**CUT CODE**

/\*Trial\*/

/\* Standardize the dataset \*/

proc standard data=daily\_averages mean=0 std=1 out=daily\_averages\_standardized;

var daily\_avg\_Appliance daily\_avg\_light

daily\_avg\_T1 daily\_avg\_RH\_1 daily\_avg\_T2 daily\_avg\_RH\_2 daily\_avg\_T3

daily\_avg\_RH\_3 daily\_avg\_T4 daily\_avg\_RH\_4 daily\_avg\_T5 daily\_avg\_RH\_5

daily\_avg\_T6 daily\_avg\_RH\_6 daily\_avg\_T7 daily\_avg\_RH\_7 daily\_avg\_T8

daily\_avg\_RH\_8 daily\_avg\_T9 daily\_avg\_RH\_9 daily\_avg\_T\_out daily\_avg\_Press\_mm\_hg

daily\_avg\_RH\_out daily\_avg\_Windspeed daily\_avg\_Visibility daily\_avg\_Tdewpoint

daily\_avg\_rv1 daily\_avg\_rv2;

run;

/\* Transpose the Distance Matrix to a long format \*/

proc transpose data=distance\_matrix out=distance\_long(drop=\_NAME\_);

var Dist1--Dist138;

run;

/\* Rename columns appropriately \*/

data distance\_long;

set distance\_long;

observation = id; /\* Assuming \_N\_ is a suitable identifier \*/

run;

/\* Create unique identifiers for each observation \*/

data distance\_long;

set distance\_long;

length Subject $50; /\* Adjust the length as needed \*/

array var\_names {\*} daily\_avg\_Appliance daily\_avg\_light

daily\_avg\_T1 daily\_avg\_RH\_1 daily\_avg\_T2 daily\_avg\_RH\_2 daily\_avg\_T3

daily\_avg\_RH\_3 daily\_avg\_T4 daily\_avg\_RH\_4 daily\_avg\_T5 daily\_avg\_RH\_5

daily\_avg\_T6 daily\_avg\_RH\_6 daily\_avg\_T7 daily\_avg\_RH\_7 daily\_avg\_T8

daily\_avg\_RH\_8 daily\_avg\_T9 daily\_avg\_RH\_9 daily\_avg\_T\_out daily\_avg\_Press\_mm\_hg

daily\_avg\_RH\_out daily\_avg\_Windspeed daily\_avg\_Visibility daily\_avg\_Tdewpoint

daily\_avg\_rv1 daily\_avg\_rv2;

/\* Loop through variable array to assign identifiers \*/

do i = 1 to dim(var\_names);

if \_N\_ <= i\*n(Dist1) then do;

Subject = vname(var\_names[i]);

leave; /\* Exit loop once identifier is assigned \*/

end;

end;

drop i; /\* Drop loop index \*/

run;

/\* Perform MDS using the reshaped distance matrix \*/

proc mds data=distance\_long out=mds\_out level=ordinal;

id Subject;

var COL1--COL138; /\* Replace N with the appropriate number of variables \*/

label observation = "Subject"; /\* Optional: Label the observation identifier \*/

run;

/\* Scatter Plot of MDS results \*/

proc sgplot data=mds\_out;

scatter x=Dim1 y=Dim2 / datalabel=Subject;

xaxis label='Dimension 1';

yaxis label='Dimension 2';

title 'MDS Plot';

run;

/\* Compute the Distance Matrix \*/

proc distance data=daily\_averages method=euclid out=distance\_matrix;

var interval (daily\_avg\_Appliance daily\_avg\_light

daily\_avg\_T1 daily\_avg\_RH\_1 daily\_avg\_T2 daily\_avg\_RH\_2 daily\_avg\_T3

daily\_avg\_RH\_3 daily\_avg\_T4 daily\_avg\_RH\_4 daily\_avg\_T5 daily\_avg\_RH\_5

daily\_avg\_T6 daily\_avg\_RH\_6 daily\_avg\_T7 daily\_avg\_RH\_7 daily\_avg\_T8

daily\_avg\_RH\_8 daily\_avg\_T9 daily\_avg\_RH\_9 daily\_avg\_T\_out daily\_avg\_Press\_mm\_hg

daily\_avg\_RH\_out daily\_avg\_Windspeed daily\_avg\_Visibility daily\_avg\_Tdewpoint

daily\_avg\_rv1 daily\_avg\_rv2);

run;

/\*Final MDS\*/

/\* Compute the Distance Matrix \*/

proc distance data=energy\_standardized method=euclid out=distance\_matrix;

var interval (Appliances\_num lights\_num T1\_num RH\_1\_num T2\_num RH\_2\_num

T3\_num RH\_3\_num T4\_num RH\_4\_num T5\_num RH\_5\_num T6\_num RH\_6\_num

T7\_num RH\_7\_num T8\_num RH\_8\_num T9\_num RH\_9\_num T\_out\_num

Press\_mm\_hg\_num RH\_out\_num Windspeed\_num Visibility\_num Tdewpoint\_num rv1\_num rv2\_num);

run;

/\* Transpose the Distance Matrix to a long format \*/

proc transpose data=distance\_matrix out=distance\_long(drop=\_NAME\_);

var Dist1--Dist28;

run;

/\* Rename columns appropriately \*/

data distance\_long;

set distance\_long;

observation = id; /\* Assuming \_N\_ is a suitable identifier \*/

run;

/\* Create unique identifiers for each observation \*/

data distance\_long;

set distance\_long;

length Subject $50; /\* Adjust the length as needed \*/

array var\_names {\*} Appliances\_num lights\_num T1\_num RH\_1\_num T2\_num RH\_2\_num

T3\_num RH\_3\_num T4\_num RH\_4\_num T5\_num RH\_5\_num T6\_num RH\_6\_num

T7\_num RH\_7\_num T8\_num RH\_8\_num T9\_num RH\_9\_num T\_out\_num

Press\_mm\_hg\_num RH\_out\_num Windspeed\_num Visibility\_num Tdewpoint\_num rv1\_num rv2\_num;

/\* Loop through variable array to assign identifiers \*/

do i = 1 to dim(var\_names);

if \_N\_ <= i\*n(Dist1) then do;

Subject = vname(var\_names[i]);

leave; /\* Exit loop once identifier is assigned \*/

end;

end;

drop i; /\* Drop loop index \*/

run;

/\* Perform MDS using the reshaped distance matrix \*/

proc mds data=distance\_long out=mds\_out level=ordinal;

id Subject;

var COL1--COL28; /\* Replace N with the appropriate number of variables \*/

label observation = "Subject"; /\* Optional: Label the observation identifier \*/

run;

/\* Scatter Plot of MDS results \*/

proc sgplot data=mds\_out;

scatter x=Dim1 y=Dim2 / datalabel=Subject;

xaxis label='Dimension 1';

yaxis label='Dimension 2';

title 'MDS Plot';

run;