```
classdef myRectangle
    properties(GetAccess='public',SetAccess='private')

        width;
        height;
        xc;
        yc;
    end

    methods

     function obj = myRectangle(width, height, xc, yc)
            % constructor method to initialize width, height, xc, and yc of the ↙
rectangle
          if (nargin == 2)
                xc = 0;
                yc = 0;
            end
            obj.width = width;
            obj.height = height;
            obj.xc = xc;
            obj.yc = yc;

     end

        function disp(obj)

           x = [obj.xc-obj.width/2, obj.xc+obj.width/2, obj.xc+obj.width/2, obj.xc-obj. ↙
width/2, obj.xc-obj.width/2];
           y = [obj.yc+obj.height/2, obj.yc+obj.height/2, obj.yc-obj.height/2, obj.yc- ↙
obj.height/2, obj.yc+obj.height/2];
           plot(x, y)
        end

        function area(obj)
            area= obj.width*obj.height;
            disp(area);
        end

        function perimeter(obj)
            perimeter = 2*obj.width + 2*obj.height;
            disp(perimeter);
        end

        function state = intersects(obj, obj2)
            x1 = obj.xc - obj.width/2;
            y1 = obj.yc - obj.height/2;
            x2 = obj.xc + obj.width/2;
            y2 = obj.yc + obj.height/2;
```

```
            x3 = obj2.xc - obj2.width/2;
            y3 = obj2.yc - obj2.height/2;
            x4 = obj2.xc + obj2.width/2;
            y4 = obj2.yc + obj2.height/2;
            if x2 < x3 || x1 > x4 || y2 < y3 || y1 > y4
                state = 0;
            else
                state = 1;
            end


        end



    end
end

%% Test code
%for i = 1:5
 %   R(i) = myRectangle(i, 2*i, i, 0);
%end

%A = zeros(5,5);
%for i = 1:5
%    for j = 1:5
%        A(i,j) = R(i).intersects(R(j));
%    end
%end
%A

%A =

     1     1     1     0     0
     1     1     1     1     1
     1     1     1     1     1
     0     1     1     1     1
     0     1     1     1     1
```