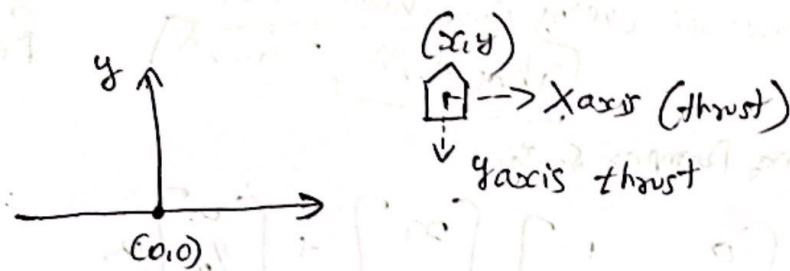


Project Description :-



It is 2D Problem.

Landing point $(0,0)$

Location of the rocket initially (x, y)

Velocity $= (v_x, v_y)$

Objective:- To land as close to the Origin as possible.

It is assumed that the rocket has no mass, no rotation moment. Only ~~com~~ Center of Mass is considered.

Objective function:-

$$S(T) = (x(T), y(T), v_x(T), v_y(T))$$

We should minimize $S(T)$

$$\min_0 \|S(T)\|^2$$

Constraints:- $x(t+1) = x(t) + v_x(t) \Delta t$

$$y(t+1) = y(t) + v_y(t) \Delta t$$

$$v_x(t+1) = v_x(t) + a_x(t) \Delta t$$

$$v_y(t+1) = v_y(t) + a_y(t) \Delta t$$

$$a_x(t+1) = a_p R_x(t) \Delta t$$

$$a_y(t+1) = -g + a_p R_y(t) \Delta t$$