



**Instituto Tecnológico y de Estudios Superiores de Monterrey
Campus Puebla**

Fundamentación Robótica TE3001B Gpo(101)

Actividad 5 (Landmarks)

Alumnos

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Profesores

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Implementar el código requerido para generar el seguimiento de los siguientes waypoints (puntos de referencia), ajustando el tiempo de muestreo: "sampleTime", vector de tiempo: "tVec", pose inicial: "initPose", y los waypoints: "waypoints".

```
%% EXAMPLE: Differential drive vehicle following waypoints using the
% Pure Pursuit algorithm
%
% Copyright 2018-2019 The MathWorks, Inc.

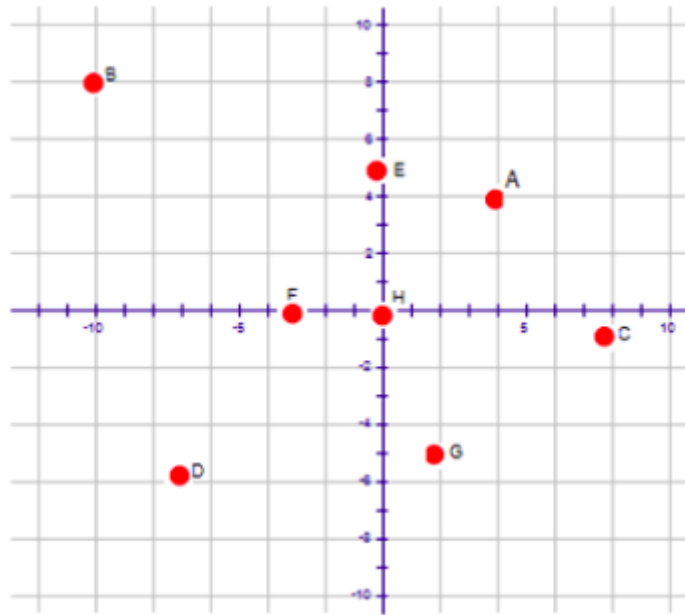
%% Define Vehicle
R = 0.1;           % Wheel radius [m]
L = 0.5;           % Wheelbase [m]
dd = DifferentialDrive(R,L);

%% Simulation parameters
sampleTime = 0.1;   % Sample time [s]
tVec = 0:sampleTime:15; % Time array
initPose = [0;0;0]; % Initial pose (x y theta)
pose = zeros(3,numel(tVec)); % Pose matrix
pose(:,1) = initPose;

% Define waypoints
waypoints = [0,0; 2,2; 4,2; 2,4; 0.5,3];

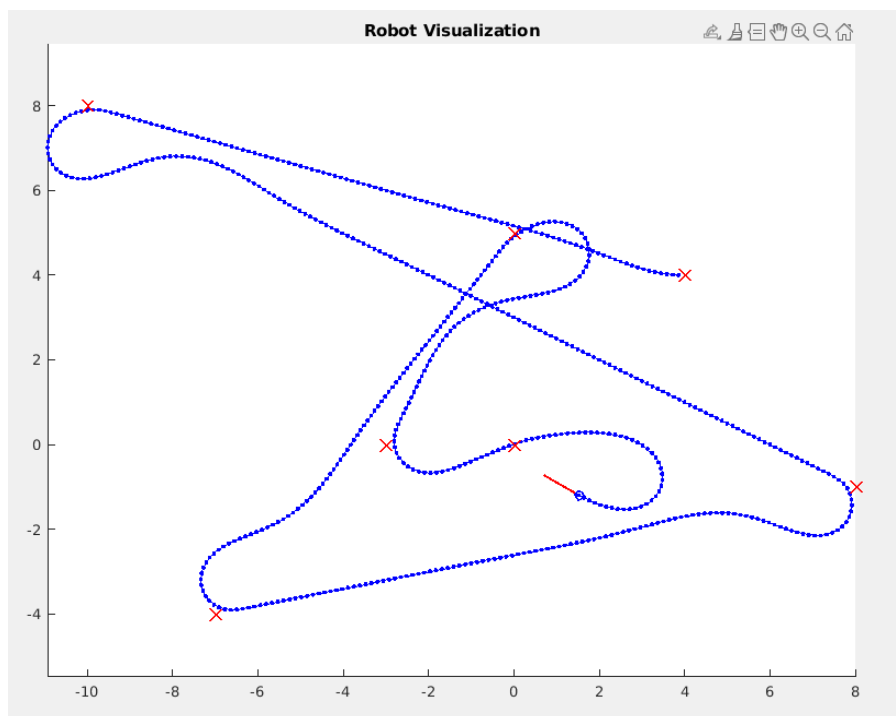
% Create visualizer
viz = Visualizer2D;
viz.hasWaypoints = true;

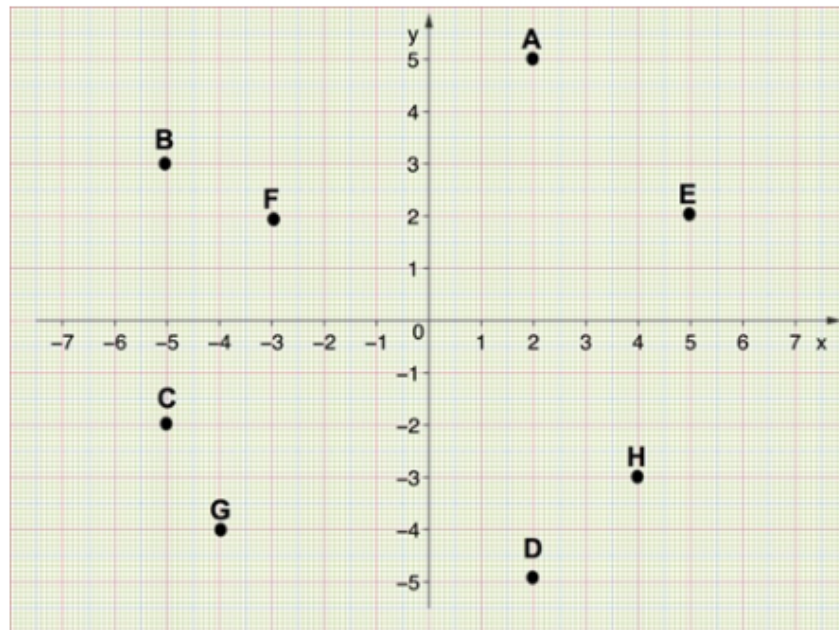
...
```



```
sampleTime = 0.1;           % Sample time [s]
tVec = 0:sampleTime:60;    % Time array
initPose = [4;4;0];        % Initial pose (x y theta)

% Define waypoints
waypoints = [-10,8; 8,-1; -7,-4; 0,5; -3,0; 0,0];
```



