

VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)

(Affiliated to Osmania University)

Ibrahimabagh - Hyderabad - 31.

Academic Year 2021-22

Name of the Laboratory : PPSLAB

Department : CSE

Hall Ticket No. : 1602-21-733-052

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LINUX COMMANDS:

1. cd : change a directory.

Syntax: cd directory name

eg: cd ppslab

2. mkdir: To create a directory.

Syntax: mkdir ppslab/directory name

eg: mkdir ppslab.c

3. rmdir: To remove a directory.

Syntax: rmdir directory name

eg: rmdir week1.c

4. ls: To list the directories present in the given directory

Syntax: ls

eg: it displays all the files in the directory

5. dir: represents a directory stream; differentiates the colours.

Syntax: c:\>dir

eg: displays the sub-directories with files & directories in diff. colors.

6. cd \: goes to home directory.

Syntax: cd \

eg: goes to home directory

7. cd .. : goes to previous directory.

Syntax: cd ..

eg: goes to previous directory

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8. cp: Used to copy files or group of files .

Syntax: cp source-destination

eg: cp ppslab.c

9. mv: to move file from one directory to another.

Syntax: mv filename newdirectory.

eg: mv week2.c ppslab1

10. vi: text editor where we are allowed to write the program.

Syntax: vi testfile.dat

eg: vi programs.c

11. pwd: It displays the current working directory.

Syntax: pwd

eg: it displays current directory

12. cat: command used to create files .

Syntax: cat filename.extension .

eg: cat test.dat .



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WEEK-1: PRELAB - QUESTIONS:1-

1) Define Flowchart. List few symbols used in flowchart.

A: Flowchart is a diagrammatic representation of a sequence of logical steps of a program.

* Symbols used in flowchart:

1) → Terminal

2) → calculation / assignment.

3) → Read/write

4) → Decision / to check certain condition

5) → Flow lines

6) → Compound Statements

7) → Module / Procedure call.

8) → Connector.

2) What is an algorithm?

A: Algorithm is a step-by-step procedure; which defines a set of instructions to be executed in a certain order; to get a desired output.

3) What is a compiler?

A: Compiler is a computer software that converts the program written in high-level language into a set of instructions.

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in machine language.

- 4) Mention the rules for writing the name of an identifier.
- A: 1) Names can have alphabet, digits and underscore only.
2) First character should be an alphabet or underscore.
3) Whitespaces are not allowed.
4) Keywords cannot be used as identifier names.
5) Names are Case-Sensitive
6) Usually the length should be as small as 8 characters.
7) Name should be meaningful.
- 5) Define variable. Give an example:

A: A variable is any number or quantity that can be measured or counted. It is also called a data item.

Eg: age, class, grades etc.

A variable in 'C' programming is an identifier which is used to store a value.

Eg: int, float, char and void.

- 6) What is a comment? Explain different types of comments in 'C'.

A: Comment is a programmer-readable explanation or annotation in the ~~source code~~.

There are ~~2 types~~ of comments:

* SINGLE-LINE COMMENTS:

These are represented by double slash //.

→ Example:

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```
#include <stdio.h>
int main()
{
    printf("HelloC"); // printing information
    return 0;
}
```

* MULTILINE COMMENTS:

These are represented by slash and asterisk /* ----- */

Example:

