**PROGRAMMING IN C**

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1. **Write a program for calculating Simple Interest.**

**Program**

//Write a program to calculate simple interest

#include<stdio.h>

#include<conio.h>

void main()

{

int principal,rate,years,interest;

printf("Enter principal amount : ");

scanf("%d",&principal);

printf("Enter the total number of years : ");

scanf("%d",&years);

printf("Enter the rate : %");

scanf("%d",&rate);

interest=principal\*rate\*years/100;

printf("The simple interest is = %d",interest);

getch();

}

**Output**

Enter principal amount : 20000

Enter the rate : 8

Enter the total number of years : 2

The simple interest is = 3200

1. **Write a program to find the roots of Quadratic equation using if-else.**

**Program**

//Write a program to find roots of quadratic equation using if else

#include<stdio.h>

#include<conio.h>

#include<math.h>

void main()

{

int a,b,c,d,r1,r2;

printf("Enter coefficient of x square : ");

scanf("%d",&a);

printf("Enter coefficient of x : ");

scanf("%d",&b);

printf("Enter constant : ");

scanf("%d",&c);

d=sqrt(b\*b-4\*a\*c);

r1=(-b+d)/(2\*a);

r2=(-b-d)/(2\*a);

if(d>=0)

{

printf("The real roots of quadratic equation are %d and %d",r1,r2);

}

else

{

printf("The imaginary roots of quadratic equation are %d and %d",r1,r2);

}

printf("\nThank You");

getch();

}

**Output**

Enter coefficient of x square :1

Enter coefficient of x : -5

Enter constant : 6

The real roots of quadratic equation are 3 and 2

Thank you

1. **Write a program to find the greatest out of three numbers using Nested-if.**

**Program**

//Write a program to find greatest out of three numbers

#include<stdio.h>

#include<conio.h>

void main()

{

int a,b,c;

printf("Enter number 1 : ");

scanf("%d",&a);

printf("Enter number 2 : ");

scanf("%d",&b);

printf("Enter number 3 : ");

scanf("%d",&c);

if(a>b)

{

if(a>c)

printf("The greatest number is = %d",a);

else

printf("The greatest number is = %d",c);

}

else

{

if(b>c)

printf("The greatest number is = %d",b);

else

printf("The greatest number is = %d",c);

}

getch();

}

**Output**

Enter number 1 : 2

Enter number 2 : 3

Enter number 3 : 4

The greatest number is = 4

1. **Write a program to check if alphabet is vowel or consonant.**

**Program**

//Write a program to check if alphabet is vowel or consonant

#include<stdio.h>

#include<conio.h>

void main()

{

char a;

printf("Enter an alphabet : ");

scanf("%c",&a

);

if (a=='a'||a=='e'||a=='i'||a=='o'||a=='u'||a=='A'||a=='E'||a=='I'||a=='O'||a=='U')

printf("The alphabet is a vowel");

else

printf("The alpabet is a consonant");

getch();

}

**Output**

Enter a alphabet : a

The alphabet is a vowel

1. **Write a program to check if year is leap year using else-if ladder.**

**Program**

//Write a program if the given year is a leap year or not

#include<stdio.h>

#include<conio.h>

void main()

{

int year;

printf("Enter a year : ");

scanf("%d",&year);

if(year%400==0)

{

printf("The year is a leap year");

}

else if(year%100==0)

{

printf("The year is not a leap year");

}

else if(year%4==0)

{

printf("The year is a leap year");

}

else if(year%4!=0)

{

printf("The year is not a leap year");

}

getch();

}

**Output**

Enter a year : 2020

The year is a leap year

1. **Write a program to check similarity of alphabet using conditional operator.**

**Program**

//Write a program to find the alphabet is equal to another alphabet or not

#include<stdio.h>

#include<conio.h>

void main()

{

int a1,a2;

printf("Enter a alphabet : ");

scanf("%c",&a1);

fflush(stdin);

printf("Enter a alphabet : ");

scanf("%c",&a2);

(a1==a2)?

printf("%c is equal to %c",a1,a2):

printf("%c is not equal to %c",a1,a2);

getch();

}

**Output**

Enter a alphabet :a

Enter a alphabet :b

a is not equal to b

1. **C Program to Print Day Name of Week using Else-Ifladder.**

**Program**

//write a program for printing day of the week

#include<stdio.h>

#include<conio.h>

void main()

{

int a;

printf("Enter a number from 1 to 7 for identifying the day of the week : ");

scanf("%d",&a);

if(a==1)

{

printf("The day is Monday");

}

else if(a==2)

{

printf("The day is Tuesday");

}

else if(a==3)

{

printf("The day is Wednesday");

}

else if(a==4)

{

printf("The day is Thursday");

}

else if(a==5)

{

printf("The day is Friday");

}

else if(a==6)

{

printf("The day is Saturday");

}

else if(a==7)

{

printf("The day is Sunday");

}

getch();

}

**Output**

Enter a number from 1 to 7 for identifying the day of the week : 1

The day is Monday

1. **Write a program for calculating the percentage of 3 subjects and display the first, second, third class, failed –categories using switch case statements**.