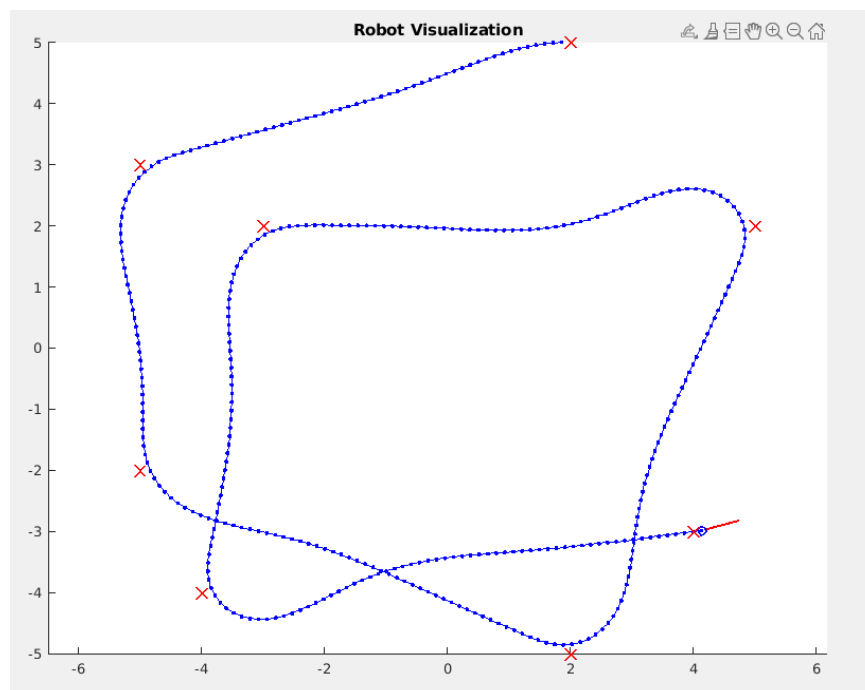


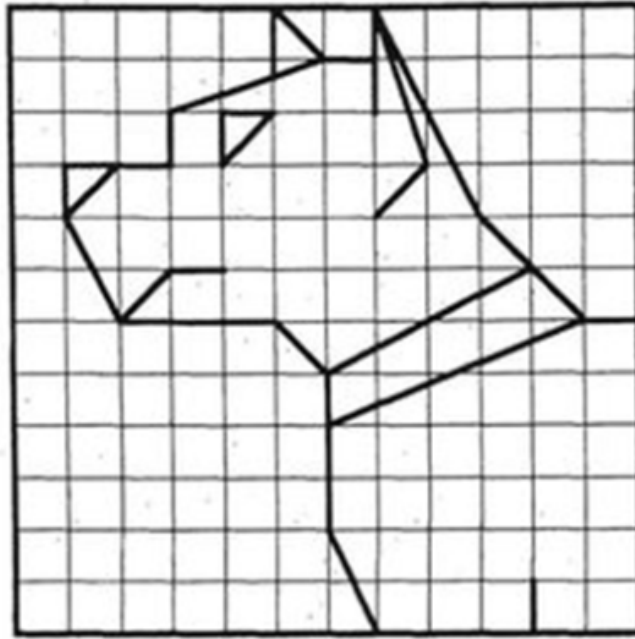
```

sampleTime = 0.1;           % Sample time [s]
tVec = 0:sampleTime:60;     % Time array
initPose = [2;5;0];         % Initial pose (x y theta)

% Define waypoints
waypoints = [2,5; -5,3; -5,-2; 2,-5; 5,2; -3,2; -4,-4; 4,-3];

```



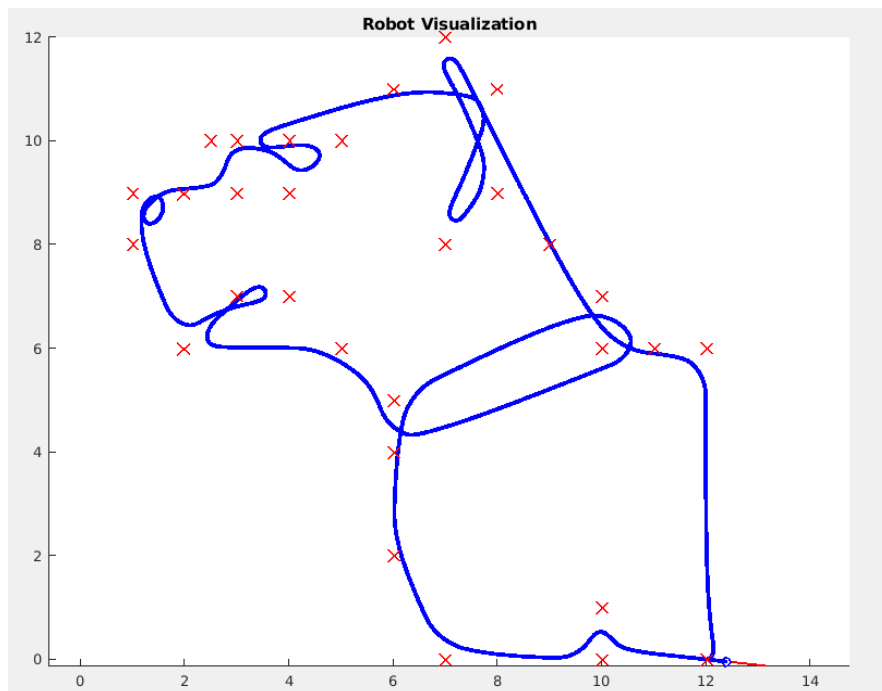


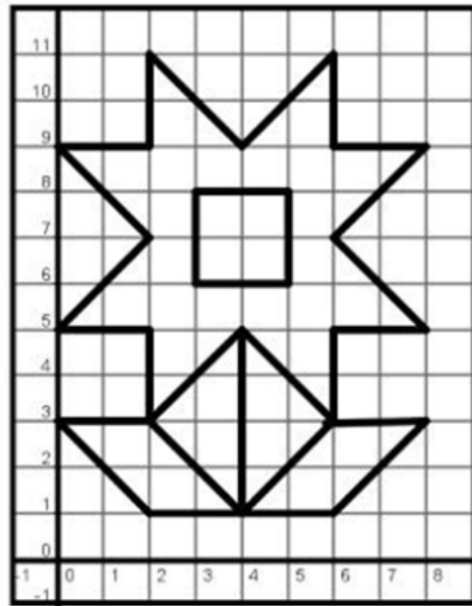
```

sampleTime = 0.1;           % Sample time [s]
tVec = 0:sampleTime:400;    % Time array
initPose = [12;0;0];        % Initial pose (x y theta)

% Define waypoints
waypoints = [12,0; 12,6; 10,6; 9,8; 7,12; 8,9; 7,8; 8,11; 6,11; 3,10;
5,10; 4,9; 4,10; 2.5,10; 3,9; 1,9; 1,8; 2,9; 1,9; 1,8; 2,6; 3,7; 4,7;
3,7; 2,6; 5,6; 6,5; 6,4; 11,6; 10,7; 6, 5; 6,2; 7,0; 10,0; 10,0; 10,1;
10,1; 10,0; 10,0; 12,0];

