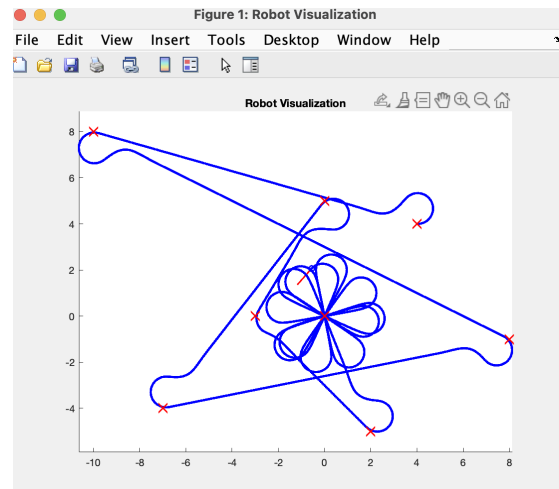
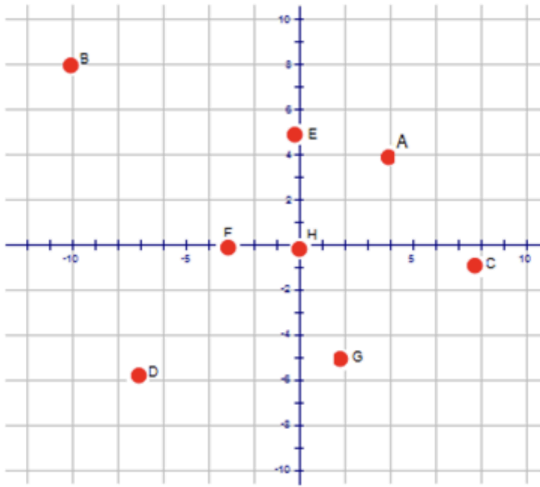
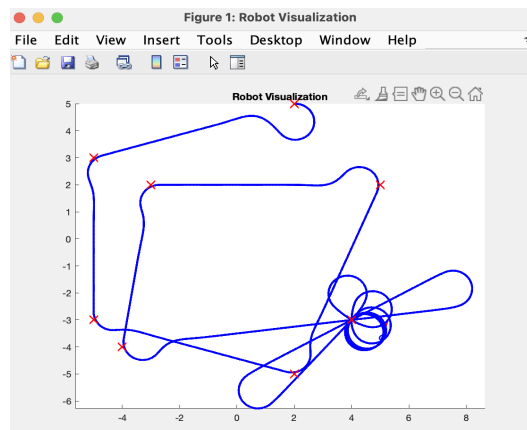
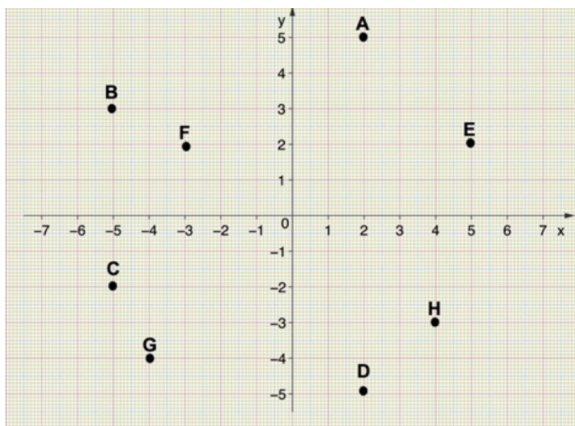


Actividad 1.9 (Landmarks)

Fernando Estrada Silva // A01736094



```
%% Define Vehicle
R = 0.1; % Wheel radius [m]
L = 0.5; % Wheelbase [m]
dd = DifferentialDrive(R,L);
%% Simulation parameters
sampleTime = 0.05; % Sample time [s]
tVec = 0:sampleTime:160; % Time array
initPose = [2;5;0]; % Initial pose (x y theta)
pose = zeros(3,numel(tVec)); % Pose matrix
pose(:,1) = initPose;
% Define waypoints
waypoints = [2,5; -5,3; -5,-3; 2,-5; 5,2; -3,2; -4,-4; 4,-3];
```

