% Example 2: This is program to transfer data from netCDF source file to excel sheet

% Retrieve data for All grid

clear all,clc

format longE

% Step 1 : Display all varaibles in nc file using command: ncdisplay

[filename, path] = uigetfile({'\*.nc';'\*.\*'},'File Selector');

finfo = ncinfo(filename);

var\_name=finfo.Variables;

s1 = var\_name(3).Name;

s2 = 'level';

tf = strcmp(s1,s2);

if tf==1

 n=numel(var\_name);

 for i=1:n

 msl1{i}=ncread(filename,var\_name(i).Name);

 end

 % msl1=double(msl1);

else

 n=numel(var\_name);

 for i=1:n

 msl{i}=ncread(filename,var\_name(i).Name);

 end

 % msl=double(msl);

end

% Step 3 : Read all longitude and latitude for all grid in 2-D (2 dimensional) of array

%long=long(long>=35 & long<=50);

m=numel(msl{1});

n=numel(msl{2});

long=msl{1};

lat=msl{2};

h=0;g=0;

for i=1:n

 for j=1:m

 h=h+1;

 latt(h)=lat(i);

 longg(h)=long(j);

 end

end

latt1=[longg ; latt];

% Step 4 :Convert 3-D array to 2-D array for all

% stations

nn=numel(var\_name);

for k=4:nn

 kk=k-3;

 g=0;

for i=1:n

 for j=1:m

 g=g+1;

 MSL{kk}(:,g)=msl{k}(j,i,:);

 end

end

end

%MSL1=[SST SP MSL TCC U10 T2M D2M LCC MCC HCC LSP CP TP];

% Step 5 :Convert time from netCDF format to Matlab format using its units

% in nc file

finfo.Variables(3).Attributes(1)

time=msl{3};

time=double(time);

AA=time./24+datenum('1900-01-01 0:0:0');

[B,I] = sort(AA);

for k=4:nn

 kk=k-3;

MSL{kk}=MSL{kk}(I,:);

end

%T2M=T2M(I,:);E=E(I,:);TP=TP(I,:);

%E=E(I,:);TP=TP(I,:);

%MMS={T2M E TP};

yy=year(B);mm=month(B);dd=day(B);hh=hour(B);

date1=[yy mm dd hh];

% Step 6:Display data in excel sheet or save data in .mat file

DD={'Year','Month','Day','Hour'};

if nn==4

s3=finfo.Variables(4).Attributes(6);

s4=finfo.Variables(4).Attributes(5);

X01={s3.Value,s4.Value};

X01=cell2mat(X01);

for i=1:n\*m

 X011{i}=X01;

end

XS={X011};

elseif nn==5

s3=finfo.Variables(4).Attributes(6);

s4=finfo.Variables(4).Attributes(5);

s5=finfo.Variables(5).Attributes(6);

s6=finfo.Variables(5).Attributes(5);

X01={s3.Value,s4.Value};

X02={s5.Value,s6.Value};

X01=cell2mat(X01);

X02=cell2mat(X02);

for i=1:n\*m

 X011{i}=X01;

 X022{i}=X02;

end

XS={X011 X022};

elseif nn==6

s3=finfo.Variables(4).Attributes(6);

s4=finfo.Variables(4).Attributes(5);

s5=finfo.Variables(5).Attributes(6);

s6=finfo.Variables(5).Attributes(5);

s7=finfo.Variables(6).Attributes(6);

s8=finfo.Variables(6).Attributes(5);

X01={s3.Value,s4.Value};

X02={s5.Value,s6.Value};

X03={s7.Value,s8.Value};

X01=cell2mat(X01);

X02=cell2mat(X02);

X03=cell2mat(X03);

for i=1:n\*m

 X011{i}=X01;

 X022{i}=X02;

