

Unit 2: if-else and loops

Practice Questions

WAP == Write a program

1. WAP in C to take input of 5 ints. Print the value of the second-largest number.
2. WAP in C to take input of an int n. Then, read n integers. Print the value of the second-largest number of those n numbers.
3. WAP in C to take input of an int n and prints the long int given by $\sum_{i=1}^n i$.
4. WAP in C to Display the grade obtained by a student using marks obtained in 5 subjects entered from the user. The maximum marks in each subject is 100.

Percentage	Grade
<40	F
>=40 and <50	E
>=50 and <60	D
>=60 and <70	C
>=70 and <80	B
>=80 and <90	A
>=90	O

5. Write a program to print all the ASCII values and their equivalent characters using a while loop. The ASCII values vary from 0 to 255.
6. Write a Program in C to check whether a number entered by the user is a palindrome number or not. (e.g. of palindrome numbers: 121, 1221, 12321, 1, 11)
7. For each of the following code snippets, write their output:

```
main()
{
    int x = 10, y = 20 ;
    if ( x == y ) ;
        printf ( "\n%d %d", x, y ) ;
}
```

```
main()
{
    int x = 3, y = 5 ;
    if ( x == 3 )
        printf ( "\n%d", x ) ;
    else ;
        printf ( "\n%d", y ) ;
}
```

```
main()
{
    int x = 3 ;
    float y = 3.0 ;

    if ( x == y )
        printf ( "\nx and y are equal" ) ;
    else
        printf ( "\nx and y are not equal" ) ;
}
```

```
main()
{
    int x = 3, y, z ;
    y = x = 10 ;
    z = x < 10 ;
    printf ( "\nx = %d y = %d z = %d", x, y, z ) ;
}
```

8. According to the Gregorian calendar, it was Monday on the date 01/01/2000. If any year is input through the keyboard write a program to find out what is the day on 1st January of the current year.

9. Consider the below question(s).

If a = 10, b = 12, c = 0, find the values of the expressions in the following table:

Expression	Value
a != 6 && b > 5 a == 9 b < 3 ! (a < 10) ! (a > 5 && c) 5 && c != 8 !c	1

10. What is the output of the following programs:

```
main()
{
    int i = 4, j = -1, k = 0, w, x, y, z;
    w = i || j || k;
    x = i && j && k;
    y = i || j && k;
    z = i && j || k;
    printf ( "\nw = %d x = %d y = %d z = %d", w, x, y, z );
}
```

```
main()
{
    int i = 4, j = -1, k = 0, y, z;
    y = i + 5 && j + 1 || k + 2;
    z = i + 5 || j + 1 && k + 2;
    printf ( "\ny = %d z = %d", y, z );
}
```

```
main()
{
    int i = -3, j = 3;
    if ( !i + !j * 1 )
        printf ( "\nMassaro" );
    else
        printf ( "\nBennarivo" );
}
```

11. Consider the following question.

A certain grade of steel is graded according to the following conditions:

- (i) Hardness must be greater than 50
- (ii) Carbon content must be less than 0.7
- (iii) Tensile strength must be greater than 5600

The grades are as follows:

Grade is 10 if all three conditions are met
 Grade is 9 if conditions (i) and (ii) are met
 Grade is 8 if conditions (ii) and (iii) are met
 Grade is 7 if conditions (i) and (iii) are met
 Grade is 6 if only one condition is met
 Grade is 5 if none of the conditions are met

Write a program, which will require the user to give values of hardness, carbon content and tensile strength of the steel under consideration and output the grade of the steel.

12. Consider the following question

A university has the following rules for a student to qualify for a degree with A as the main subject and B as the subsidiary subject:

- (a) He should get 55 percent or more in A and 45 percent or more in B.
- (b) If he gets than 55 percent in A he should get 55 percent or more in B. However, he should get at least 45 percent in A.
- (c) If he gets less than 45 percent in B and 65 percent or more in A he is allowed to reappear in an examination in B to qualify.
- (d) In all other cases he is declared to have failed.

Write a program to receive marks in A and B and Output whether the student has passed, failed or is allowed to reappear in B.

13.What is the output of the following code snippets?

```
main()
{
    int j;
    while ( j <= 10 )
    {
        printf ( "\n%d", j );
        j = j + 1 ;
    }
}
```

```
main()
{
    int x = 1 ;
    while ( x == 1 )
    {
        x = x - 1 ;
        printf ( "\n%d", x );
    }
}
```

```
main()
{
    int x = 1 ;
    while ( x == 1 )
        x = x - 1 ;
    printf ( "\n%d", x );
}
```

```
main( )
{
    int x = 4, y, z ;
    y = --x ;
    z = x-- ;
    printf ( "\n%d %d %d", x, y, z ) ;
}
```

```
main( )
{
    int x = 4, y = 3, z ;

    z = x-- - y ;
    printf ( "\n%d %d %d", x, y, z ) ;
}
```

```
main( )
{
    while ( 'a' < 'b' )
        printf ( "\nmalyalam is a palindrome" ) ;
}
```

```
main( )
{
    int i = 10 ;
    while ( i = 20 )
        printf ( "\nA computer buff!" ) ;
}
```

14. Write a program to print all the ASCII values and their equivalent characters using a while loop. The ASCII values vary from 0 to 255.

15. Write a program in C to produce the following pattern as output:

```

      1
    2   3
  4   5   6
7   8   9   10
```

16. Write a program to fill the entire screen with diamond and heart alternatively. The ASCII value for heart is 3 and that of diamond is 4.

17. What is the output of the following program?

```
main( )
{
    int i = 65 ;
    char j = 'A' ;
    if ( i == j )
        printf ( "C is WOW" ) ;
    else
        printf ( "C is a headache" ) ;
}
```

18. What is the output of the following program?

```
#include <stdio.h>

int main()
{
    int i=65; char j='A';
    if(i==j)
    {
        printf("Hello");
    }
    else;
    {
        printf("Welcome");
    }
    return 0;
}
```

19. What is the output of the following program?

```
main()
{
    int i = -1, j = 1, k, l;
    k = !i && j;
    l = !i || j;
    printf ( "%d %d", i, j );
}
```