

(7) MACRO PROCESSING

*** CONDITIONAL PROCESSING;

*** Conditional Elements;**

```
%if <macro expression> %then <action>;  
%else <action>;
```

*** Conditional Statements;**

```
%if <macro expression> %then %do;  
    <statement>;  
%end;  
%else %do;  
    <statement>;  
%end;
```

*** Conditional Where;**

```
proc freq data=<dataset>;  
    where <condition1>;  
    table <var1>;  
%if &<macro_var1>=%str() %then %do;  
    <statement>;  
%end;  
%else %do;  
    where same and <condition2>;  
%end;
```

*** PARAMETER VALIDATION;

*** Parameter Validation (In Operator);**

```
%macro example(place) / minoperator;  
    %if &place in US UK AU ... %then %do;  
        <statement>;  
    %end;  
    %else %do;  
        %put Invalid country;  
    %end;  
%mend;
```

*** Data-Driven Validation (In Operator);**

```
%macro example(place) / minoperator;  
    proc sql noprint;  
        select distinct country into :placelist separated by ' '  
            from countries;  
    quit;  
    %if &place in &placelist %then %do;  
        <statement>;  
    %end;  
    %if not(&place in &placelist) %then %do;  
        %put Invalid country;  
    %end;  
%mend;
```

*** Data-Driven Validation (Index);**

```
%macro example(place) / minoperator;  
    proc sql noprint;  
        select distinct country into :placelist separated by '**'
```

```

        from countries;
quit;
%if %index(*&placelist*,*&place*)>0 %then %do;
    <statement>;
%end;
%else %do;
    %put Invalid country;
%end;
%mend;

*** LOOP PROCESSING;

* Do Loop;

%do i=1 %to 10 %by 2;
    <text_including(&i)>
%end;

%do %while <expression>;
    <text>
%end;

%do %until <expression>;
    <text>
%end;

* Do For Each;

%macro dist_color;
    data
        %let team_list=Red Orange Yellow Green Blue Purple Brown;
        %do i=1 %to 7;
            %let team=%scan(&team_list,&i);
            team_&team
        %end;
    ;
    set teams;
    if team='Red' then output team_red;
        %do i=2 %to 7;
            %let team=%scan(&team_list,&i);
            else if team="&team" then output team_&team;
        %end;
    %mend;
    %dist_color

```