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Expt No 1

Q.  $\rightarrow$  WAP to print "Hello World".

```
#include <stdio.h>
int main()
{
    printf ("Hello World");
}
```

OUTPUT :

Hello World

→ WAP to print sum of two numbers.

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

```
int main()
```

```
{
```

```
    int a, b, sum;
```

```
    printf ("Enter values for a & b : ");
```

```
    scanf ("%d %d", &a, &b);
```

```
    sum = a+b;
```

```
    printf ("Sum is %d", sum);
```

```
    return 0;
```

```
}
```



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2

## OUTPUT :

Enter values for a&b : 3 4

Sum is 7

Q.3 → WAP to find whether the entered number is +ve, -ve or zero.

```
#include <stdio.h>
int main()
{
    int n;
    printf ("Enter value for n: ");
    scanf ("%d", &n);
    if (n > 0) {
        printf ("n is +ve");
    }
    else if (n < 0) {
        printf ("n is -ve");
    }
    else {
        printf ("n is zero");
    }
    return 0;
}
```

103

OUTPUT :

Enter value for n : 5  
n is +ve

Enter value for n : 0  
n is zero

Q.4 → WAP to find whether the entered character is an alphabet or not.

```
#include <stdio.h>
int main () {
    char ch;
    printf ("Enter a character ");
    scanf ("%c", &ch);
    if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
    {
        printf ("is an alphabet ");
    }
    else {
        printf ("not an alphabet ");
    }
    return 0;
}
```

4

OUTPUT :

Enter a character : n  
is an alphabet

Enter a character : 2  
not an alphabet

Q. S → WAP to find whether the entered alphabet is a vowel or not.

```
#include <stdio.h>
int main () {
    char ch;
    printf ("Enter a character : ");
    scanf ("%c", &ch);
    if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u'
        || ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U')
    {
        printf ("is a vowel ");
    }
    else {
        printf ("is a consonant ");
    }
    return 0;
}
```

5 OUTPUT :

Enter a character : p

is a consonant

Enter a character : a

is a vowel

Q. 6 → WAP to find maximum among three numbers.

```
#include <stdio.h>
int main() {
    int a, b, c;
    printf("Enter values for a, b & c : ");
    scanf("%d %d %d", &a, &b, &c);
    if((a>b) && (a>c)) {
        printf("a is greater.");
    }
    else if ((b>a) && (b>c)) {
        printf("b is greater.");
    }
    else {
        printf("c is greater.");
    }
    return 0;
}
```

6 OUTPUT :

Enter values for a,b & c : 2 4 6  
C is greater

Enter values for a,b & c : 8 2 1  
a is greater

P.  
7

→ WAP to find whether the number is even or odd

```
#include <stdio.h>
int main () {
    printf ("Enter value for n : ");
    scanf ("%d", &n);
    if (n%2 == 0) {
        printf ("n is even ");
    }
    else {
        printf ("n is odd ");
    }
    return 0;
}
```

7    OUTPUT:

Enter value for n : 4  
n is even

Enter value for n : 7  
n is odd

Q. 8 → WAP to find whether it is a leap year or not.

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

```
int main () {
```

```
    int year ;
```

```
    printf ("Enter year : ");
```

```
    scanf ("%d", &year );
```

```
    if (year % 4 == 0) {
```

```
        printf ("Leap year ");
```

```
    } else {
```

```
        printf ("not a leap year ");
```

```
}
```

```
return 0;
```

```
}
```



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8

### OUTPUT :

Enter year : 2094  
leap year

Enter year : 2026  
not a leap year

Q. 9 → WAP to find area of circle.

```
#include <stdio.h>
int main () {
    int r;
    float pi, area;
    printf ("Enter value for r : ");
    scanf ("%d", &r);
    pi = 22/7;
    area = pi * r * r;
    printf ("Area of a circle is %f ", area);
    return 0;
}
```

9

## OUTPUT :

Enter value for r : 4  
Area of circle is 48.00000

Q10 → WAP to print the name, age & height of a person.

