**Assignment - 9 A Job Ready Bootcamp in C++, DSA and IOT MySirG**

**Switch Case Problems**

1. Write a program which takes the month number as an input and display

number of days in that month.

Sol – 1.

#include<stdio.h>

#include<conio.h>

int main()

{

int n;

printf("Enter month's number : ");

scanf("%d",&n);

switch(n)

{

case 1:

printf("No. of days are 31");

break;

case 2:

printf("No. of days are 28");

break;

case 3:

printf("No. of days are 31");

break;

case 4:

printf("No. of days are 30");

break;

case 5:

printf("No. of days are 31");

break;

case 6:

printf("No. of days are 30");

break;

case 7:

printf("No. of days are 31");

break;

case 8:

printf("No. of days are 31");

break;

case 9:

printf("No. of days are 30");

break;

case 10:

printf("No. of days are 31");

break;

case 11:

printf("No. of days are 30");

break;

case 12:

printf("No. of days are 31");

break;

default :

printf("Invalid Month");

}

getch();

return 0;

}

2. Write a menu driven program with the following options:

a. Addition

b. Subtraction

c. Multiplication

d. Division

e. Exit

Sol – 2.

#include<stdio.h>

#include<stdlib.h>

#include<conio.h>

int main()

{

while(1)

{

int a,b;

char n;

a: printf("\n\na. Addition\nb. Subtraction\nc. Multiplication\nd. Division\ne. Exit\n\n");

printf("Enter Choice : ");

fflush(stdin);

scanf("%c",&n);

if(n=='e')

exit(0);

if(n=='a'||n=='b'||n=='c'||n=='d')

goto b;

else

printf("\nInvalid Choice");

goto a;

b: printf("Enter two numbers : ");

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

switch(n)

{

case 'a':

printf("Addition : %d\n",a+b);

break;

case 'b':

printf("Subtraction : %d\n",a-b);

break;

case 'c':

printf("Multiplication : %d\n",a\*b);

break;

case 'd':

printf("Quotient : %d\n",a/b);

}

}

getch();

return 0;

}

3. Write a program which takes the day number of a week and displays a

unique greeting message for the day.

Sol – 3.

#include<stdio.h>

#include<conio.h>

int main()

{

int n;

printf("Enter the number of day in week : ");

scanf("%d",&n);

switch(n)

{

case 1:

printf("Happy Monday, it's time to sparkle");

break;

case 2:

printf("Happy Tuesday, it's time to shine");

break;

case 3:

printf("Have a great, Wednesday");

break;

case 4:

printf("Happy Thursday, Wishing you a day filled with joy");

break;

case 5:

printf("Happy Friday, Wishing you a day filled with happiness");

break;

case 6:

printf("Happy Saturday, have a lovely weekend");

break;

case 7:

printf("Happy Sunday, Just Chill");

break;

default :

printf("Invalid Day");

}

getch();

return 0;

}

4. Write a menu driven program with the following options:

a. Check whether a given set of three numbers are lengths of an

isosceles triangle or not

b. Check whether a given set of three numbers are lengths of sides of

a right angled triangle or not

c. Check whether a given set of three numbers are equilateral triangle

or not

d. Exit

Sol – 4.

#include<stdio.h>

#include<stdlib.h>

#include<conio.h>

int main()

{

char n;

int a,b,c;

while(1)

{

a: printf("\n\nCheck whether a given set of three numbers are lengths of\na. An isosceles triangle or not\nb. Sides of a right angled triangle or not\nc. An equilateral triangle or not\nd. Exit\n\n");

printf("Enter Choice : ");

fflush(stdin);

scanf("%c",&n);

if(n=='d')

exit(0);

if(n=='a'||n=='b'||n=='c')

goto b;

else

{

printf("\nInvalid Choice");

goto a;

}

b: printf("\nEnter length of sides : ");

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

if(a+b>c&&b+c>a&&c+a>b)

{

switch(n)

