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```
function PS07_observatory_ful94(xCamera,yCamera)
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132
% Program Description
% given the position fo camera,check which part of room it is in.
%
% Function Call
% PS07_observatory_ful94(xCamera,yCamera)
%
% Input Arguments
% double xCamera - x coordinate of camera
% double yCamera - y coordinate of camera
%
% Output Arguments
% none
%
% Assignment Information
%   Assignment:      PS 07, Problem 3
%   Author:          Yuefan Fu, ful94@purdue.edu
%   Team ID:         001-05
%   Contributor:     Name, login@purdue [repeat for each]
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

```
%uisng a shorter variable to make test case not too long
x=xCamera;
y=yCamera;

argsObs=[0,0,10];%x,y of center,  diam
argsExh=[-11,11,5,17];%small x, large x,small y, large y
argsOff=[-11,-1,17,23];%small x, large x,small y, large y
argsLob=[-1,11,17,23];%small x, large x,small y, large y
argsVes=[-3,3,4,5];%small x, large x,small y, large y
%1 is lobby,2 is office,3 is exhibithall,4 os observatory, 0 is invalid
```

CALCULATIONS

```
if(x>argsLob(1) && x<argsLob(2) && y>argsLob(3) && y<argsLob(4))
    strOut='in lobby';
elseif(x>argsOff(1) && x<argsOff(2) && y>argsOff(3) && y<argsOff(4))
    strOut='in office';
elseif(x>argsExh(1) && x<argsExh(2) && y>argsExh(3) && y<argsExh(4))
    strOut='in exhibit hall';
elseif(x*x+y*y<argsObs(3)^2/4 || x>argsVes(1) && x<argsVes(2) && y>argsVes(3) && y<argsVes(4))
    strOut='in observatory';
else
    strOut='invalid loction';
end
```

FORMATTED TEXT & FIGURE DISPLAYS

```
fprintf('The camera is at [%.2f,%.2f],which is %s\n',x,y,strOut);
```

The camera is at [0.00,20.00],which is in lobby

The camera is at [-3.00,20.00],which is in office

The camera is at [-3.00,10.00],which is in exhibit hall

The camera is at [-1.00,4.90],which is in observatory

The camera is at [-6.00,0.00],which is invalid loction

COMMAND WINDOW OUTPUT

```
%PS07_observatory_fu194(0,20)
%The camera is at [0.00,20.00],which is in lobby
% PS07_observatory_fu194(-3,20)
%The camera is at [-3.00,20.00],which is in office
%PS07_observatory_fu194(-3,10)
%The camera is at [-3.00,10.00],which is in exhibit hall
%PS07_observatory_fu194(-1,4.9)
%The camera is at [-1.00,4.90],which is in observatory
%PS07_observatory_fu194(-6,0)
%The camera is at [-6.00,0.00],which is invalid loction
```

ACADEMIC INTEGRITY STATEMENT

I/We have not used source code obtained from any other unauthorized source, either modified or unmodified. Neither have I/we provided access to my/our code to another. The project I/we am/are submitting is my/our own original work.

end