 X033{i}=X03;

end

XS={X011 X022 X033};

elseif nn==7

s3=finfo.Variables(4).Attributes(6);

s4=finfo.Variables(4).Attributes(5);

s5=finfo.Variables(5).Attributes(6);

s6=finfo.Variables(5).Attributes(5);

s7=finfo.Variables(6).Attributes(6);

s8=finfo.Variables(6).Attributes(5);

s9=finfo.Variables(7).Attributes(6);

s10=finfo.Variables(7).Attributes(5);

X01={s3.Value,s4.Value};

X02={s5.Value,s6.Value};

X03={s7.Value,s8.Value};

X04={s9.Value,s10.Value};

X01=cell2mat(X01);

X02=cell2mat(X02);

X03=cell2mat(X03);

X04=cell2mat(X04);

for i=1:n\*m

 X011{i}=X01;

 X022{i}=X02;

 X033{i}=X03;

 X044{i}=X04;

end

XS={X011 X022 X033 X044};

%%%%%%%%%%%%%%%%%%%

elseif nn==8

s3=finfo.Variables(4).Attributes(6);

s4=finfo.Variables(4).Attributes(5);

s5=finfo.Variables(5).Attributes(6);

s6=finfo.Variables(5).Attributes(5);

s7=finfo.Variables(6).Attributes(6);

s8=finfo.Variables(6).Attributes(5);

s9=finfo.Variables(7).Attributes(6);

s10=finfo.Variables(7).Attributes(5);

s11=finfo.Variables(8).Attributes(6);

s12=finfo.Variables(8).Attributes(5);

X01={s3.Value,s4.Value};

X02={s5.Value,s6.Value};

X03={s7.Value,s8.Value};

X04={s9.Value,s10.Value};

X05={s11.Value,s12.Value};

X01=cell2mat(X01);

X02=cell2mat(X02);

X03=cell2mat(X03);

X04=cell2mat(X04);

X05=cell2mat(X05);

for i=1:n\*m

 X011{i}=X01;

 X022{i}=X02;

 X033{i}=X03;

 X044{i}=X04;

 X055{i}=X05;

end

XS={X011 X022 X033 X044 X055};

%%%%%%%%%%%%%%%%%%%

elseif nn==9

s3=finfo.Variables(4).Attributes(6);

s4=finfo.Variables(4).Attributes(5);

s5=finfo.Variables(5).Attributes(6);

s6=finfo.Variables(5).Attributes(5);

s7=finfo.Variables(6).Attributes(6);

s8=finfo.Variables(6).Attributes(5);

s9=finfo.Variables(7).Attributes(6);

s10=finfo.Variables(7).Attributes(5);

s11=finfo.Variables(8).Attributes(6);

s12=finfo.Variables(8).Attributes(5);

s13=finfo.Variables(9).Attributes(6);

s14=finfo.Variables(9).Attributes(5);

X01={s3.Value,s4.Value};

X02={s5.Value,s6.Value};

X03={s7.Value,s8.Value};

X04={s9.Value,s10.Value};

X05={s11.Value,s12.Value};

X06={s13.Value,s14.Value};

X01=cell2mat(X01);

X02=cell2mat(X02);

X03=cell2mat(X03);

X04=cell2mat(X04);

X05=cell2mat(X05);

X06=cell2mat(X06);

for i=1:n\*m

 X011{i}=X01;

 X022{i}=X02;

 X033{i}=X03;

 X044{i}=X04;

 X055{i}=X05;

 X066{i}=X06;

end

XS={X011 X022 X033 X044 X055 X066};

%%%%%%%%%%%%%%%%%%%

end

filename='hourly2014\_2\_m.xlsx';

for i= 4:nn

 kk=i-3;

sheet =kk ;

C={'LOCATION: IRAQ','FROM','TO','Longitude';'DATE','1/1/1985','30/6/2017','Latitude'};

xlswrite(filename,C,sheet,'A1')

xlswrite(filename,DD,sheet,'A3')

xlswrite(filename,latt1,sheet,'E1')

xlswrite(filename,XS{kk},sheet,'E3')

xlswrite(filename,date1,sheet,'A4')

xlswrite(filename,MSL{kk},sheet,'E4')

end

save hourly2014\_2\_m