG =
    "GeofenceHelper";PendingIntent pendingIntent;

    public GeofenceHelper(Context base) {
        super(base);
    }

    public GeofencingRequest getGeofencingRequest(Geofence
geofence) {return new GeofencingRequest.Builder()
        .addGeofence(geofence)

        .setInitialTrigger(GeofencingRequest.INITIAL_TRIGGER_ENTER)
        .build();
    }
}

```

```

        public Geofence getGeofence(String ID, LatLng latLng, float
radius,int transitionTypes) {
            return new Geofence.Builder()
                .setCircularRegion(latLng.latitude,
latLng.longitude,
radius)

```

```

                .setRequestId(ID)
                .setTransitionTypes(transitionTypes)
                .setLoiteringDelay(5000)
                .setExpirationDuration(Geofence.NEVER_EXPIRE)
                .build();
        }

```

```

        public PendingIntent getPendingIntent() {
            if (pendingIntent != null) {
                return pendingIntent;
            }
            Intent intent = new Intent(this,
GeofenceBroadcastReceiver.class);
            pendingIntent = PendingIntent.getBroadcast(this, 2607, intent,
PendingIntent.FLAG_IMMUTABLE);
            return pendingIntent;
        }

```

```

        public String getErrorString(Exception e) {
            if (e instanceof ApiException) {
                ApiException apiException = (ApiException) e;
                switch (apiException.getStatusCode()) {
                    case GeofenceStatusCodes
                        .GEOFENCE_NOT_AVAILABLE:
                    return "GEOFENCE_NOT_AVAILABLE";
                case GeofenceStatusCodes

```

```

GEOFENCE_NOT_AVAILABLE:
    return "GEOFENCE_NOT_AVAILABLE";
case GeofenceStatusCodes
    .GEOFENCE_TOO_MANY_GEOFENCES:
    return "GEOFENCE_TOO_MANY_GEOFENCES";
case GeofenceStatusCodes
    .GEOFENCE_TOO_MANY_PENDING_INTENTS:
    return "GEOFENCE_TOO_MANY_PENDING_INTENTS";}}

```

7.1 FEATURE 2 (ALERT NOTIFICATION)

- Once geofence is added, when the child enters the geofence a notification will be sent
- When the child leaves the geofence a notification will be sent.

```

package com.example.geofence;

import android.content.BroadcastReceiver;import
android.content.Context;

import android.content.Intent; import android.location.Location;import
android.os.CountDownTimer;import android.util.Log;

import android.widget.Toast;

import com.google.android.gms.location.Geofence;
import com.google.android.gms.location.GeofencingEvent
import java.util.List;

import android.os.Handler;

public class GeofenceBroadcastReceiver extends
BroadcastReceiver {

    private static final String TAG =
"GeofenceBroadcastReceiv";

    @Override

    public void onReceive(Context context, Intent intent) {

        // TODO: This method is called when the

```

```

        BroadcastReceiver is receiving
        // an Intent broadcast

        //.

        /*Toast.makeText(context, "GEOFENCE_ENTERED",
Toast.LENGTH_SHORT).show();

final Toast mToastToShow;
int toastDurationInMilliseconds = 1200000;
mToastToShow = Toast.makeText(context, "GEOFENCE_EXITED",
Toast.LENGTH_LONG);
// Set the countdown to display the toast
        CountdownTimer toastCountDown;
        toastCountDown = new
CountdownTimer(toastDurationInMilliseconds, 100000) {
            public void onTick(long millisUntilFinished) {
                mToastToShow.show();
            }

            public void onFinish() {
                mToastToShow.cancel();
            }
        };
// Show the toast and starts the countdown
        mToastToShow.show();
        toastCountDown.start();*/

```

```

        NotificationHelper notificationHelper = new
        NotificationHelper(context);
        notificationHelper.sendHighPriorityNotification("GEOFENCE_TRANSITION_ENTER",
        "", MapsActivity.class);

```

```

        GeofencingEvent geofencingEvent =
        GeofencingEvent.fromIntent(intent);
        if (geofencingEvent.hasError())

```

```

            Log.d(TAG, "onReceive: Error receiving
            geofence event...");
            return;
        }

```

```

        List<Geofence>
        geofenceList =
        geofencingEvent.getTriggeringGeofences();

        for (Geofence geofence: geofenceList) {
            Log.d(TAG, "onReceive: " + geofence.getRequestId());
        }

        // Location location =
        geofencingEvent.getTriggeringLocation();
        int
        transitionType =
        geofencingEvent.getGeofenceTransition();

        switch (transitionType) {
            case Geofence.GEOFENCE_TRANSITION_ENTER:

                notificationHelper.sendHighPriorityNotification(
                "Entered the Location", "", MapsActivity.class);
                break;

            case Geofence.GEOFENCE_TRANSITION_EXIT:
                notificationHelper.sendHighPriorityNotification("Exited the Location ",
                "", MapsActivity.class);
                break;
        }
    }
}

```