

Assignment - 2

Q) What is difference b/w constant variable and non-constant variable

Ans

Constant variable

- Variable cannot be changed after defining the variable in a program
- It uses the "const" keyword to initialise the ^{constant} variable

Ex:- const int = 5;

Non-constant variable

- Non-constant variable is also known as variable
- Variable can be changed after defining the variable in a program
- It can be initialised using normal Data Types such as int, float, char, double, etc.

Ex:- int a=5;

float radius=5.2

char c='A'

Q)

② what is difference B/w Structure and union

Structure

- Structure is a collection of variable under a single name
- Structure can be store variable of different Data Types
- In Structure memory allocating for every variable
- The struct keyword is used to define a structure
- In Structure size of a It is equal to the sum of the size of each data member
- each variable will be assessed at a time
- It allows initializing multiple variable at once

Ex:-

```
struct student
```

```
{ int n;  
float avg;  
char c;  
};
```

size of memory is 9

Union

- union is collection of one or more variable with different Data type
- The union keyword is used to define union
- memory size of union is large data member in it
- only one variable will be accessed at time
- It allows initializing only one variable at once

Ex:-

Union Demo

```
{  
    int a;  
    float b;  
    char c;  
}
```

memory size of it is 4

What is mean by array?

Ans

- array is a collection of same data type
 - The element can be stored sequentially one after the other in memory
 - array is a derived datatype
 - Any element can be accessed by using name of the array and position of element in the array
 - each value in array is reference by a single name, which is the name of the array and index, which indicates the position of the value in the array
 - The index is always a positive integer number, which is enclosed in a pair of square brackets
- Ex: int age[5];

index →	[0]	[1]	[2]	[3]	[4]	
array name → age	2 100	3 104	34 108	3 112	4 116	120

Q) what are the different standardisation of C programming language

Ans:-

- 1) Kernighan & Ritchie (K&R) C Standard
- 2) ANSI C Standard C/89 Standard
- 3) ISO C/C90 Standard
- 4) C99 Standard

1) Kernighan & Ritchie (K&R) C Standard
→ The first edition of 'The Programming Language' book by Brian Kernighan and Dennis Ritchie was published in 1978.

2) ANSI C Standard C/89 Standard
In 1983, a technical committee was created under the American National Standards Institute (ANSI) committee to establish a standard specification of C.

3) ISO C/C90 Standard
In 1990, the International Organization for Standardization (ISO) adopted the ANSI C Standard after minor modification. This version of standard is called ISO C (90) sometimes C90.

w) C99 Standard

The standard was published in 1999 and is known as C99.

5) what is difference B/w local and global variables?

Ans:-

Local variables

- Local variables are defi; declared inside the function
- Local variables are accessed only by the function they are declared in

Ex:-

#include<stdio.h>

```
int main()
{
    int a, b, c; // local variable
    return 0;
}
```

global variables

- variable declared outside the main function
- global variable are accessed by all function in the program

Ex:- 1

```

#include <stdio.h>
int a, b, c; → global variable
int main()
{
    return 0;
}

```

6) what are the task of preprocessor?

Ans

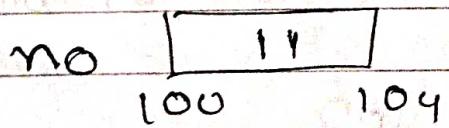
- Preprocessor is responsible to perform some operations on a file which are required before it's execution starts.
 - Preprocessor directives always begin with the symbol #.
 - Output generated by the preprocessor is expanded output have the extension .i (i stand for intermediate code)
 - codec.in side .i file human readable has well as human understandable (demo.i)
- Following
- file inclusion
 - macro expansion
 - conditional compilation
 - comment removal
 - Extra white space removal
- Ex: #include <stdio.h>

7) What is meant by MinGW?

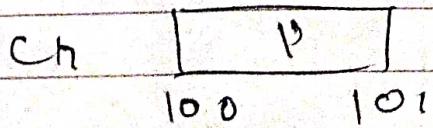
- MinGW is a set of runtime header file, used in compiling and linking the code of C, C++ to be run on the windows operating system
- MinGW is a complete C/C++ toolchain for the windows platform which compiles for and links to the windows OS components runtime library
- In the MinGW it includes preprocessor, compiler, assembler, linker.

