

Topic 1: Variable declaration, data types, Formatted input and output functions, operators and expressions.

Program 1: WAP to print “hello world” on screen.

program 2: WAP to show various ways in which “printf” can be used to display various messages.

Program 3: WAP to ask user to enter two numbers and find sum of two numbers.

Program 4: WAP to calculate simple interest($p*r*t$) and compound interest.

Program 5: WAP to ask user to enter marks of 5 subject calculate average marks.

Program 6: WAP to convert centigrade temperature to Fahrenheit and vice versa.

Program 7: WAP to find area of mathematical objects like circle, rectangle and triangle.

Program 8: WAP to ask user to enter time in hours and calculate minutes and seconds.

Program 9: WAP to enter four digit number and find sum of digits.

Program 10: WAP to enter a character from keyboard if character is small letter convert to capital or vice versa.

Program 11: WAP to enter your DOB and calculate how many days you have lived.

Program 12: WAP to enter time in minutes and find its equivalent hrs and minutes.

Topic 2: Operators(modulus operator, logical operators, conditional(ternary) operator) and expressions

Program 1: WAP to ask user to enter two numbers and display after swapping of numbers.

Program 2: WAP to ask user to enter his age and display whether he is eligible for casting a vote or not. If his age is <18 he is not eligible.

Program 2: WAP to check if a student is eligible for sitting in ETE or not. If students attendance <75 and CA<40 he is not allowed to take ETE else he is allowed. Ask user to enter his attendance and CA marks.

Program 3: WAP to find the greatest of 2 numbers using conditional(ternary) operator.

Program 4: WAP to find whether number is positive or negative using conditional(ternary) operator.

Program 5: WAP to calculate bill of stationary items, if a store is selling pen at 10Rs , book at 20Rs and notebook at 15rs. Ask user the quantity of each item and display the total bill.

Program 6: WAP to ask user to enter his DOB and calculate how many independence days he had seen in his life.

Program 7: WAP to ask user to enter three numbers and find greater out of three numbers.

Topic 3: Decision making(if, if-else, nested if-else), Control transfer(goto, break, continue) and switch statements

Program 1: WAP to show greatest of 2 or 3 numbers using if-else.

Program 2: WAP to find that year entered is leap year or not using if-else.

Program 3: WAP to find the number is even or odd using if-else.

Program 4: WAP to show following conditions using nested if else statement:

```
gender: male  salary>10000 then bonus should be 1000
              salary <10000 and >5000, then bonus=500
              s
```

```
alary <5000, then bonus=100
```

```
gender:female salary>10000 then bonus should be 100
              salary <10000 and >5000, then bonus=50
              salary <5000, then bonus=10
```

Program 5: WAP using switch statement, asking the user to enter a day(sunday, monday, tuesday, etc). If the user has entered saturday or sunday then display a message saying “enjoy! Its holiday”, else display a message saying “so sad, u still have to work”, showing use of break statement also.

Program 7: Write a menu driven program using switch case to do different arithmetic operations, showing use of break statement also

Program 6: WAP to calculate electricity bill of a user. Ask user to enter units consumed.
If units<=200 each unit is charged at 2Rs.

If units>200 and units<=400 ,for first 200 units charged at Rs.2 and other unit is charged at 4Rs.

Program 7: WAP to calculate area of mathematical objects using switch. Ask user to press 'r' for area of rectangle 's' for area of square and 'c' for area of circle. Make sure that your program is not case sensitive.

Topic 4: Loops(while, do while and for)

Program 1: WAP to calculate factorial of a number.

Program 2: WAP to check whether a number is prime or not?

Program 3: WAP to reverse a given number,it can be of any number of digits.

Program 4: WAP to check whether number is palindrome or not?

Program 5: WAP to display all numbers between 20 and 60 except printing numbers which are divisible by 7.

Program 6: WAP to find even and odd numbers from first 10 numbers.

Program 7: WAP to print A-Z in the form of AB CD EF....

Program 8: WAP to ask user to enter two numbers and find sum of numbers in between those two numbers.

Program 9: WAP to ask user to enter a number and display multiplication table in the form of

N*1=....

N*2=....

.

.

N*10=.....

Program 10: WAP to ask user to enter numbers 10 times , count how many of them are positive, how many are negative and how many zeros.

Topic 5: Loops and Nested loops

Program 1: WAP to display following pattern:

```
*
**
***
****
*****
```

Program 2: WAP to display following pattern:

```
1
12
123
1234
12345
```

Program 3: WAP to display following pattern:

```
1
121
```

12321
1234321

Program 4: WAP to display following pattern:

12345
2345
345
45
5

Topic 6: functions

Program 1: Write a menu driven program to show various arithmetic operations using switch and functions.

Program 2: WAP to find factorial of the number using functions.

Program 3: WAP to show the table of the number using functions.

Program 4: WAP to find whether a number is prime or not using functions.

Program 5: WAP to swap the value of two numbers using functions.

Program 6: WAP to display Fibonacci series using functions.

Program 7: WAP to create functions with following prototype

int meter(int KM);

int feet(int KM);

int miles(int KM);

Ask user to enter value of distance in KM and converting it to meter , feet and miles using switch statement.

Program 8: WAP to make functions with prototype

void sum(int a,int b);

void sub(int a,int b);

void mul(int a,int b);

Ask user his choice which function he wants to execute.

Topic 7: functions(call by value, call by reference)

Program 1: WAP to show the working of call by value and call by reference for sum of two numbers.

Program 2: WAP to calculate the sum of all the elements of an array using functions.

Program 3: WAP to find the greatest and smallest from the elements of array using functions.

Program 4: WAP to calculate the sum of all elements of an array that are divisible by 5 and are even.