{

case 'a':

if((a==b)&&(b!=c)||(b==c)&&(c!=a)||(c==a)&&(b!=a))

printf("Triangle is isosceles\n");

else

printf("Triangle is not isosceles\n");

break;

case 'b':

if((a\*a)+(b\*b)==(c\*c)||(c\*c)+(b\*b)==(a\*a)||(a\*a)+(c\*c)==(b\*b))

printf("Triangle is right angled\n");

else

printf("Triangle is not right angled\n");

break;

case 'c':

if(a==b&&b==c)

printf("Triangle is equilateral\n");

else

printf("Triangle is not equilateral\n");

}

}

else

printf("\nNot a triangle\n");

}

getch();

return 0;

}

5. Convert the following if-else-if construct into switch case:

if(var == 1)

System.out.println("good");

else if(var == 2)

System.out.println("better");

else if(var == 3)

System.out.println("best");

else

System.out.println("invalid");

Sol – 5.

int var;

switch(var)

{

case 1:

printf("good");

break;

case 2:

printf("better");

break;

case 3:

printf("best");

break;

default :

printf("invalid");

}

6. Program to check whether a year is a leap year or not. Using switch

statement

Sol – 6.

#include<stdio.h>

#include<conio.h>

int main()

{

int n;

printf("Enter Year : ");

scanf("%d",&n);

switch (n%100)

{

case 0:

switch(n%400)

{

case 0:

printf("Leap Year");

break;

default:

printf("Not a Leap Year");

}

break;

default:

switch(n%4)

{

case 0:

printf("Leap Year");

break;

default :

printf("Not a Leap Year");

}

}

getch();

return 0;

}

7. Program to take the value from the user as input electricity unit charges

and calculate total electricity bill according to the given condition . Using

the switch statement.

For the first 50 units Rs. 0.50/unit

For the next 100 units Rs. 0.75/unit

For the next 100 units Rs. 1.20/unit

For units above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill.

Sol – 7.

#include<stdio.h>

#include<conio.h>

int main()

{

float n,bill;

printf("Enter the number of units : ");

scanf("%f",&n);

switch(n<=50)

{

case 1 :

bill=n\*0.50;

break;

case 0 :

switch(n<=150)

{

case 1 :

bill=25+(n-50)\*0.75;

break;

case 0 :

switch(n<=250)

{

case 1 :

bill=100+(n-150)\*1.20;

break;

case 0 :

bill=220+(n-250)\*1.50;

}

}

}

printf("Total amount in rupees : %f",bill+bill\*0.2);

getch();

return 0;

}

8. Program to convert a positive number into a negative number and negative

number into a positive number using a switch statement.

Sol – 8.

#include<stdio.h>

#include<conio.h>

int main()

{

int n;

printf("Enter a number : ");

scanf("%d",&n);

switch(n)

{

default:

printf("After Changing sign %d becomes %d",n,n\*-1);

}

getch();

return 0;

}

9. Program to Convert even number into its upper nearest odd number

Switch Statement.

Sol – 9.

#include<stdio.h>

#include<conio.h>

int main()

{

int n;

printf("Enter an even number : ");

scanf("%d",&n);

switch(n%2)

{

case 0:

printf("Upper nearest odd number is %d",n+1);

break;

default:

printf("%d is not even",n);

}

getch();

return 0;

}

10. C program to find all roots of a quadratic equation using switch case

Sol – 10.

#include<stdio.h>

#include<conio.h>

#include<math.h>

#include<stdlib.h>

int main()

{

int a,b,c;

float d,x,y,i1,i2;

printf("Enter the value of a,b,c : ");

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

d=b\*b-4\*a\*c;

switch(d>0)

{

case 1:

x=(-b+sqrt(d))/(2\*a);

y=(-b-sqrt(d))/(2\*a);

break;

case 0:

switch(d<0)

{

case 1:

x=(-b/(2.0\*a));

i1=((sqrt(4\*a\*c-b\*b))/(2\*a));

y=(-b/(2.0\*a));

i2=((sqrt(4\*a\*c-b\*b))/(2\*a));

printf("Roots are %f + %fi and %f - %fi",x,i1,y,i2);

exit(0);

case 0:

x=(-b/(2.0\*a));

y=(-b/(2.0\*a));

}

}

printf("Roots are %f and %f",x,y);

getch();

return 0;

}