⑧ Read below statement and draw its diagrammatic layout

① Const int no = 11;



② const char ch = 'P';



8. const int arr[6] = {10, 20, 30, 40, 50, 60}

	0	1	2	3	4	5
arr	10	20	30	40	50	60

Q9] what is means function declaration & function definition

Function declarations

Every function in C program should be declared before they are used

Function declaration gives information about

- Function name
- type of arguments to be passed and
- return type

The syntax is show below:-

return-type Function_name (formal parameters)

Function Definition

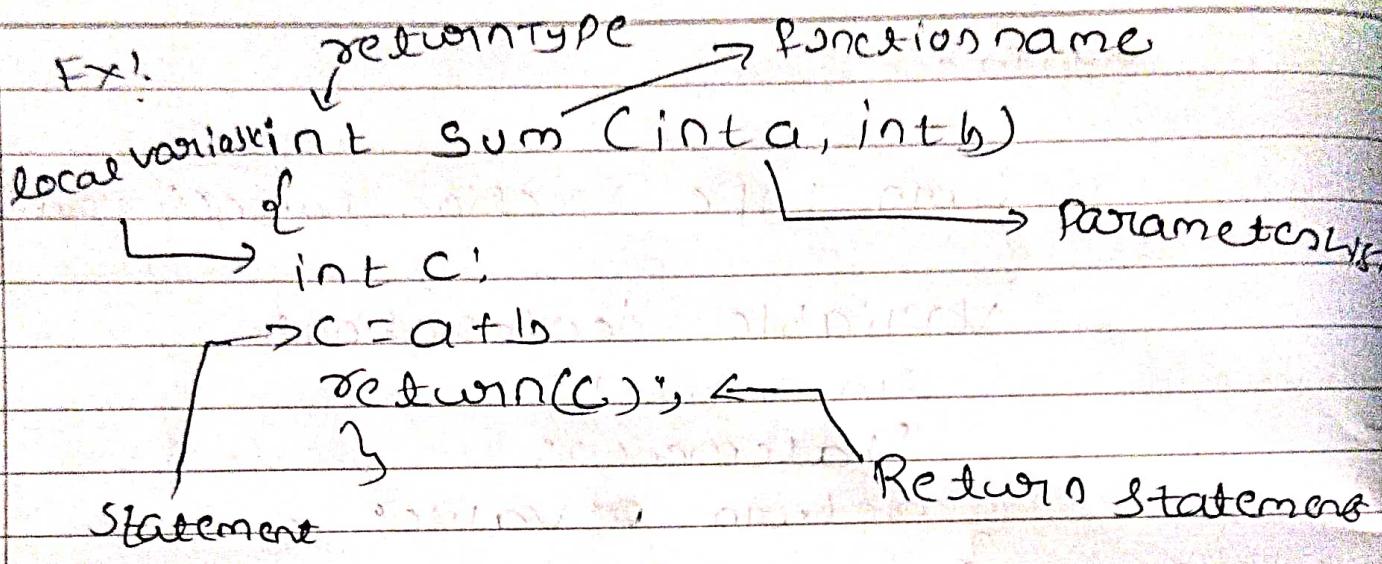
Function definition contains programming code to perform specific task

Syntax:-

```
return-type function-name(formal parameters)
{
    variable declaration;
    Statement 1;
    Statement 2;
    return value;
}
```

where:-

- return-type is the datatype of function
- function-name refers to the name of the function
- formal parameters are a comma separated list of variables that receive the values from main program when function is called
- return statement returns the result of function.



- Q. 10) What is meant by Preprocessor directive symbol
- Preprocessor directive symbol is '`#`' which tell the compiler to preprocess the source code before compiling.
 - All of these preprocessor directives begin with a '`#`' symbol and is used before main() or any particular function.
 - Ex! - `#include`