```
#include <stdio.h>
int main()
{
    /* printing information
       Multi-line comment */
    printf("HelloC");
    return 0;
}
```

7) List data-types along with their sizes.

<u>DATA TYPES:</u>	<u>32 bit</u>	<u>64 bit</u>
char	1	1
short	2	2
int	4	4

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long int	4	8	
long long int	8	8	
float	4	4	
double	8	8	
long double	10	10	

8) What is the purpose of including header files in your programs?

A: A header file is a file containing 'C' declarations & macro definitions to be shared between source files.
Header files serve 2 purposes.

1) System header files declare the interface to parts of the operating system you include them in your program to supply the definition and you need to invoke calls & libraries.

9) Enumerate and Explain different stages in which a source file in 'C' is converted to an executable file.
Four steps: pre-processing, compiling, assembly, linking.

Pre-processing: It is the first step; the pre-processor obeys commands that begin with # by.

If we include a header file such as #include <stdio.h> it will look for the stdio.h file and copy the header file into the source code file.

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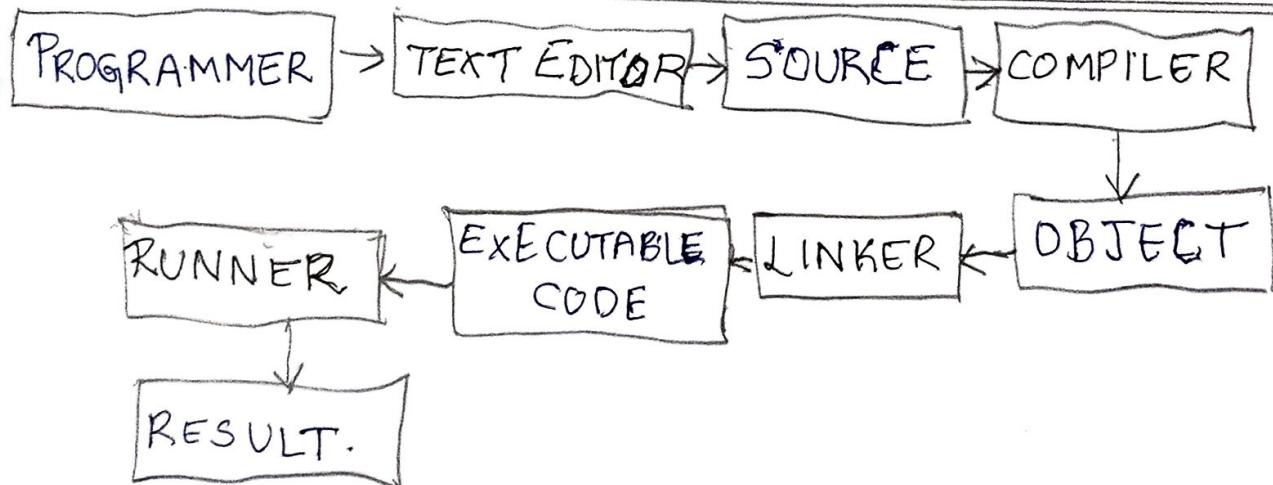
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Compiling: It is the second step. It takes the output of the pre-processor & generates assembly language, an intermediate human readable language specific to the target processor.

Assembly: It is the third step. The assembler will convert the assembly code into pure binary code.

Linking: It is the final step. The linker merges all the object code from multiple modules into a single one.



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→ AIM: Program to illustrate the basic syntax of C-Programs.
DISPLAY THE MESSAGE: "Hello World": WEEK-1

→ PROBLEM STATEMENT:

Write a program to display the message "Hello World".

→ ALGORITHM:

- 1) Start
- 2) Read the message "Hello World".
- 3) Print the message "Hello World".
- 4) Stop

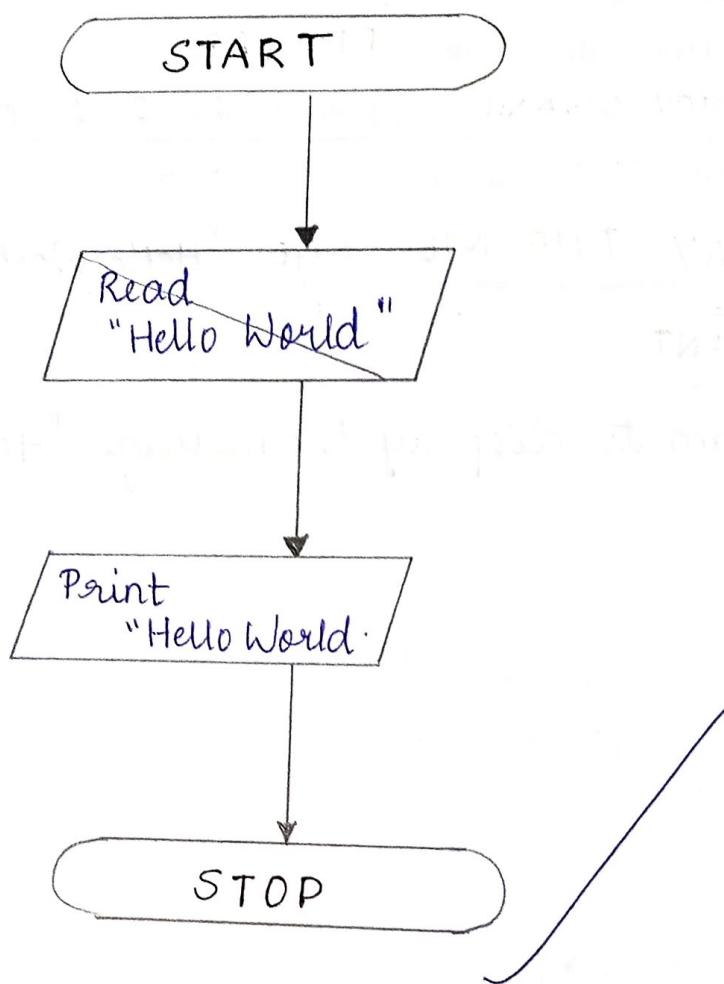
→ PROGRAM:

