

```
clear
close
clc
```

```
load('SensorLog#3.mat');
LAT = Position.latitude;
LON = Position.longitude;
TIMEposition=Position.Timestamp;
Xacc = Acceleration.X;
Yacc = Acceleration.Y;
Zacc = Acceleration.Z;
TIMEacc=Acceleration.Timestamp;
```

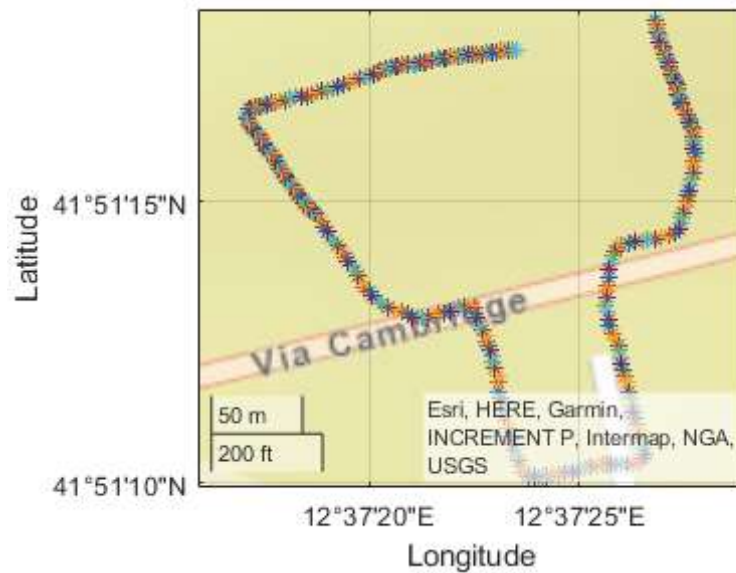
```
%% VARIABLES
step = 0.6; %m
totaldis = 0;
weight = 80;
```

```
for i = 1:(length(LAT)-1)    % Loop through every data sample
    LAT1 = LAT(i);           % Latitude of the iLth sample
    LON1 = LON(i);           % Longitude of the i0th sample
    LAT2 = LAT(i+1);         % Latitude of the (i+1)Ath sample
    LON2 = LON(i+1);         % Latitude of the (i+1)Lth sample
    tx = txsite('Name','MathWorks','Latitude',LAT1,'Longitude',LON1);
    rx = rxsite('Name','Fenway Park','Latitude',LAT2,'Longitude',LON2);

    DIFF = distance(tx,rx,'greatcircle');
    dis = DIFF;
    totaldis = totaldis + dis;
end
totaldis
```

```
totaldis = 787.5137
```

```
for i = 1:(length(LAT)-1)    % Loop for live plot
    geoplot(LAT(i),LON(i),'-*')
    geobasemap streets       % Rappresentation based on geographic grid
    pause(0.1);
    hold on;
end
```



```
i = 0;
av_speed = 0;
inst_speed = Position(TIMEposition,"speed" );
inst_speed = table2array(inst_speed);
for i = 1:1:271
    av_speed = av_speed + inst_speed(i);
end
av_speed = (270 / av_speed) * (1000/60) % Average speed in min/Km
```

```
av_speed = 6.4790
```

```
steps = round(totaldis/step) % Steps taken
```

```
steps = 1313
```

```
kcal = round(steps * 0.0005 * weight) % Burned calories
```

```
kcal = 53
```