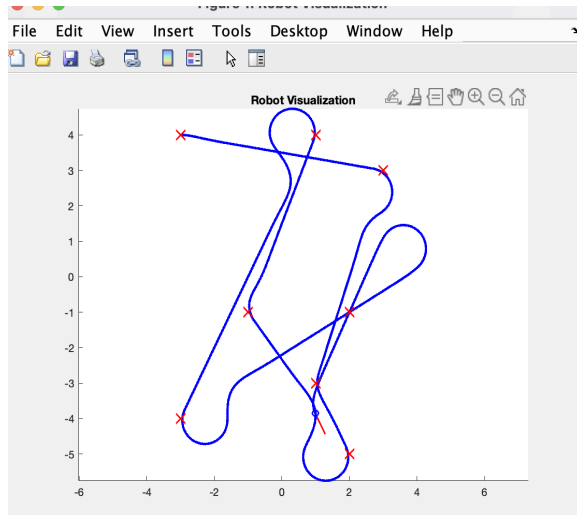
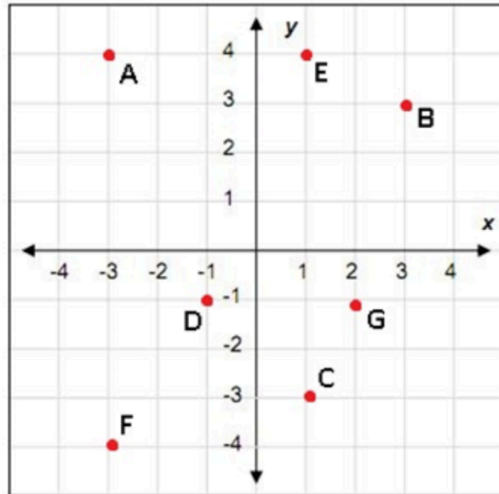


```
%% Define Vehicle
R = 0.1; % Wheel radius [m]
L = 0.5; % Wheelbase [m]
dd = DifferentialDrive(R,L);
%% Simulation parameters
sampleTime = 0.05; % Sample time [s]
```

```

tVec = 0:sampleTime:160;           % Time array
initPose = [2;5;0];                 % Initial pose (x y theta)
pose = zeros(3,numel(tVec));        % Pose matrix
pose(:,1) = initPose;
% Define waypoints
waypoints = [2,5; -5,3; -5,-3; 2,-5; 5,2; -3,2; -4,-4; 4,-3];

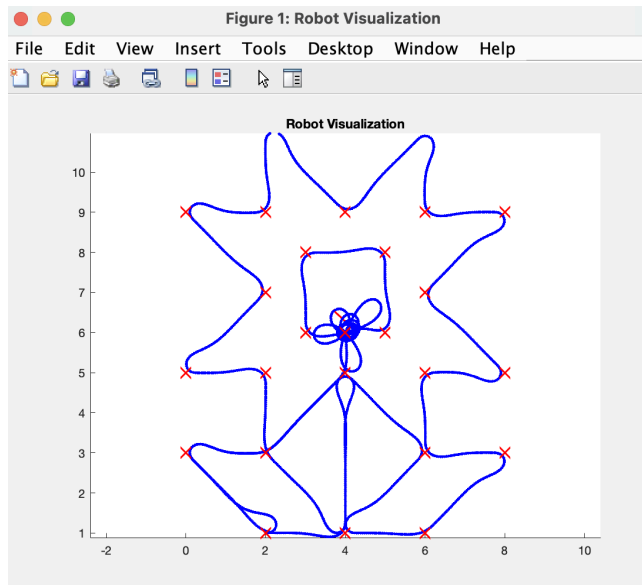
```



```

%% Define Vehicle
R = 0.1;           % Wheel radius [m]
L = 0.5;           % Wheelbase [m]
dd = DifferentialDrive(R,L);
%% Simulation parameters
sampleTime = 0.05; % Sample time [s]
tVec = 0:sampleTime:160; % Time array
initPose = [-3;4;0]; % Initial pose (x y theta)
pose = zeros(3,numel(tVec)); % Pose matrix
pose(:,1) = initPose;
% Define waypoints
waypoints = [-3,4; 3,3; 1,-3; 2,-5; -1,-1; 1,4; -3,-4; 2,-1];

