Conditional processing allows programs to "make decisions" based on data values, you perform it with IF-THEN statements:

IF condition THEN action;

- the condition is an expression comparing one thing to another

- the action is what SAS should do when the expression is true, often an assignment statement.

For example

   If gender = 'm' then gender_num = 1;

This statement tells SAS to set the variable gender_num equal to 1 whenever the variable gender equals m.

The terms on either side of the comparison may be constants, variables, or expressions. Those terms are separated by a comparison operator, which may be either symbolic or mnemonic. Here are the basic comparison operators:

Symbolic	Mnemonic	Meaning
=	EQ	equals
¬ =, ^ =, or ~ =	NE	not equal
>	GT	greater than
<	LT	less than
> =	GE	greater than or equal
< =	LE	less than or equal

The IN operator also makes comparisons, but it works a bit differently. IN compares the value of a variable to <u>a list of values</u>. Here is an example:

IF type IN ('apple', 'grape') THEN new_type = 'fruit';

This statement tells SAS to set the variable new_type equal to fruit whenever the value of type is apple or grape.

A single IF-THEN statement can only have one action. If you add the keywords DO and END, then you can execute more than one action. Please see the example below:

```
IF condition THEN DO;              IF AverageScore > 90 THEN DO;

   action;                             grade = 'A';

   action;                             pass = 'pass';

END;                               END;
```

The DO statement causes all SAS statements coming after it to be treated as a unit until a matching END statement appears. Together, the DO statement, the END statement, and all the statements in between are called a DO group.

You can also specify multiple conditions with the keywords AND and OR

IF *condition* AND *condition* THEN *action*;

For example

IF score1 NE . AND score2 NE . AND score3 NE . THEN take = 'complete';

Like the comparison operators, AND and OR may be symbolic or mnemonic:

Symbolic	Mnemonic	Meaning
&	AND	all comparisons must be true
| , ¦ , or !	OR	only one comparison must be true