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

```
int main () {
```

```
char name[50];
```

```
int age;
```

```
float height;
```

```
printf ("Enter name : ");
```

```
scanf ("%s", name);
```

```
printf ("Enter age : ");
```

```
scanf ("%d", &age);
```

```
printf ("Enter height ");
```

```
scanf ("%f", &height);
```

```
printf ("Name : %s \n Age : %d \n Height : %.2f cm ", name, age, height);
```

```
return 0; }
```



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10 OUTPUT:

Enter name : Sneha  
Enter age : 17  
Enter height : 164.00 cm

Q. 11 → WAP to find position of a student on the basis of marks obtained in 5 subjects.

```
#include <stdio.h>
int main () {
    int a, b, c, d, e;
    float total, percentage;
    printf ("Enter marks : ");
    scanf ("%d %d %d %d %d", &a, &b, &c, &d, &e);
    total = a+b+c+d+e;
    percentage = total / 5.0;
    if (percentage > 60) {
        printf ("1st position");
    } else if (percentage > 50 && percentage <= 60) {
        printf ("2nd position");
    } else if (percentage > 40 && percentage <= 50) {
        printf ("3rd position");
    } else {
        printf ("fail");
    }
    return 0;
}
```

11

OUTPUT :

Enter marks : 95 90 85 90 95  
1<sup>st</sup> position

Enter marker : 5 7. 9 3 10.  
Fail

Q.19 → WAP for switch statement for printing days.

```
#include <stdio.h>
int main () {
    int day;
    printf ("Enter a day : ");
    scanf ("%d", &day);
    switch (day) {
        case 1 : printf ("Monday");
        break;
        case 2 : printf ("Tuesday");
        break;
        case 3 : printf ("Wednesday");
        break;
        case 4 : printf ("Thursday");
        break;
        case 5 : printf ("Friday");
        break;
        case 6 : printf ("Saturday");
        break;
        case 7 : printf ("Sunday");
        break;
        default : printf ("invalid");
    }
    return 0;
}
```

12 OUTPUT :

Enter a day : 5  
Friday

Enter a day : 2  
Tuesday

Enter a day : 9  
Invalid

Q.13 → WAP to print multiplication table using do-while loop.

```
#include <stdio.h>
int main () {
    int n, i;
    i = 1;
    printf ("Enter number : ");
    scanf ("%d", &n);
    do {
        printf ("%d \n", n * i);
        i++;
    }
    while (i <= 10);
    return 0;
}
```

Q.14 → WAP to print even no. from 1 to 20 using for loop.

```
#include <stdio.h>
int main () {
    for (int i = 2; i <= 20, i++) {
        if (i % 2 == 0) {
            printf ("%d \n", i);
        }
    }
    return 0;
}
```

13    OUTPUT :

Enter number : 2

$$2 \times 1 = 2$$

$$2 \times 2 = 4$$

$$2 \times 3 = 6$$

$$2 \times 4 = 8$$

$$2 \times 5 = 10$$

$$2 \times 6 = 12$$

$$2 \times 7 = 14$$

$$2 \times 8 = 16$$

$$2 \times 9 = 18$$

$$2 \times 10 = 20$$

14    OUTPUT :

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

Q.  $\rightarrow$  WAP to find sum of n natural numbers using do-while loop.

```
#include <stdio.h>
int main (){
    int n, i, sum;
    i = 1;
    sum = 0;
    printf ("Enter n ");
    scanf ("%d", &n);
    do {
        sum = sum + i;
        i++;
    }
    while (i <= n);
    printf ("Sum = %d ", sum);
    return 0;
}
```

15

OUTPUT :

Entree n : 9  
Sum = 45

Entree n : 7  
Sum = 28

Entree n : 5  
Sum = 15

Q.16

→ WAP to print no. 1-20 using do-while loop.

```
#include <stdio.h>
int main () {
    int i;
    i = 1;
    do {
        printf ("%d \n", i);
        i++;
    } while (i <= 20);
    return 0;
}
```

