```
clear all; clc;
K=3;
                   % revisit period
                    % no of orbits during between two revisits
N = 45;
T=(K/N) *24*3600;
                   % initial guess for time period
n0=2*pi/T;
                    % initial guess for mean motion
we = 1.99106e-7;
mu=398600;
a=((T/2/pi)^2+mu)^(1/3); % initial guess for semi major axis
R=6378.145;
J2=0.00108263;
i=acos(-2/3*(a/R)^2*we/(n0*J2)); % initial guess for inclination
tol=1;
counter=0;
% while tol>0.1
   counter=counter+1
   for counter=1:1
n=deln+n0+odot;
                                         % new mean motion
T=(2*pi/n);
                                         % new time period
a new=((T/2/pi)^2*mu)^(1/3);
                                         % new semi major axis
                                        % new inclination
i=acos(-2/3*(a/R)^2*we/(n0*J2));
tol=abs(a new-a);
a=a new;
n0=n;
 end
h=a-R
ground track(h,i)
                       % plot ground track taking altitude and inclination
```

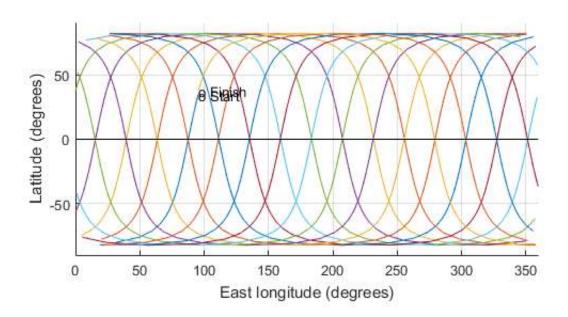
```
h =

572.7831

Angular momentum = 52636.9 km^2/s
Eccentricity = 0
Semimajor axis = 6950.93 km
Perigee radius = 6950.93 km
Apogee radius = 6950.93 km
Period = 1.60204 hours
Inclination = 97.6583 deg
Initial true anomaly = 100 deg
Time since perigee = 0.445011 hours
Initial RA = 270 deg
RA_dot = 0.0655982 deg/period
```

counter =

1



Published with MATLAB® R2016a