Assignment - 3
A Job Ready Bootcamp in C++, DSA and IOT MySirG
Decision Control Statements

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1. Write a program to check whether a given number is positive or non-positive.

```
#include<stdio.h>
int main(){
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf(num>0?"Positive":"Non Positive");
    return 0;
}
```

2. Write a program to check whether a given number is divisible by 5 or not.

```
#include<stdio.h>
int main(){
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf((num%5 == 0)?"Divisible by 5":"Not Divisible by 5");
    return 0;

}
```

3. Write a program to check whether a given number is an even number or an odd number.

```
#include<stdio.h>
int main(){
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf((num%2 == 0)?"even":"odd");
    return 0;
}
```

4. Write a program to check whether a given number is an even number or an odd number without using % operator.

```
#include<stdio.h>
int main(){
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf(((num&1) == 0)?"even":"odd");
    return 0;
}
```

5. Write a program to check whether a given number is a three-digit number or not.

```
#include<stdio.h>
int main(){
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf((num>99 && num<1000)?"3-digit number":"not a 3-digit number");
    return 0;
}
```

6. Write a program to print greater between two numbers. Print one number of both are

the same.

```
#include<stdio.h>
int main(){
    int num1, num2;
    printf("Enter two numbers: ");
    scanf("%d %d", &num1, &num2);
    (num1>=num2)?printf("%d",num1):printf("%d",num2);
    return 0;
}
```

7. Write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary

```
#include<stdio.h>
int main(){
    int a,b,c,d;
    printf("Enter values of a b and c ( ax^2+bx+c) : ");
    scanf("%d%d%d",&a,&b,&c);
    d = (b*b)-(4*a*c);
    printf("Roots are ");
    printf((d>0)?"real and distinct":((d==0)?"real and equal":"imaginary"));
    return 0;
}
```

8. Write a program to check whether a given year is a leap year or not.

```
#include<stdio.h>
int main(){
    int year;
    printf("Enter year in YYYY format: ");
    scanf("%d", &year);
    printf("%d is ", year);
    printf((year%400 == 0)?"Leap year":((year%4 == 0) && (year%100 != 0)?"leap
```

```
year":"not a leap year"));
    return 0;
}
```

9. Write a program to find the greatest among three given numbers. Print number once
if the greatest number appears two or three times.

```
#include<stdio.h>

int main(){
    int a,b,c;
    printf(" Enter 3 numbers : ");
    scanf("%d %d %d", &a, &b, &c);
    printf("%d",((a>b&&a>c)?(a):((b>c)?(b):c)));
    return 0;
}
```

10. Write a program which takes the cost price and selling price of a product from the user. Now calculate and print profit or loss percentage.

```
#include<stdio.h>
int main(){
    float cp, sp;
    printf("Enter cost-price and selling-price of the product: ");
    scanf("%f %f", & cp, &sp);
    printf((sp>cp)?"profit %% is ":"loss %% is ");
    printf("%.2f%%",(sp>cp)?(((sp -cp)*100.0)/cp ):(((cp-sp)*100.0/cp )));
    return 0;
}
```

11. Write a program to take marks of 5 subjects from the user. Assume marks are given

out of 100 and passing marks is 33. Now display whether the candidate passed the examination or failed.

```
#include<stdio.h>
int main(){
    int m1, m2, m3, m4, m5;
    printf("Enter marks for 5 subjects (out of 100)");

    printf("\nEnter marks of sub1: ");
    scanf("%d", &m1);
    printf(m1>=33?"pass":"fail");

    printf("\nEnter marks of sub2: ");
    scanf("%d", &m2);
    printf(m2>=33?"pass":"fail");

    printf("\nEnter marks of sub3: ");
    scanf("%d", &m3);
    printf(m3>=33?"pass":"fail");

    printf("\nEnter marks of sub4: ");
    scanf("%d", &m4);
    printf(m4>=33?"pass":"fail");

    printf("\nEnter marks of sub5: ");
    scanf("%d", &m5);
    printf(m5>=33?"pass":"fail");
    return 0;
}
```

12. Write a program to check whether a given alphabet is in uppercase or lowercase.

```
#include<stdio.h>
int main(){
```

```
    char c;
    printf("Enter a character: ");
    scanf("%c", &c);
    printf((c>=65&&c<=90)?"UPPERCASE": (c>=97&&c<=122?"lowercase":"Not an
Alphabet"));
    return 0;
}
```

13. Write a program to check whether a given number is divisible by 3 and divisible by 2.

```
#include<stdio.h>
int main(){
    int a;
    printf("Enter a numbr: ");
    scanf("%d", &a);
    printf(((a%2 == 0)&&(a%3 == 0))?"Divisible by 3 and 2": "not divisible by 3 and 2");
    return 0;
}
```

14. Write a program to check whether a given number is divisible by 7 or divisible by 3.

```
#include<stdio.h>
int main(){
    int a;
    printf("Enter a numbr: ");
    scanf("%d", &a);
    printf(((a%7 == 0)||(a%3 == 0))?"divisible by 7 or 3": "not divisible by 7 or 3");
    return 0;
}
```

15. Write a program to check whether a given number is positive, negative or zero

```
#include<stdio.h>
int main(){
    int a;
    printf("Enter a numbr: ");
    scanf("%d", &a);
    printf((a>0)?"is positive":((a==0)?"is zero":"is negative"));
    return 0;
}
```

16. Write a program to check whether a given character is an alphabet (uppercase), an
alphabet (lower case), a digit or a special character.

```
#include<stdio.h>
int main(){
    char c;
    printf("Enter a character: ");
    scanf("%c", &c);
    printf(((c>=32 && c<=47 )||(c>=58 && c<=64) || (c>=91 && c<=96) ||(c>=123 &&
c<=126))?"special character":((c>=97 && c<=122)?("Alphabets lowercase"):((c>=65
&& c<=90)?("Alphabet Uppercase"):((c>=48 && c<=57)?"digit":"invalid"))));
    return 0;
}
```

17. Write a program which takes the length of the sides of a triangle as an input. Display
whether the triangle is valid or not.

```
#include<stdio.h>
int main(){
    int a,b,c;
    printf("Enter 3-sides of a triangle: ");
    scanf("%d %d %d",&a,&b,&c);
    printf(((a+b>c) && (a+c>b) && (b+c>a))?"valid triangle":"invalid triangle");
```

```
    return 0;
}
```

18. Write a program which takes the month number as an input and display number of days in that month

```
#include<stdio.h>
int main(){
    int m;
    printf("Enter month number(1 to 12):");
    scanf("%d", &m);
    printf("month %d has ", m);
    printf((m==2)?"28 days or 29 if its a leap yeear ":((m==4 || m==6 || m==9 ||
m==11)?"30 days":"31 days"));
    return 0;
}
```