Q.17

→ WAP to calculate area of rectangle.

```
#include <stdio.h>
int main () {
    float length, breadth, area;
    printf ("Enter length & breadth ");
    scanf ("%f %f", &length, &breadth);
    area = length * breadth;
    printf ("Area of rectangle = %.2f ", area);
    return 0;
}
```



16    OUTPUT :

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

17    OUTPUT :

Enter length & breadth : 5 4  
Area of rectangle = 20

Q.18

→ WAP to print even no. in reverse order.

```
#include <stdio.h>
int main() {
    int i;
    i = 20;
    while (i >= 2) {
        printf ("%d \n", i);
        i -= 2;
    }
    return 0;
}
```

Q.19

→ WAP to convert centigrade to Fahrenheit.

```
#include <stdio.h>
int main() {
    float c, f;
    printf ("Enter temp. in Celsius : ");
    scanf ("%f", &c);
    f = (c * 9/5) + 32;
    printf ("Temp. in Fahrenheit = %.2f", f);
    return 0;
}
```

18    OUTPUT :    20  
      18  
      16  
      14  
      12  
      10  
      8  
      6  
      4  
      2

19    OUTPUT :

Enter temp. in Celsius : 34  
Temp. in Fahrenheit = 93.20

Enter temp. in Celsius : 99  
Temp. in Fahrenheit = 210.20

Q.20 → WAP to find factorial of a number.

```
#include <stdio.h>
int main () {
    int n, fact;
    fact = 1;
    printf ("Enter number : ");
    scanf ("%d", &n);
    for (int i = 1; i <= n; i++) {
        fact = fact * i;
    }
    printf ("Factorial = %d", fact);
    return 0;
}
```

Q.21 → WAP to calculate simple interest.

```
#include <stdio.h>
int main () {
    float p, r, t, si;
    printf ("Enter principal, rate, & time : ");
    scanf ("%f %f %f", &p, &r, &t);
    si = (p * r * t) / 100;
    printf ("Simple Interest = %.2f", si);
    return 0;
}
```

20 OUTPUT :

Enter number : 4  
Factorial = 24

Enter number : 6  
Factorial = 720

21 OUTPUT :

Enter principal, rate, time : 20000 4 4  
Simple interest = 3200.00

Ques.

→ Write a menu driven program to calculate area.

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

```
int main () {
```

```
    int choice;
```

```
    float r, l, b, base, h;
```

```
    printf ("1. Circle\n 2. Rectangle\n 3. Triangle\n Enter choice : ");
```

```
    scanf ("%d", &choice);
```

```
    switch (choice) {
```

```
        case 1 :
```

```
            printf ("Enter radius : ");
```

```
            scanf ("%f", &r);
```

```
            printf ("Area = %.2f", 3.14 * r * r);
```

```
            break;
```

```
        case 2 :
```

```
            printf ("Enter length & breadth : ");
```

```
            scanf ("%f %f", &l, &b);
```

```
            printf ("Area = %.2f", l * b);
```

```
            break;
```

```
        case 3 :
```

```
            printf ("Enter base & height ");
```

```
            scanf ("%f %f", &base, &h);
```

```
            printf ("Area = %.2f", 0.5 * base * h);
```

```
            break;
```

```
        default :
```

```
            printf ("Invalid choice ");
```

```
}
```

```
return 0; }
```



22

OUTPUT :

- 1. Circle
- 2. Rectangle
- 3. Triangle

Enter choice : 2

Enter length & breadth : 6 : 9

Area = 54.00

Q.23 → WAP to check whether a character is an alphabet, digit or special character.

```
#include <stdio.h>
int main() {
    char ch;
    printf ("Enter a character : ");
    scanf ("%c", &ch);
    if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
        printf ("Alphabet.");
    else if (ch >= '0' && ch <= '9')
        printf ("Digit");
    else
        printf ("Special character.");
    return 0;
}
```

23

OUTPUT :

