```
function TEMP_NODE= ADD_LINEAR(NODE_DIST, TREE, NODES, GOAL)


CLOSE_NODE=TREE(NODES,1:2);         %SETS NODE JUST ADDED TO THE CLOSEST NODE
                                    %TO TEST A STRAIGHT PATH FROM IT

%DETERMINES THE DISTANCE TO THE GOAL
GOAL_DIST=((GOAL(1)-CLOSE_NODE(1))^2+(GOAL(2)-CLOSE_NODE(2))^2)^.5;

%CHECK TO SEE IF THE GOAL HAS BEEN REACHED BY COMPARING
%THE DISTANCE TO THE GOAL TO THE NODE DISTANCE
if (GOAL_DIST<=NODE_DIST)

    TEMP_NODE(1:2)=GOAL;
    TEMP_NODE(3)=NODES;


            %TREE((NODES+1), 1:2)=GOAL;
            %TREE((NODES+1),3)=NODES;
            %DONE=1;
            %NODES=NODES+1;

else

    %LOCATION OF TEMPORARY NODE IN THE DIRECTION OF THE GOAL
    TEMP_NODE(1)=CLOSE_NODE(1)+ NODE_DIST*(GOAL(1)-CLOSE_NODE(1))/GOAL_DIST;   %X
    TEMP_NODE(2)=CLOSE_NODE(2)+ NODE_DIST*(GOAL(2)-CLOSE_NODE(2))/GOAL_DIST;   %Y
    TEMP_NODE(3)=NODES;

end


end
```

```
Input argument "NODES" is undefined.

Error in ==> ADD_LINEAR at 5
CLOSE_NODE=TREE(NODES,1:2);         %SETS NODE JUST ADDED TO THE CLOSEST NODE
```

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