

Some OOP Test Scripts

% ShowPoint

% Manipulating Point Objects

close all

figure

plot([-5 5],[0 0],':k',[0 0],[-5 5],':k')

axis square

hold on

% Create a point object and display in red...

P = Point(2,3);

P.Show('r')

% Q references the same Point object as P...

Q = P;

% Obtain a new point object by rotating 60 degrees the point

% referenced by P. Display the new point in green...

R = P.Rotate(60);

R.Show('g')

% Rotate the point referenced by P by -60 degrees. Display in blue...

P.Rotate(-60)

P.Show('b')

% Connect the points referenced by R and Q..

plot([R.x Q.x],[R.y Q.y], 'm')

% ShowPointSet

% Manipulating PointSet Objects

close all

figure

plot([-5 5],[0 0],':k',[0 0],[-5 5],':k')

axis square

hold on

% Create a small PointSet and display in black...

S = PointSet(3,[-4 2 3],[-3 -2 4]);

S.Show('k')

% Create a Point Object to house the centroid of the PointSet referenced

% by S and color it red...

P = S.Centroid();

P.Show('r')

% Add the centroid to the PointSet referenced by S and display in magenta

S.AddPoint(P)

S.Show('m')

% Create and display a random PointSet

T = PointSet(10);

T.Show('c')

`% ShowPointCircle`

```
% Manipulating Point and Circle Objects
```

```
close all
```

```
figure
```

```
plot([-5 5],[0 0],':k',[0 0],[-5 5],':k')
```

```
axis equal square
```

```
hold on
```

```
% Create a point and display it with red..
```

```
P = Point(3,0);
```

```
P.Show('r')
```

```
% Create a new point by rotating the point referenced by P and display
```

```
% it with green...
```

```
Q = P.Rotate(45);
```

```
Q.Show('g')
```

```
% Create a circle and display it with black and its center with magenta..
```

```
C = Circle(-1,-2,2);
```

```
C.Show('k')
```

```
C.center.Show('m')
```

```
hold off
```

`% ShowGraphicsHandles`

```
close all

% Orbit parameters...
a = 5; b = 3; theta = linspace(0,2*pi,361);
x = a*cos(theta); y = b*sin(theta);

% Display the orbit and the planet...
figureHandle = figure;
hold on
orbitHandle = plot(x,y);
planetHandle = plot(x(100),y(100),'.c','Markersize',30);
hold off
axis equal off
shg
pause(3)

% Move and resize the figure window...
set(figureHandle,'position',[400 400 600 400])
pause(2)

% Color it black...
set(figureHandle,'color',[0 0 0])
pause(2)

% Display the orbit in yellow...
set(orbitHandle,'color','yellow')
pause(2)

% Use a thicker line...
set(orbitHandle,'linewidth',2)
pause(2)

% Make the planet disappear for 2 seconds and make it red when it
% reappears..
set(planetHandle,'Visible','off')
pause(2)
set(planetHandle,'color','r')
set(planetHandle,'Visible','on')
```