Program 5: WAP to swap the values of two variables using call by value and call by reference.
(questions of series)

Topic 8: Recursion

Program 1: WAP to print reverse of a number using recursion.

Program 2: WAP to find factorial using recursion.

Program 3: WAP to display Fibonacci series using recursion.

Program 5: WAP to find whether a number is prime or not using recursion.

Program 6:WAP to find sum of series

$$1^2+2^3+3^4+\dots+n^{n+1}$$

Program 7: WAP to find sum of series

$$1^2-2^3+3^4-4^5+\dots+n^{n+1}$$

Program 8: WAP to find sum of all the digits of number and number can be of any length.

1 Dimensional array

Program 1: WAP to store integer data in an array, and print the elements of the array:

Program 2: WAP to find the sum of all elements of an array.

Program 3: WAP to find the average of all elements of an array

Program 4: WAP to find the greatest/maximum number in the array.

Program 5: WAP to find the smallest/minimum number in the array.

Program 6: WAP to search a given element in an array using linear search.

Program 7: WAP to search a given element in an array using binary search.

Program 8: WAP to sort the elements of array using bubble sort.

Program 9: WAP to search a given item in an array.

Program 10: WAP to display the contents of the elements of array that are at odd/even positions.

Program 11: WAP to enter 10 different numbers in an array, then adding the numbers that are divisible by 3 and displaying the result.

Program 12: WAP to store elements in array, insert a new element in array by asking user to enter location and number to be inserted. Display contents of array after insertion.

Program 13: WAP to delete any element from array and display content of array after deletion.

Program 14: WAP to create array for storing marks of 60 students and find

(a) Highest marks

(b) Lowest marks

(c) Average marks.

(d) Count how many students failed(marks<30).

Program 15: WAP to create 2 arrays of 1D. Enter data in them . Create third array and add the contents of 1st and 2nd array and store answer in 3rd array.

2 Dimensional array

Program 1: WAP to add two matrices.

Program 2: WAP to multiply two matrices.

Program 3: WAP to find the sum of diagonal elements of a square matrix.

Program 4: WAP to find the sum of opposite diagonal elements of a square matrix.

Program 5: WAP to find transpose of a matrix.

Program 6: WAP to enter 3X3 array. Display the array in the form of a matrix.

String

Program 1: WAP to concatenate two strings.

Program 2: WAP to compare two strings.

Program 3: WAP to perform arithmetic operations on characters.
Program 4: WAP to calculate length of the string.
Program 5: WAP to copy a string.
Program 6: WAP to convert a string from uppercase to lowercase letters.
Program 7: WAP to find whether a string is palindrome or not.
Program 8: WAP to count vowels and consonants in string.
Program 9: WAP to find number of occurrences of “e” in a string, and replace “e” with “X”.
Program 10: WAP to concatenate two strings without using strcat.
Program 11: WAP to compare two strings without using strcmp.
Program 12: WAP to find length of string without using strlen.
Program 13: WAP to reverse a string without using strrev.
Program 14: WAP to count characters , spaces, words from a string.
Program 15: WAP to reverse a string and store it in other string without using strrev.

Pointer

Program 1: WAP to find maximum element in array using pointer.
Program 2: WAP to search a character in string using pointer.
Program 3: WAP to print address of a variable along with its value by using pointer .
Program 4: WAP to show accessing of array elements using pointers.
Program 5: WAP to show the use of pointers to compute the sum of all elements stored in array.
Program 6: WAP to ask user to enter a string find length of string using pointer.
Program 7: WAP to ask user enter a string and search a character from this string using pointer.
Program 8: WAP to ask user to create a array , enter values in it and add 2 in each element of array using pointer and display the array.
Program 9: WAP to enter a string and convert all small letter to capital letters using pointer.

Dynamic Memory Allocation

Program 1: WAP to create a array of 5 elements using malloc. Find sum of array elements.
Program 2: WAP to create string using calloc . Find length of string without using string length without using strlen().
Program 3: WAP to create array using malloc . And find the smallest and largest element from it.
Program 4: WAP to store a string ,use calloc for allocating space. Count number of vowels and consonants from it.
Program 5: WAP to create a array of 5 elements using malloc. Enter values in array. Reallocate the memory of this array using realloc and reenter the values and display all the elements
Program 6: WAP to assign memory to a float array at run time and calculate the average of element of that array.

Structures and unions

Program 1: WAP using structures to display the record of 4 employees of a company.
Program 2: WAP to store the record of a student containing name, rollnumber, class and marks in

three subjects of the student.(array within structure).

Program 3: using the structure in above program create an array of atleast 5 elements. (array of structures).

Program 4: WAP to create one structure inside other structure.

Program 5: WAP to Create structure of Employee with functions of input and display.

Program 6: WAP to create structure of book(Name,Author,Callno) and display the information of one book by using pointer to structure

Program 7:WAP to create a structure named TEAM with members country_name,Total,won,lost.

Use following functions for 10 Teams.

- (a) To enter data
- (b) To display data in tabular format
- (c) To search data according to country name.
- (d) To sort and display records according to total matches played.

Program 8: WAP to create a structure named BILL with members meter_no,name,Previous reading and current reading.

Use following functions for 50 houses.

- (a) To enter data
- (b) To display data in tabular format
- (c) To search data according to meter no
- (d) To sort the data according to meterno.

Topic 14: File handling

Program 1: WAP copy the content of one file into another.

Program 2: WAP to create one file to store 10 number and then copy the contents by storing even numbers on second file and odd numbers on third file.

Program 3: WAP to count number of characters, words and lines within file.

Program 4: WAP to create one file and display the content of file on screen.

Program 5: WAP to perform reading and writing within same mode.