```
/* Print Hello World */  
#include <stdio.h>  
int main ( )  
{  
    printf ("HelloWorld");  
    return 0 ;  
}
```

→ INPUT/OUTPUT: : Wq ↴

```
⇒ gcc hello.c  
⇒ ./a.out
```

FLOW CHART: Print message "Hello World"



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* OUTPUT:

HELLO World

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→ AIM: Program to illustrate the syntax of 'C' program.

PRINT A PATTERN (* * * * *) WEEK-1

→ PROBLEM STATEMENT:

Write a 'c' program to print the pattern:

[* * * * *
* * * * *
* * * * *]

→ ALGORITHM:

1) Start

2) Read the pattern

3) Print the pattern :

[* * * * *
* * * * *
* * * * *]

4) Stop

→ PROGRAM:

/* Print Pattern */

#include <stdio.h>

int main ()

{

printf("*****\n");

printf("*****\n");

printf("*****\n");

return 0;

}

→ INPUT/OUTPUT: : wq ↴

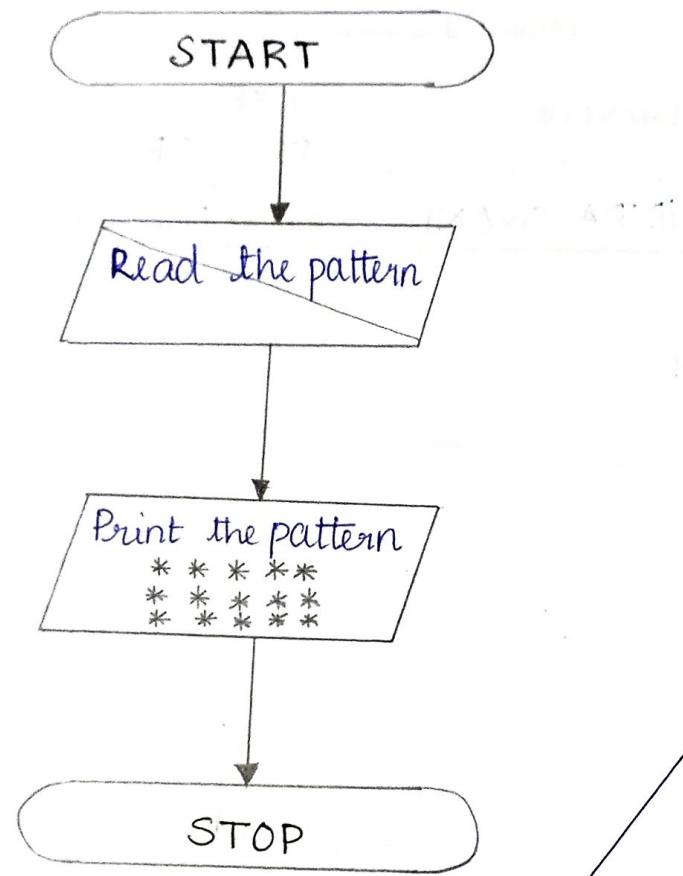
⇒ gcc pattern.c

⇒ ./a.out

⇒ OUTPUT:

[* * * * *
* * * * *
* * * * *]

FLOW CHART: Print the given Pattern.



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→ AIM: Program to illustrate the use of different commands.

ADDING TWO NUMBERS:

WEEK-1

→ PROBLEM STATEMENT:

Write a 'c' program to add the given 2 numbers:

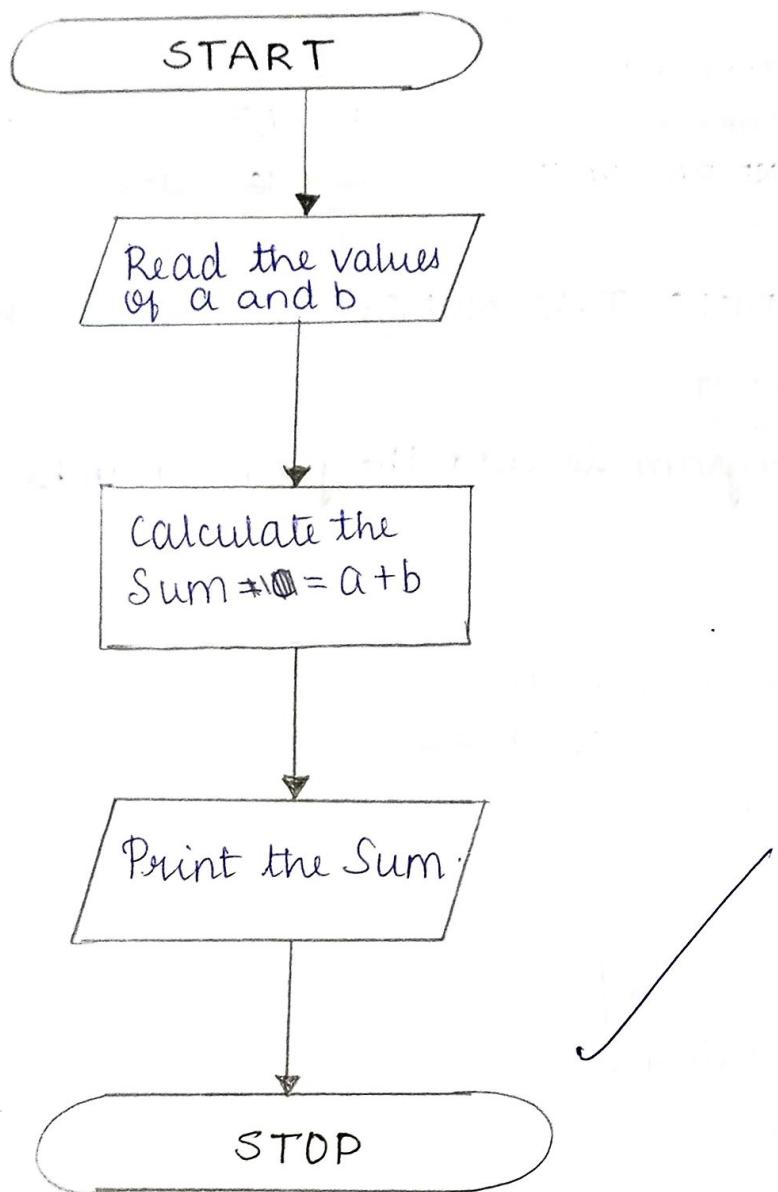
→ ALGORITHM:

- 1) Start.
- 2) Read the values of a & b.
- 3) Calculate the sum = $a+b$.
- 4) Print the sum (c)
- 5) Stop.

→ PROGRAM:

```
* Print the Sum */  
#include <stdio.h>  
int main ()  
{  
    int a, b, c;  
    printf ("enter the values of a&b\n");  
    scanf ("%d, %d", &a, &b);  
    c = a+b;  
    printf ("sum=%d", c);  
    return 0;  
}
```

FLOW CHART: Adding the given 2 numbers:



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→ INPUT/OUTPUT : :wq ↵

gcc sum.c

./a.out

• OUTPUT:

enter the values of a & b:

7

6

sum ~~b~~ = 13.

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→ AIM: To illustrate the use of 'printf' tag in C-program.

DISPLAY YOUR BIO-DATA

WEEK-1

→ PROBLEM STATEMENT:

Write a program to print name; date of birth and mobile number.

→ ALGORITHM:

1) Start

2) Read the name, date of birth and mobile number.

3) Print "Name: K.Sivani"

Date of Birth: 07/01/2004

Mobile Number: 9391616262".

4) Stop.

→ PROGRAM:

```
/* Print the Bio-Data */
```

```
#include <stdio.h>
```

```
int main ( )
```

```
{
```

```
    printf("Name: K.Sivani\n");
```

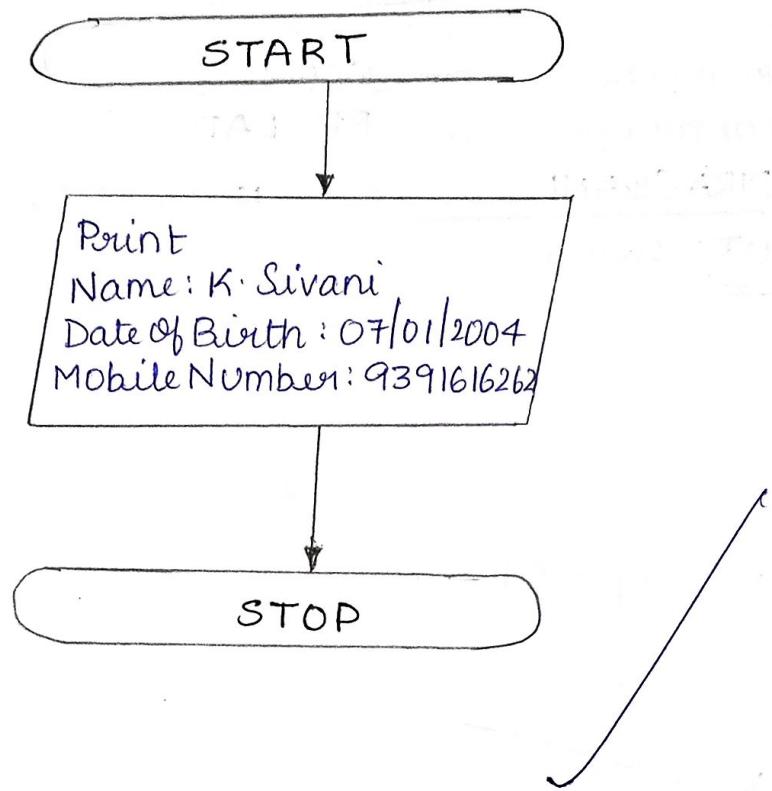
```
    printf("Date of Birth: 07/01/2004\n");
```