```



```

%% Define Vehicle
R = 0.1;                % Wheel radius [m]
L = 0.5;                % Wheelbase [m]
dd = DifferentialDrive(R,L);
%% Simulation parameters
sampleTime = 0.05;      % Sample time [s]
tVec = 0:sampleTime:160; % Time array
initPose = [2;1;0];     % Initial pose (x y theta)
pose = zeros(3,numel(tVec)); % Pose matrix
pose(:,1) = initPose;
% Define waypoints
waypoints = [2,1; 0,3; 2,3; 4,5; 4,1; 2,3; 2,5; 0,5; 2,7; 0,9; 2,9; 2,11;
4,9; 6,11; 6,9; 8,9; 6,7; 8,5; 6,5; 6,3; 8,3; 6,1; 4,1; 6,3; 4,5; 4,1; 2,1;
0,3; 2,3; 4,5; 4,6; 5,6; 5,8; 3,8; 3,6; 3,6; 4,6];

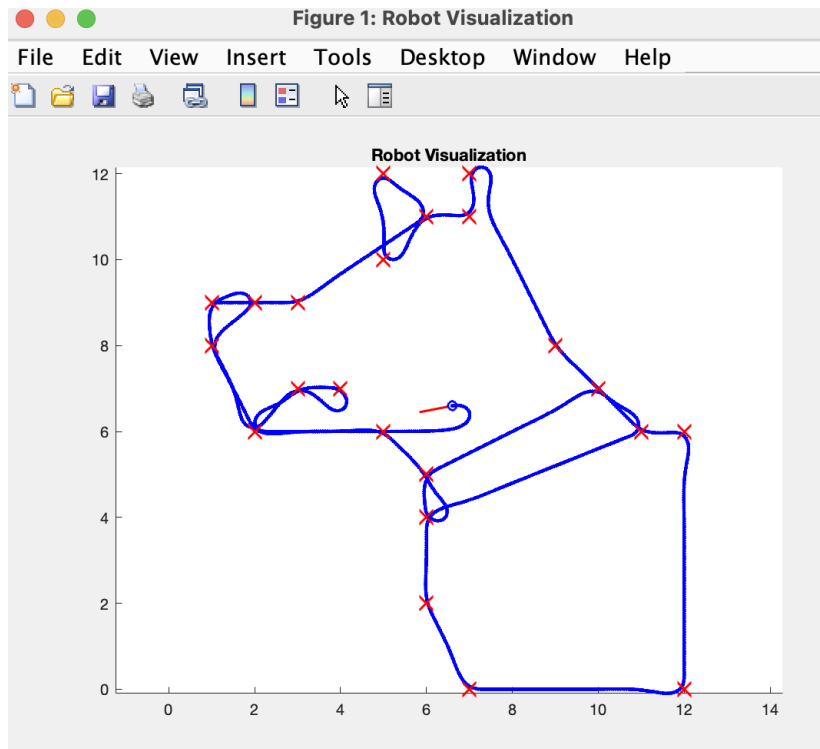
```

Se ajusta la velocidad angular máxima para hacer los giros de la figura más pronunciados

```

controller = controllerPurePursuit;
controller.Waypoints = waypoints;
controller.LookaheadDistance = 0.4;
controller.DesiredLinearVelocity = 1;
controller.MaxAngularVelocity = 5.5;

```

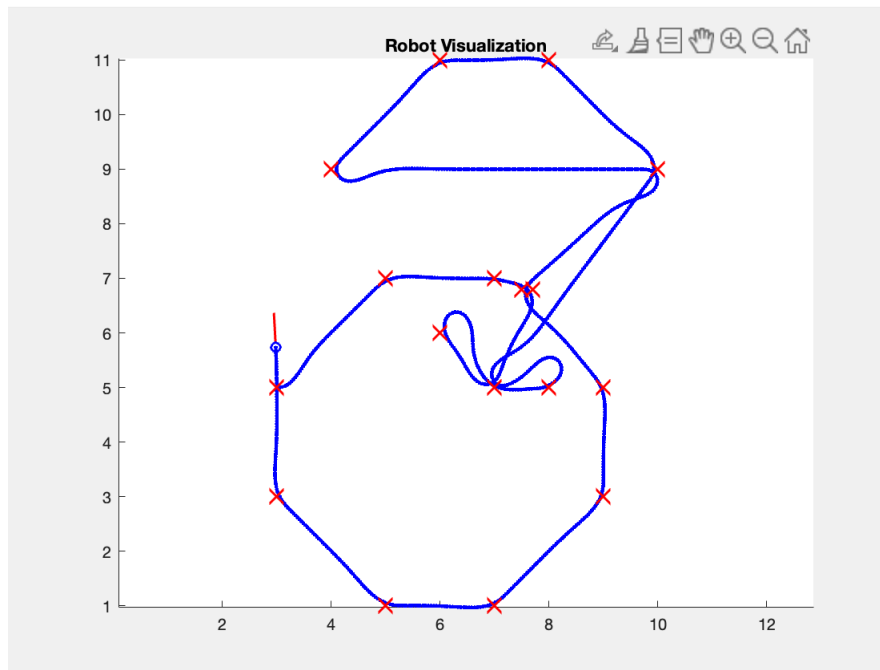


```
%% Define Vehicle
R = 0.1;                % Wheel radius [m]
L = 0.5;                % Wheelbase [m]
dd = DifferentialDrive(R,L);

%% Simulation parameters
sampleTime = 0.05;      % Sample time [s]
tVec = 0:sampleTime:160; % Time array
initPose = [1;9;0];     % Initial pose (x y theta)
pose = zeros(3,numel(tVec)); % Pose matrix
pose(:,1) = initPose;

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

% Create visualizer
viz = Visualizer2D;
```



```
waypoints = [3,5; 5,7; 7,7; 7.7, 6.8; 7,5; 6,6; 7,5; 8,5; 7,5; 10,9; 8,11; 6,11; 4,9; 10,9;
7.5, 6.8; 9,5; 9,3; 7,1; 5,1; 3,3; 3,5];
% Create visualizer
viz = Visualizer2D;
viz.hasWaypoints = true;
%% Pure Pursuit Controller
controller = controllerPurePursuit;
controller.Waypoints = waypoints;
controller.LookaheadDistance = 0.4;
controller.DesiredLinearVelocity = 1;
controller.MaxAngularVelocity = 5.5;
```