Macro and Macroprocessor

Macro :- In Assembly language program when some statements are present in more than place. Then Assembly language provide us a feature Macro, which is used in source program in place of repeated statements.

for example :

```
A           1, Data     Add contents of Data to register 1
A           2, Data     Add contents of Data to register 2
A           3, Data     Add contents of Data to register 3
                :
A           1, Data     Add contents of Data to register 1
A           2, Data     Add contents of Data to register 2
A           3, Data     Add contents of Data to register 3
                :

Data   Dc   '5'
                :
```

In the above program the sequence

```
A       1, Data
A       2, Data
A       3, Data
```

occurs twice. A Macro facility permit us to attach a name to this sequence and to use this name in its place.

Creation of Macro.

```
MACRO
INCR
A    1, Dala
A    2, Data
A    3, Dala
MEND
```

MACRO :- Start of definition
INCR :- Name of Macro
MEND :- End of definition of macro.

Use of Macro in above program.

Source	Expanded Source

```
MACRO
INCR
A    1, Rala
A    2, Dala
A    3, Rala
MEND
  :
INCR
  :
  :
INCR
```

Expanded:
```
A    1, Dala
A    2, Data
A    3, Dali
  :
A    1, Ralu
A    2, Rala
A    3, Rali
```

Data De of F 'S'
  :

Macro processor : In Assembly language the macro is process by Macro processor. It is responsibility of Macro processor to replace each macro call with lines present in macro. This process of replacement is called expanding the macro. The definition of macro is saved in macro processor. Any macro call present in program the macro processor search for the definition of macro. If it present. then replace the macro calls with the sequence of lines. this process is called Macro Expansion.

Macro processor maintain a macro Name Table in which it contain the name of macro

Name of macro	Number of Parameters	index
INCR	0	1