Enter a character : P  
Alphabet

Enter a character : 2  
Digit

Enter a character : \*  
Special character

Q.24 → WAP to check whether a number is divisible by both 5 & 11.

```
#include <stdio.h>
int main() {
    int n;
    printf("Enter a number : ");
    scanf("%d", &n);
    if (n%5==0 && n%11==0)
        printf("Divisible by both 5 & 11");
    else
        printf("Not divisible by both 5 & 11");
    return 0;
}
```

Q.25 → WAP to reverse multiplication table.

```
#include <stdio.h>
int main() {
    int n;
    printf("Enter number : ");
    scanf("%d", &n);
    for (int i=10; i>=1; i--)
        printf("%d/n" n*i);
    return 0;
}
```

24

OUTPUT :

Enter a number : 18  
Not divisible by both 5 & 11

25

Output :

Enter number : 3

$$3 \times 10 = 30$$

$$3 \times 9 = 27$$

$$3 \times 8 = 24$$

$$3 \times 7 = 21$$

$$3 \times 6 = 18$$

$$3 \times 5 = 15$$

$$3 \times 4 = 12$$

$$3 \times 3 = 9$$

$$3 \times 2 = 6$$

$$3 \times 1 = 3$$

Q.2

→ WAP to program to create a simple calculator using switch - case.

```
#include <stdio.h>
int main() {
    int char op;
    float a, b;
    printf ("Enter operator (+, -, *, /):");
    scanf ("%c", &op);
    printf ("Enter two numbers :");
    scanf ("%f %f", &a, &b);
    switch (op) {
        case '+':
            printf ("Result = %.2f", a+b);
            break;
        case '-':
            printf ("Result = %.2f", a-b);
            break;
        case '*':
            printf ("Result = %.2f", a*b);
            break;
        case '/':
            printf ("Result = %.2f", a/b);
            break;
        default:
            printf ("Invalid operator ");
    }
    return 0;
}
```

26 OUTPUT :

Enter operator (+, -, \*, /) : +  
Enter two numbers : 7 8  
Result = 15.00

Q.27

→ WAP to determine whether a character is lowercase or uppercase.

```
#include <stdio.h>
int main() {
    char ch;
    printf("Enter a character: ");
    scanf("%c", &ch);
    if (ch >= 'A' && ch <= 'Z') {
        printf("Uppercase.");
    } else if ((ch >= 'a') && (ch <= 'z')) {
        printf("Lowercase.");
    } else {
        printf("Not an Alphabet.");
    }
    return 0;
}
```

Q.28

→ WAP for printing table using for loop.

```
#include <stdio.h>
int main() {
    int n;
    printf("Enter number: ");
    scanf("%d", &n);
    for (int i = 1; i <= 10; i++) {
        printf("%d\n", n * i);
    }
    return 0;
}
```

27 OUTPUT :

Enter a character : Sneha  
Uppercase

Enter a character : verma  
lowercase

28 OUTPUT :

$$4 \times 1 = 4$$

$$4 \times 2 = 8$$

$$4 \times 3 = 12$$

$$4 \times 4 = 16$$

$$4 \times 5 = 20$$

$$4 \times 6 = 24$$

$$4 \times 7 = 28$$

$$4 \times 8 = 32$$

$$4 \times 9 = 36$$

$$4 \times 10 = 40$$

Q.29 → Write a program to check whether the user is eligible to vote or not.

```
#include<stdio.h>
int main(){
    int age;
    printf("Enter age : ");
    scanf("%d", &age);
    if (age >= 18)
        printf("Eligible for vote");
    else
        printf("Not eligible");
    return 0;
}
```

Q.30 → WAP to print no. from 1 to 10 using for loop.

```
#include<stdio.h>
int main(){
    for (int i = 1; i <= 10; i++)
        printf("%d\n", i);
    return 0;
}
```

29 OUTPUT:

Enter age : 19  
Eligible for vote

Enter age : 12  
Not eligible

30 OUTPUT:

1  
2  
3  
4  
5  
6  
7  
8  
9  
10