```
    printf("Mobile No.: 9391616262");
```

```
    return 0;
```

```
}
```

FLOW CHART: Display Bio-Data



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→ INPUT/OUTPUT : wq ↴

gcc biodata.c
./a.out

OUTPUT:

Name: K.Sivani
Date of Birth: 07/01/2004
Mobile No: 9391616262

7/7/2

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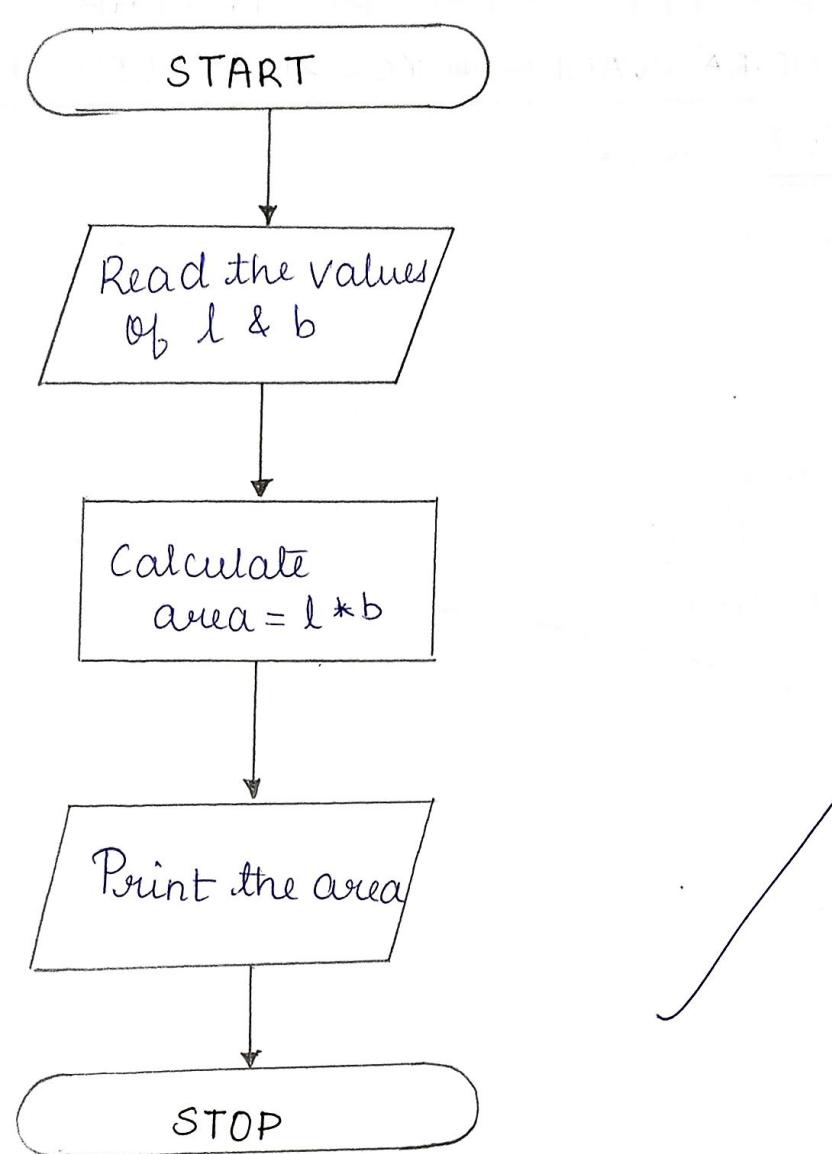
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- AIM: Program to illustrate the use of operators
AREA OF CC LAB-2 WEEK-1
- PROBLEM STATEMENT:
Write a program to find the area of cc lab-2 with
 $l=22\text{m}$ and $b=21\text{m}$.
- ALGORITHM:
- 1) Start
 - 2) Read the values of 'l' and 'b'.
 - 3) Calculate the area = $l * b$.
 - 4) Print the area.
 - 5) Stop.
- PROGRAM:
- ```
/* Print Area */
#include<stdio.h>
int main ()
{
 int l;
 int b;
 int A;
 printf("Enter the values of l & b ");
 scanf("%d,%d", &l, &b);
 A = l * b;
 printf("area = %d", A);
```

FLOWCHART: Area of CC Lab-2.



