SNS COLLEGE OF TECHNOLOGY

Coimbatore – 35
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DEPARTMENT OF INFORMATION TECHNOLOGY

23ITT101 – PROGRAMMING IN C & DATA STRUCTURES
I YEAR - II SEM

UNIT I – INTRODUCTION TO C

# STRUCTURE OF C PROGRAM

STRUCTURE OF A C PROGRAM

Structure of a C program

Basically the structure of a C program divides into 6 sections and they are,

01 Documentation

02 Preprocessor

03 Definition

04 Global declaration

05 Main function

06 User defined functions

Documentation Section

- ✓ It includes the statement specified at the beginning of a program, such as a program's **name, date, description,** and **title**, which is represented using commands

- ✓ Single line commands will be represented by //

- ✓ Multi – line commands will be represented as /* ……. */

```
//program1.c
```

```
/*
…
Overview of code
…
*/
```

Preprocessor Section

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

Preprocessor Section (contd..)

✓ The preprocessor section contains all the header files used in a program. It informs the system to link the header files to the system libraries

✓ A header file in C/C++ contains:

   i) Function definitions   ii) Data type definitions   iii) Macros

✓ Header files offer these features by importing them into your program with the help of a preprocessor directive called **#include.**

✓ These preprocessor directives are responsible for instructing the C/C++ compiler that these files need to be processed before compilation.

Contd....

✓ Every C program should necessarily contain the header file **<stdio.h>** which stands for standard input and output used to take input with the help of **scanf() function** and display the output using **printf() function**.

✓ The source file contains #include which is responsible for directing the C/C++ compiler that this file needs to be processed before compilation and includes all the necessary data type and function definitions

Define Section

? The define section comprises of different constants declared using the define keyword

```
#define a = 4
```

Global declaration

? The global section comprises of all the global declarations in the program.

? Anything which is declared as global can be used throughout the entire program

? It should be declared before the main function

Main function

? main() is the first function to be executed by the computer.

? It is necessary for a code to include the main(). It is like any other function available in the C library.

? Parenthesis () are used for passing parameters (if any) to a function.

Declaration of main( )

main( ) function can be declared in three ways

- ✍ main( )
- ✍ void main( ) ~ specifies that program will not return any value
- ✍ int main( )   ~ specifies that program can return integer type data

```
main()
{
int i = 2;
if(i<5)
{
i++;
}
}
```

Local Declarations

Statements

Expressions

User defined functions

- The user defined functions specified the functions specified as per the requirements of the user.

- For example, color( ), sum( ), division( ), etc.

Basic Syntax

```
#include<stdio.h> //(Header Files)

main( )              //(Main function)

{

// Statements to be executed;

}
```

Editor and file creation

Editor used: Turbo C++
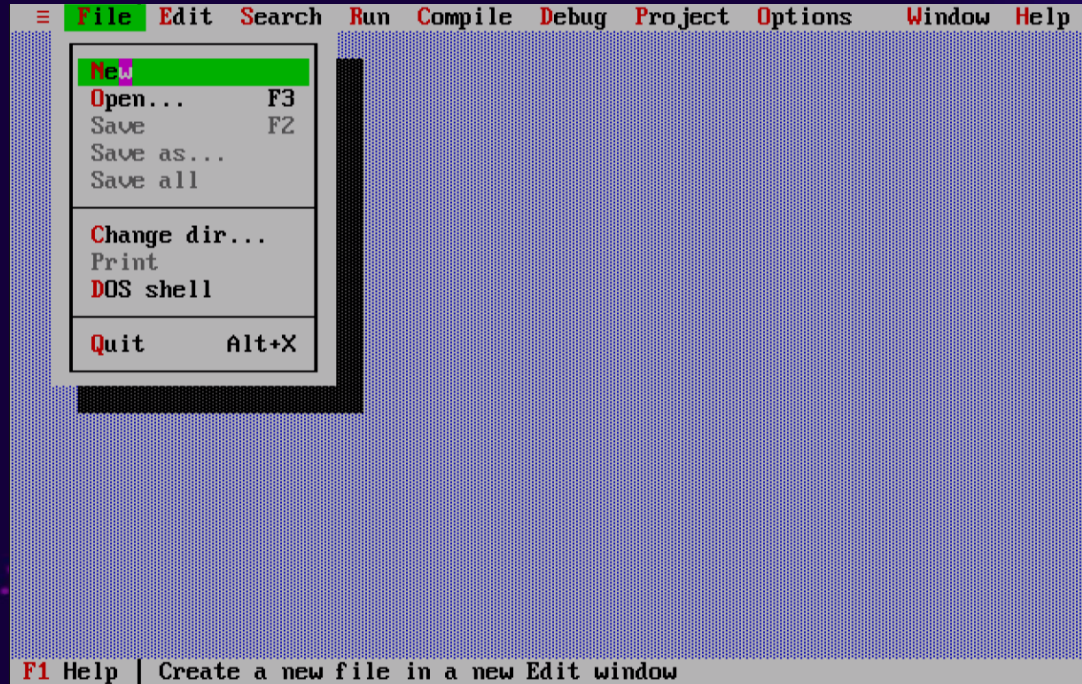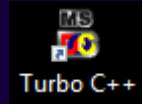
Example

```
[■]════════════════════ NONAME01.CPP ════════════════════1=[↕]
#include<stdio.h>
#include<conio.h>
void main()
{
int a,b,c;
clrscr();
printf("Enter a number for a:");
scanf("%d", &a);
printf("Enter a number for b:");
scanf("%d", &b);
c=a+b;
printf("The sum of the two numbers %d and %d is: %d ", a,b,c);
getch();
}_
```

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Example

Example

Example

Example

Example

```
Enter a number for a:12
Enter a number for b:3
The sum of the two numbers 12 and 3 is: 15
```