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```matlab
function []= PS07_observatory_koike_ipitman(x_coord, y_coord)

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132
% Program Description
% We are an engineering team that is working to install cameras in an
% small museum. We have to meet certain requirements such as: the
% cameras cannot be on the walls, doors, or outside the building.
%
% Function Call
% PS07_observatory_koike_ipitman.m(x_coord, y_coord)
%
% Input Arguments
% 1. x_coord: x coordinates
% 2. y_coord: y coordinates
% Output Arguments
% no outputs
%
% Assignment Information
%   Assignment:   PS 07, Problem 1
%   Team ID:   002-08
%   Paired Partner:  Tomoki Koike, koike@purdue.edu
%   Paired Partner:  Ian Pitman, ipitman@purdue.edu
%   Contributor:  Name, login@purdue [repeat for each]
%   Our contributor(s) helped us:
%     [ ] understand the assignment expectations without
%         telling us how they will approach it.
%     [ ] understand different ways to think about a solution
%         without helping us plan our solution.
%     [ ] think through the meaning of a specific error or
%         bug present in our code without looking at our code.
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

```matlab
% Defining the ranges of the x-coordinates and the y-coordinates
% which designate the rooms of the small museum and the museum itself

% the observatory
observ = (-5<x_coord && x_coord<5)&&(-sqrt(25-x_coord^2)<y_coord &&
 y_coord<sqrt(25-x_coord^2));

% exhibit hall
exbHall = ((-5<x_coord && x_coord<5)&&(1<y_coord && y_coord<9)&&(~(-
sqrt(25-x_coord^2)<=y_coord && y_coord<=sqrt(25-x_coord^2))));

% mechanical room
mechRoom = ((-6<x_coord && x_coord<0)&&(-9<y_coord && y_coord<1)&&(~(-
sqrt(25-x_coord^2)<=y_coord && y_coord<=sqrt(25-x_coord^2))));

% offices
office = ((0<x_coord && x_coord<6)&&(-9<y_coord && y_coord<1)&&(~(-
sqrt(25-x_coord^2)<=y_coord && y_coord<=sqrt(25-x_coord^2))));
```

CALCULATIONS

```matlab
% accesses the location of the surveillence camera and displays the \
% specific location
%Calling function: PS07_observatory_koike_ipitman.m(x_coord, y_coord);

    if observ
        disp('The surveillence camera is in the observatory.');
    elseif exbHall
        disp('The surveillence camera is in the exhibit hall.');
    elseif mechRoom
        disp('The surveillence camera is in the mechanical room.');
    elseif office
        disp('The surveillence camera is in the offices.');
    else
        disp('ERROR! The surveillence camera is in a improper
 location.');
    end
```

The surveillence camera is in the observatory.

FORMATTED TEXT DISPLAYS

```
%x_coord = 0;
%y_coord = 1;
%PS07_observatory_koike_ipitman(x_coord, y_coord)
%The surveillence camera is in the observatory.

%PS07_observatory_koike_ipitman(1, 1)
%The surveillence camera is in the observatory.
```

COMMAND WINDOW OUTPUTS

```
%PS07_observatory_koike_ipitman(0, 0)
%The surveillence camera is in the observatory.

%PS07_observatory_koike_ipitman(0, 5)
%ERROR! The surveillence camera is in a improper location.

%PS07_observatory_koike_ipitman(0, -5)
%ERROR! The surveillence camera is in a improper location.

%PS07_observatory_koike_ipitman(5, 0)
%ERROR! The surveillence camera is in a improper location.

%PS07_observatory_koike_ipitman(-5, 0)
%ERROR! The surveillence camera is in a improper location.

%PS07_observatory_koike_ipitman(2, 8)
%The surveillence camera is in the exhibit hall.

%PS07_observatory_koike_ipitman(5*cos(20), 5*sin(20))
%ERROR! The surveillence camera is in a improper location.

%PS07_observatory_koike_ipitman(-4, -7)
%The surveillence camera is in the mechanical room.

%PS07_observatory_koike_ipitman(1, -7)
%The surveillence camera is in the offices.
```

ACADEMIC INTEGRITY STATEMENT

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