

PAPER 102:

PROGRAMMING & PROBLEM SOLVING THROUGH C

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DO-WHILE

GENERAL FORM:

```
do
{
    statements;
    increment/decrement;
}
while(condition expression);
```

OUTPUT??

USING DO-WHILE LOOP

```
main( )  
{  
do  
{  
    printf ( "Hello there \n" ) ;  
} while ( 4 < 1 ) ;  
}
```

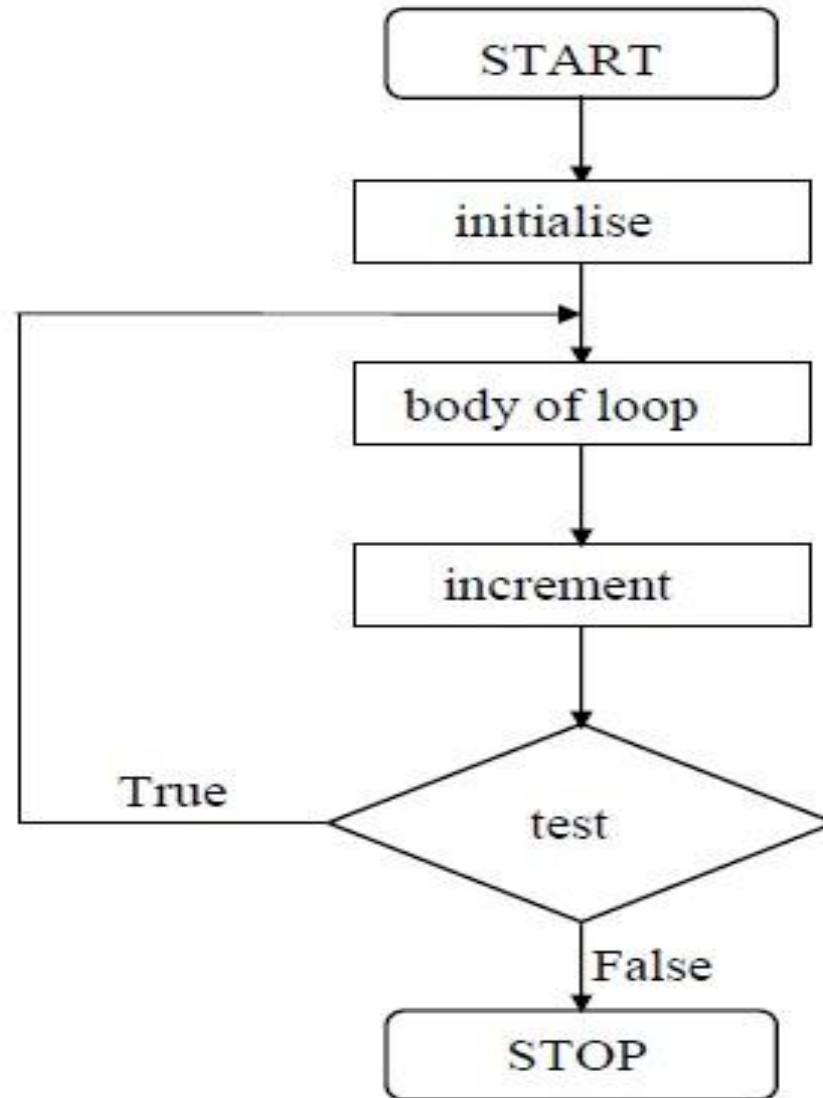
USING WHILE LOOP

```
main( )  
{  
while ( 4 < 1 )  
    printf ( "Hello there \n" ) ;  
}
```

CONTINUED

- The **do-while loop** would execute its statements at least once, even if the condition fails for the first time.
- Difference between WHILE and DO-WHILE
 - The place where the condition is tested.
 - WHILE tests the condition before the execution of the statement/s, but in case of DO-WHILE the condition is tested after execution of statement/s.

FLOWCHART



EXAMPLE

```
/* to sum N numbers */
#include<stdio.h>

void main()
{ int num,n,i=1,sum=0;
printf("Enter how many numbers to sum:");
scanf("%d",&n);

do {
printf("\n Enter the number:");
scanf("%d",&num);

sum=sum+num;
i++;
} while(i<=n);

printf("\n The sum of all the %d numbers
is=%d",n,sum);
}
```

SWITCH-CASE STATEMENT

GENERAL FORM:

```
switch (expression )  
{  
    case constant 1 :  
        do this ;  
    case constant 2 :  
        do this ;  
    default :  
        do this ;  
}
```

CONTINUED

- Switch-Case allows to make a choice from a number of choices.
- The expression following the keyword switch is any expression that can yield an integer constant, or also may hold an integer constant, it can also be a character.

OUTPUT??

```
main( )  
{  
  int i = 2 ;  
  switch ( i )  
  {  
    case 1 :  
      printf ( "I am in case 1 \n" ) ;  
    case 2 :
```

```
      printf ( "I am in case 2 \n" ) ;  
    case 3 :  
      printf ( "I am in case 3 \n" ) ;  
    default :  
      printf ( "I am in default \n" ) ;  
  }  
}
```

EXAMPLE

```
main( )  
{  
  int i = 2 ;  
  switch ( i )  
  {  
    case 1 :  
      printf ( "I am in case 1 \n" ) ;  
      break ;  
    case 2 :
```

```
      printf ( "I am in case 2 \n" ) ;  
      break ;  
    case 3 :  
      printf ( "I am in case 3 \n" ) ;  
      break ;  
    default :  
      printf ( "I am in default \n" ) ;  
  }  
}
```

EXAMPLE

```
void main()
{ char c=„a“;
switch (c)
{
case „a“:
printf(“This is case constant a \n”);
case „e“:
printf(“This is case constant e \n”);
```

```
case „o“:
printf(“This is case constant o \n”);
default:
printf(“This is a default statement \n”);
}
}
```

PROGRAMS

1. Write a program to input a number and count the digits of the number.
2. Write a program that determine if a number entered by the user at run time is an Armstrong number or not.
3. Write a program to compute the series below:
$$1 - 1/2^2 + 1/3^2 - 1/4^2 + \dots$$
4. Write a program to generate Fibonacci series and print their sum and average.
5. Write a program to generate all the prime numbers till N.