```
function [y vals, x vals, X, delta x, delta y] = Radiator fin MOL(t iter, x iter)
    y 0 = 0;
    y f = pi/16;
    y vals = linspace(y_0, y_f, t_iter);
    beta=10000;
    L = pi/8;
    X = zeros(t iter, x iter);
    x vals = linspace(0,L,x iter);
    X (end, :) = 0;
    X(:,1) = 0;
    X(:,end) = 0;
    X(1,:) = beta*x vals.*(L-x vals);
    K = zeros(4, x iter);
    delta_y = y_vals(2) - y_vals(1);
    delta x = x vals(2) - x vals(1);
    for i = 2 : t iter
       K(1,2:x \text{ iter-1}) = (X(i-1,3:x \text{ iter}) - 2*X(i-1,2:x \text{ iter-1}) + X(i-1,1:x \text{ iter-2})) \checkmark
/delta x^2;
       K(2,2:x iter-1) = ((X(i-1,3:x iter) + (delta y/2)*K(1,3:x iter)) - 2*(X(i-1,2:*)
x iter-1) + (delta y/2) *K(1,2:x iter-1)) + (X(i-1,1:x iter-2) + (delta y/2) *K(1,1:x iter-\checkmark
2)))/delta x^2;
        K(3,2:x iter-1) = ((X(i-1,3:x iter) + (delta y/2)*K(2,3:x iter)) - 2*(X(i-1,2:k'))
x_{iter-1} + (delta_y/2)*K(2,2:x_{iter-1}) + (X(i-1,1:x_{iter-2}) + (delta_y/2)*K(2,1:x_{iter-2})
2)))/delta x^2;
        K(4,2:x iter-1) = ((X(i-1,3:x iter) + (delta y)*K(3,3:x iter)) - 2*(X(i-1,2:\checkmark))
x iter-1) + (delta y)*K(3,2:x iter-1)) + (X(i-1,1:x iter-2) + (delta y)*K(3,1:x iter-2))) \checkmark
/delta x^2;
        X(i,:) = X(i-1,:) + (delta y/6)*(K(1,:) + K(2,:) + K(3,:) + K(4,:));
    end
str = "";
    decide = input(str + "Press enter to exit. Type 1 for Finite Difference Solution", ✓
    switch decide
        case "1"
            % Create meshgrid for surface plot
             [X grid, Y grid] = meshgrid(x vals, y vals(1:80:end)); % Assuming x and y ✔
are 1D vectors
            figure;
            hold on
            h = surf(Y grid, X grid, X(1:80:end,:), "FaceAlpha", 0.25, 'FaceColor', 'b');
            xlabel('y');
            ylabel('x');
```

```
zlabel('Temperature');
  title('2D Heat MOL Solution');
  view(3);
  case isempty(decide)
    return
end
```

end