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return 0;

}

→ INPUT/OUTPUT: :wq↓

⇒ gcc area-lab.c

⇒ ./a.out

OUTPUT:

Enter the values of l & b :

22

21

area = 462.

462

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→ AIM: Program to illustrate the use of different datatypes

DISPLAY AREA OF CIRCLE: WEEK-1

→ PROBLEM STATEMENT:

Write a program to find the area of a circle.

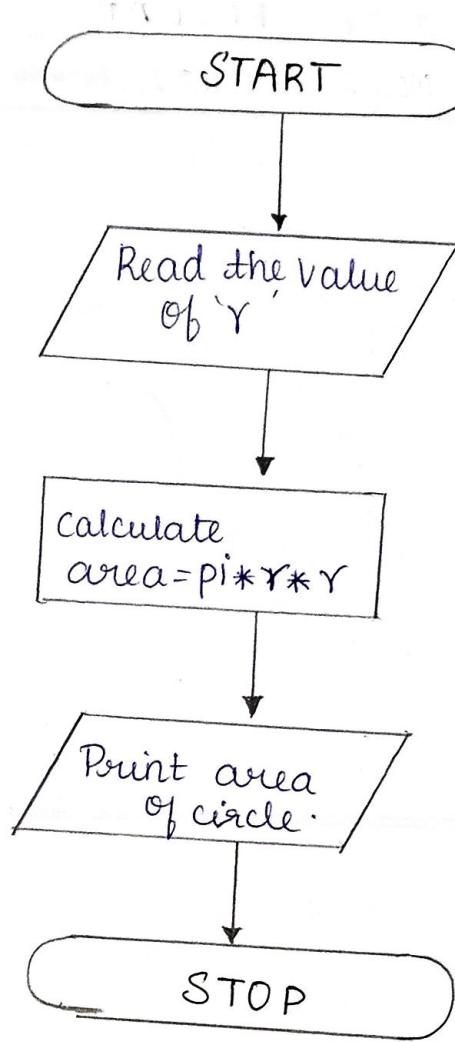
→ ALGORITHM:

- 1) Start.
- 2) Read the value of 'r'
- 3) Calculate the area of circle =  $\pi * r * r$
- 4) Print the area of circle.
- 5) Stop.

→ PROGRAM:

```
/* Print Area of Circle */
#include <stdio.h>
int main ()
{
 int r;
 float A;
 float pi;
 printf(" enter the values of 'r' ");
 scanf ("%d %f", &r, &pi);
 A = pi * r * r;
 printf (" area = %f ", A);
```

## FLOWCHART: Area of Circle



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return 0;

}

→ INPUT/ OUTPUT: :wq ↵

⇒ gcc area-circle.c

⇒ ./a.out

OUTPUT:

enter the values of r:

4

3.14

area = 50.24

PF 5/11/2024