**Program**

//Write a program for calculating percentage of tree subjects with failed categories using switch case statements

Program

#include<stdio.h>

#include<conio.h>

void main()

{

int bex,prc,fcs,Totalachieved,Totalobtainable,a;

float percentage;

printf("Enter Basic electronics marks out of hundred: ");

scanf("%d",&bex);

printf("Enter Programming in C marks out of hundred : ");

scanf("%d",&prc);

printf("Enter Fundamentals of computer systems marks out of hundred : ");

scanf("%d",&fcs);

Totalachieved=bex+prc+fcs;

percentage=Totalachieved/3;

a=percentage;

printf("Your percentage is %.3f\n",percentage);

if(a>100)

{

printf("You have input wrong marks");

}

else

{

switch(a/10)

{

case 10:

case 9 :

printf("Congrats you have secured first class");

break;

case 7:

printf("Congrats you have secured second class");

break;

case 5:

printf("Congrats you have secured third class");

break;

case 0:

printf("Bad luck you have failed the examination");

break;

}

}

getch();

}

**Output**

Enter Basic electronics marks out of hundred:70

Enter Programming in C marks out of hundred :80

Enter Fundamentals of computer systems marks out of hundred :60

Your percentage is 70.000

Congrats you have secured second class

1. **Write a C program to input basicsalary of an employee and calculate gross salary according to given conditions.Basic Salary <= 10000 : HRA = 20%, DA = 80%Basic Salary is between 10001 to 20000 : HRA = 25%, DA = 90%Basic Salary >= 20001 : HRA = 30%, DA = 95%**

**Program**

//Write a program for calculating gross salary for given cinditions

#include<stdio.h>

#include<conio.h>

void main()

{

int a,hra,da,salary;

printf("Enter your basic salary : ");

scanf("%d",&a);

if(a<=10000)

{

hra=a\*20/100;

da=a\*80/100;

salary=a+hra+da;

printf("The HRA added to your basic salary is %d",hra);

printf("\nThe DA added to your basic salary is %d",da);

printf("\nThe gross salary for the given basic salary is %d",salary);

}

if((a>10001) && (a<20000))

{

hra=a\*25/100;

da=a\*90/100;

salary=a+hra+da;

printf("The HRA added to your basic salary is %d",hra);

printf("\nThe DA added to your basic salary is %d",da);

printf("\nThe gross salary for the given basic salary is %d",salary);

}

if(a>=20001)

{

hra=a\*30/100;

da=a\*95/100;

salary=a+hra+da;

printf("The HRA added to your basic salary is %d",hra);

printf("\nThe DA added to your basic salary is %d",da);

printf("\nThe gross salary for the given basic salary is %d",salary);

}

getch();

}

**Output**

Enter your basic salary :10000

The HRA added to your basic salary is 2000

The DA added to your basic salary is 8000

The gross salary for the given basic salary is 20000

1. **Write a program to check if number is even or odd using switch case.**

Program

#include<stdio.h>

#include<conio.h>

void main()

{

int a;

printf("\nEnter number 1 : ");

scanf("%d",&a);

switch(a%2)

{

case 0:

printf("%d is an even number",a);

break;

case 1:

printf("%d is an odd number",a);

}

getch();

}

**Output**

Enter number 1 : 2

2 is an even number

1. **Write a menu driven program using switch case to find the area of circle, rectangle & triangle. (Make use of at least one constant).**

**Program**

//Write a program for menu driven switch case area of circle rectangle and triangle

#include<stdio.h>

#include<conio.h>

#define pi 3.14

void main()

{

int l,b,arear,choice;

float r,areac,base,height,areat;

printf("\*\*\*\*\*\*\*MENU\*\*\*\*\*\*\*");

printf("\n\n(1). Area of circle");

printf("\n(2). Area of rectangle");

printf("\n(3). Area of triangle");

printf("\n\nEnter your choice from menu : ");

scanf("%d",&choice);

switch(choice)

{

case 1:

printf("\nEnter radius of the circle : ");

scanf("%f",&r);

areac=pi\*r\*r;

printf("\nArea of circle is = %.3f",areac);

break;

case 2:

printf("\nEnter length of the rectangle : ");

scanf("%d",&l);

printf("\nEnter breadth of the rectangle : ");

scanf("%d",&b);

arear=l\*b;

printf("\nArea of rectangle is = %d",arear);

break;

case 3:

printf("\nEnter base of the triangle : ");

scanf("%f",&base);

printf("\nEnter height of the triangle : ");

scanf("%f",&height);

areat=0.5\*base\*height;

printf("\nArea of triangle is = %0.1f",areat);

break;

default :

printf("\nInvalid input");

break;

}

printf("\n\nThank You");

getch();

}

**Output**

\*\*\*\*\*\*\*MENU\*\*\*\*\*\*\*

(1). Area of circle

(2). Area of rectangle

(3). Area of triangle

Enter your choice from menu : 2

Enter length of the rectangle : 2

Enter breadth of the rectangle : 3

Area of rectangle is = 6

Thank You