**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.

#include<stdio.h>

int main()

{

int month\_num;

printf("Please enter Months number :");

scanf("%d",&month\_num);

switch(month\_num)

{

case 1:

printf("31 Days");

break;

case 2:

printf("28 or 29 Days");

break;

case 3:

printf("31 Days");

break;

case 4:

printf("30 Days");

break;

case 5:

printf("31 Days");

break;

case 6:

printf("30 Days");

break;

case 7:

printf("31 Days");

break;

case 8:

printf("31 Days");

break;

case 9:

printf("30 Days");

break;

case 10:

printf("31 Days");

break;

case 11:

printf("30 Days");

break;

case 12:

printf("31 Days");

break;

default:

printf("Not a valid Month Number : ");

}

return 0;

}

1. Write a menu driven program with the following options:
   1. Addition
   2. Subtraction
   3. Multiplication
   4. Division
   5. Exit

#include<stdio.h>

#include<stdlib.h>

int main()

{

int choice,a,b;

while(1)

{

printf("\na.Addition:");

printf("\nb.Subtraction:");

printf("\nc.Multiplication:");

printf("\nd.Divisions:");

printf("\ne.Exit");

printf("\nEnter your choice: ");

fflush(stdin);

scanf("%c",&choice);

switch(choice)

{

case 'a':

printf("enter two numbers :");

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

printf("The addition of %d and %d = %d :",a,b,a+b);

break;

case 'b':

printf("enter two numbers :");

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

printf("The subtraction of %d and %d = %d :",a,b,a-b);

break;

case 'c':

printf("enter two numbers :");

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

printf("The multiplication of %d and %d = %d :",a,b,a\*b);

break;

case 'd':

printf("enter two numbers :");

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

printf("The division of %d and %d = %d :",a,b,a/b);

break;

case 'e':

exit(0);

default:

printf("Invalid Choice :");

}// end of switch

printf("\n");

}// end of while

return 0;

}

1. Write a program which takes the day number of a week and displays a unique greeting message for the day.

#include<stdio.h>

int main()

{

int day;

printf("Please enter Day number 1 to 7 :");

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("Not a valid Week Day");

}

return 0;

}

1. Write a menu driven program with the following options:
   1. Check whether a given set of three numbers are lengths of an isosceles triangle or not
   2. Check whether a given set of three numbers are lengths of sides of a right angled triangle or not
   3. Check whether a given set of three numbers are equilateral triangle or not
   4. Exit

#include<stdio.h>

#include<stdlib.h>

int main()

{

int a,b,c;

char choice;

while(1)

{

printf("\na.Isosceles Triangle:");

printf("\nb.Right Angled Triangle:");

printf("\nc.Equilateral Triangle:");

printf("\nd.Exit:");

printf("\n\nEnter Your Choices: ");

fflush(stdin);

scanf("%c",&choice);

switch(choice)

{

case 'a':

printf("Enter the 3 sides of a triangle:");

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

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

printf("Isoceles Triangle:");

else

printf("Not a Isosceles Triangle:");

break;

case 'b':

printf("Enter the 3 sides of a triangle:");

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

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

printf("Right Angled Triangle:");

else

printf("Not a Right Angled Triangle:");

break;

case 'c':

printf("Enter the 3 sides of a triangle:");

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

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

printf("Equilateral Triangle:");

else

printf("Not an Equilateral Triangle:");

break;

case 'd':

exit(0);

default :

printf("Invalid Choices:");

}// end of switch

printf("\n");

}// end of while

return 0;

}

1. 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");*

#include<stdio.h>

int main()

{

int var;

printf("Enter number : ");

scanf("%d",&var);

switch(var)

{

case 1:

printf("good");

break;

case 2:

printf("better");

break;

case 3:

printf("best");

break;

default:

printf("invalid");

}

return 0;

}

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

#include<stdio.h>

int main()

{

int y;

printf("Enter year in YYYY format :");

scanf("%d",&y);

switch(y%100 == 0)

{

case 1:

switch(y%400 == 0)

{

case 1: printf("Leap Year:");break;

case 0: printf("Non Leap Year:");break;

}

break;

case 0:

switch(y%4==0)

{

case 1: printf("Leap Year");break;

case 0: printf("Non-Leap Year");break;

}

break;

}

return 0;

}

1. 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.

#include<stdio.h>

int main()

{

float x, amount =0, total=0;

printf("Enter ELECTRICITY unit :");

scanf("%f",&x);

switch(x<=50)

{

case 1: amount = x\*0.50;break;

case 0: switch(x <=150)

{

case 1: amount = 25 +(x-50)\*0.75;

break;

case 0: switch(x<=250)

{

case 1: amount = 100 +(x-150)\*1.20;

break;

case 0: amount = 220 + (x-250)\*1.50;

break;

}break;

}break;

break;

}

total = amount + amount\*0.20;

printf("Total amount = %f",total);

return 0;

}

1. Program to convert a positive number into a negative number and negative number into a positive number using a switch statement.

#include<stdio.h>

int main()

{

int x;

printf("Enter a number:");

scanf("%d",&x);

switch(x>0)

{

case 0: switch(x==0)

{

case 1: printf("%d is neither +ve nor -ve ",x);break;

case 0: printf("+%d",-1\*(x));break;

}break;

break;

case 1: printf("-%d",x);break;

}

return 0;

}

1. Program to Convert even number into its upper nearest odd number Switch Statement.

#include<stdio.h>

int main()

{

int x;

printf("Enter a number:");

scanf("%d",&x);

switch(x%2==0)

{

case 1:

x++;

printf("%d",x);

break;

case 0:

printf("%d",x);

break;

}

return 0;

}

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

#include<stdio.h>

#include<math.h>

int main()

{

int a,b,c,d,root1,root2;

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

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

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

switch(d>0)

{

case 0:switch(d==0)

{

case 1:

printf("Roots are Real and Equals:");

root1 = (-b/2\*a);

root2 = root1;

printf("\nRoot1 = Root2 = %d",root2);

break;

case 0:

printf("Roots are Imaginary:");

root1 = (-b/2\*a) + sqrt((4\*a\*c-b\*b))/2\*a;

root2 = (-b/2\*a) - sqrt((4\*a\*c-b\*b))/2\*a;

printf("\nRoot1 = %di and Root2 = %di",root1,root2);

break;

}break;

case 1:

printf("Roots real and distinct");

root1 = (-b + sqrt((b\*b-4\*a\*c))/2\*a );

root1 = (-b - sqrt((b\*b-4\*a\*c))/2\*a );

printf("\nRoot1 = %d and Root2 = %d",root1,root2);

break;

}

return 0;

}