README

Files in the zip folder:

1. Partcle filter.m – This is the main file that runs the PF for SLAM. Here the number for the test case can be assigned to the variable n. This m file calls the following functions.
    - Readfiles(n) – This function reads all the data in the folder of my drive.
    - Geteuler – Get the roll, pitch, yaw from the gyro data.
    - Timestamp_sync – synchronizes the times stamps of encoder and gyro.
    - MAPS – gives the output for dead reckoning. (robot's x and y position and heading angle)
    - Getposeupdate – gives the necessary update to be added to the pose to get a new pose. (uses encoder and gyro information)
    - Sampling – samples the particles for the particle filter.
    - Resample – used for resampling of the data.
    - Drawprt – draws the current robot position with time in the map.

2. Other files included in the folder are not used in this implementation, these are the other approaches that I tried.
    - PF – implements a different kind of particle filter(not that great)
    - samplingPF – sampling for the above filter.
    - Grid_map – for dead reckoning.