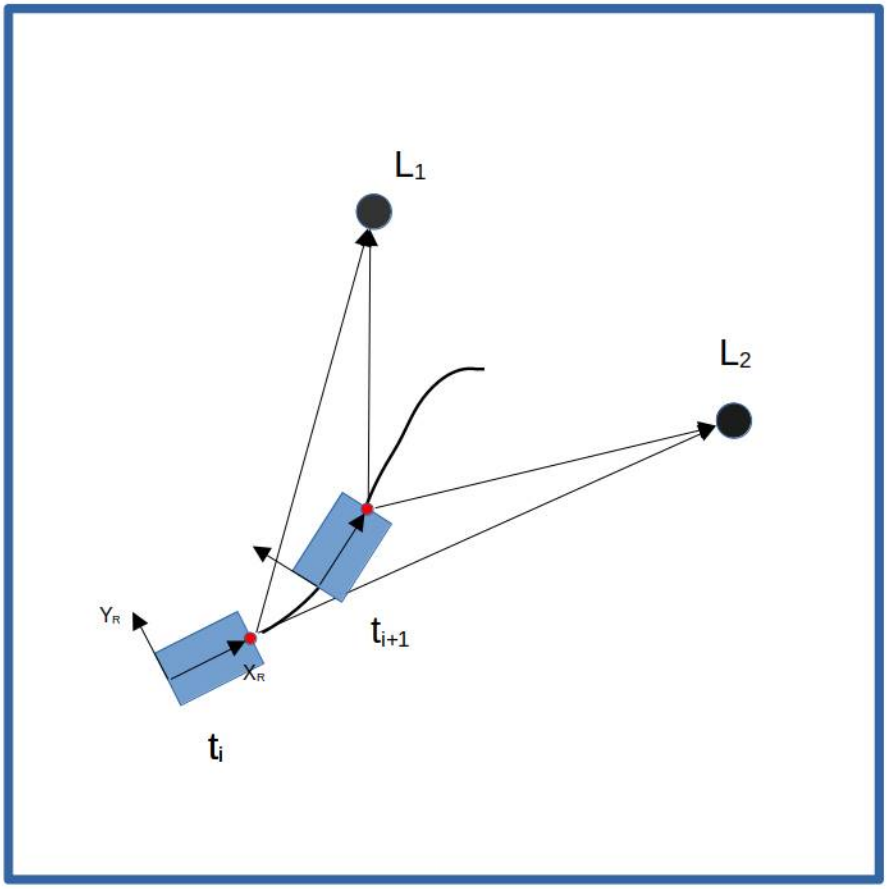
BITS F327
Assignment 2

Submit by 10/12/2022 Total marks 15

1. Make a car [Blue] of a rectangular shape 20x10 in an environment of 200x200 (using matplotlib / plotting library only). Consider a range sensor [Red] is placed at the front center of the car and there are two landmarks [Black] of the shape of a point placed in the environment in random position and orientation.
   a. Use small incremental motion Δx, Δy and Δθ of the car and simulate to move in a path using a polynomial equation. Plot Δx vs time, Δy vs time and Δθ vs time. [2+2+2+2=8]
   b. Use the distance between the sensor and the landmarks as sensor perception and add a variation of N(0, 5) for generating noisy data. [2]
   c. For any two steps of motion use Graph SLAM to estimate the locations of Robot states and landmarks. [5]



1. https://rosettacode.org/wiki/Word_search