```



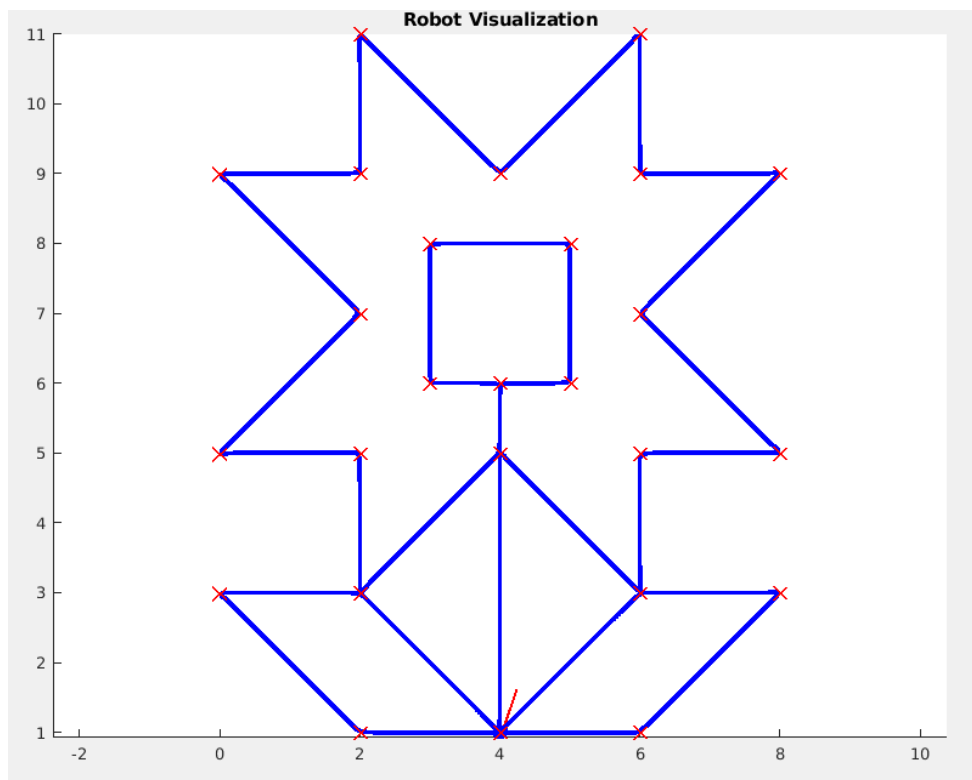


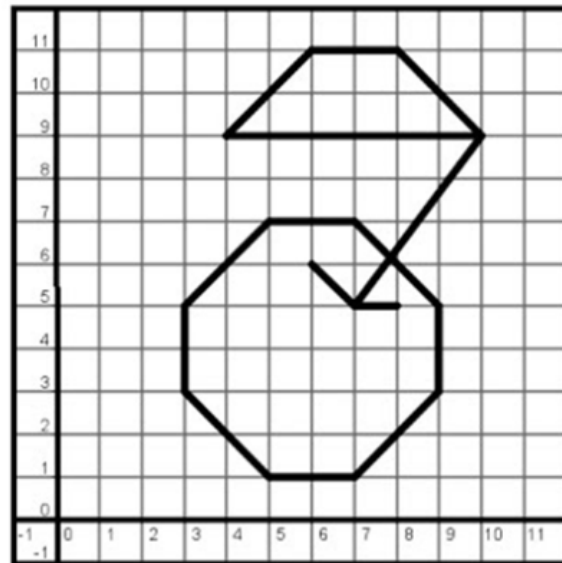
```

sampleTime = 0.1;           % Sample time [s]
tVec = 0:sampleTime:8000;   % Time array
initPose = [4;1;0];         % Initial pose (x y theta)

% Define waypoints
waypoints = [4,1; 6,1; 8,3; 6,3; 4,1; 4,5; 6,3; 6,5; 8,5; 6,7; 8,9; 6,9;
6,11; 4,9; 2,11; 2,9; 0,9; 2,7; 0,5; 2,5; 2,3; 4,5; 4,6; 3,6; 3,8; 5,8;
5,6; 4,6; 4,1; 2,3; 0,3; 2,1; 4,1];

```





```

sampleTime = 0.1;           % Sample time [s]
tVec = 0:sampleTime:400;    % Time array
initPose = [4;1;0];         % Initial pose (x y theta)

% Define waypoints
waypoints = [6,6; 7,5; 10,9; 8,11; 6,11; 4,9; 10,9; 8,6; 7,7; 5,7; 3,5;
3,3; 5,1; 7,1; 9,3; 9,5; 7,7];

```

