**C Programming Exercises:**

***1).WAP a c program to count no. Of digit in given number:-***

#include <stdio.h>

#include<math.h>

int

main ()

{

int num ,a;

a == 0;

printf ("Pls enter Some values to count:\n");

scanf ("%d", &num);

while (num != 0)

{

a++;

num /= 10;

}

printf("Total digits In given No. is=%d",a);

return 0;

}

***2).WAP a c program to swap first digit and last digit:-***

#include <stdio.h>

#include<math.h>

int

main ()

{

int num, swappedNum, lastdigit, firstdigit, digit;

printf ("Pls Enter Some values to swape :\n");

scanf ("%d", &num);

lastdigit = num % 10;

digit = (int) log10 (num);

firstdigit = (int) num / pow (10, digit);

swappedNum = lastdigit;

swappedNum \*= (int) pow (10, digit);

swappedNum += num % ((int) pow (10, digit));

swappedNum -= lastdigit;

swappedNum += firstdigit;

printf("%d",swappedNum);

return 0;

}

***3).WAP to find frequency of each digit in given number :-***

#include <stdio.h>

int main()

{

int num, n;

int i, lastDigit;

int freq[10]={0,1,2,3,4,5,6,7,8,9};

printf("Enter any number: ");

scanf("%d", &num);

for(i=0; i<10; i++)

{

freq[i] = 0;

}

n = num;

while(n != 0)

{

lastDigit = n % 10;

n /= 10;

freq[lastDigit]++;

}

printf("Frequency of each digit in %d is: \n", num);

for(i=0; i<10; i++)

{

printf("Frequency of %d = %d\n", i, freq[i]);

}

return 0;

}

***4).WAP to enter a number and print it into word:-***

**#include <stdio.h>**

**int main()**

**{**

**int n, num = 0;**

**printf("Enter any number to print in words: \n");**

**scanf("%d", &n);**

**while(n != 0)**

**{**

**num = (num \* 10) + (n % 10);**

**n /= 10;**

**}**

**while(num != 0)**

**{**

**switch(num % 10)**

**{**

**case 0:**

**printf("Zero ");**

**break;**

**case 1:**

**printf("One ");**

**break;**

**case 2:**

**printf("Two ");**

**break;**

**case 3:**

**printf("Three ");**

**break;**

**case 4:**

**printf("Four ");**

**break;**

**case 5:**

**printf("Five ");**

**break;**

**case 6:**

**printf("Six ");**

**break;**

**case 7:**

**printf("Seven ");**

**break;**

**case 8:**

**printf("Eight ");**

**break;**

**case 9:**

**printf("Nine ");**

**break;**

**}**

**num = num / 10;**

**}**

**return 0;**

**}**

***5).WAP to print all the ASCII character with their values:-***

***#include<stdio.h>***

***int main()***

***{***

***int i;***

***char ch;***

***for (i = 0; i < 256; i++)***

***{***

***printf("The ASCII vlue of %c is%d\n ", ch,i);***

***ch = ch + 1;***

***}***

***}***

***6).WAP to find 1’s compliment of given binary number***

***#include <stdio.h>***

***int***

***main ()***

***{***

***char binary[9], onesComp[9];***

***int i, error = 0;***

***printf ("Enter %d bit binary value: ", 8);***

***gets (binary);***

***for (i = 0; i < 8; i++)***

***{***

***if (binary[i] == '1')***

***{***

***onesComp[i] = '0';***

***}***

***else if (binary[i] == '0')***

***{***

***onesComp[i] = '1';***

***}***

***else***

***{***

***printf ("Invalid Input");***

***error = 1;***

***break;***

***}***

***}***

***onesComp[8] = '\0';***

***if (error == 0)***

***{***

***printf ("Original binary = %s\n", binary);***

***printf ("Ones complement = %s", onesComp);***

***}***

***return 0;***

***}***

***8).WAP to convert binary to octal:-***

**#include <stdio.h>**

**#include<math.h>**

**int convert (int bin);**

**int**

**main ()**

**{**

**int bin;**

**printf ("Enter a binary number: ");**

**scanf ("%d", &bin);**

**printf ("%d in binary = %d in octal", bin, convert (bin));**

**return 0;**

**}**

**int**

**convert (int bin)**

**{**

**int oct = 0, dec = 0;**

**int i = 0;**

**while (bin != 0)**

**{**

**dec =dec+ (bin % 10) \* pow (2, i);**

**++i;**

**bin =bin/ 10;**

**}**

**i = 1;**

**while (dec != 0)**

**{**

**oct =oct+ (dec % 8) \* i;**

**dec =dec/ 8;**

**i =i\* 10;**

**}**

**return oct;**

**}**

*9). Write a C program to convert Binary to Decimal number system.*

#include <stdio.h>

#include<math.h>

int covert(int);

int main()

{

int a;

printf("Enter binary to covert into decimal :\n");

scanf("%d",&a);

printf("binary=%d\ndecimal%d\n",a,convert(a));

return 0;

}

int convert(int a)

{

int dec=0,i=0;

while(a!=0)

{

dec=dec+a%10\*pow(2,i);

++i;

a=a/10;

}

}

***10. Write a C program to convert Binary to Hexadecimal number system:-***

#include <stdio.h>

#include<math.h>

#include<conio.h>

long int convert(long int);

int main()

{

long int a;

printf("Enter the binary to convert into hexadecimal:\n");

scanf("%d",&a);

printf("Binary=%ld\nHexadecimal=%ld",a,convert(a));

return 0;

}

long int convert( long int a)

{

int dec=0,hexa=0,i=0;

while(a!=0)

{

dec=dec+a%10\*pow(2,i);

++i;

a=a/10;

}

i=1;

while(dec!=0)

{

hexa=hexa+dec%16\*i;

i=i\*10;

dec=dec/16;

}

return hexa;

}

***11. Write a C program to convert Octal to Binary number system.:-***

#include<stdio.h>

#include<math.h>

#include<canio.h>

int convert(int);

int main()

{

int a;

printf("enter octal value to convert into binary:\n ");

scanf("%d",&a);

printf("octal=%d\nbinary=%d",a,convert(a));

return 0;

}

int convert(int a)

{

int dec=0,bin=0,i=0;

while(a!=0)

{

dec=dec+a%10\*pow(8,i);

++i;

a=a/10;

}

i=1;

while(dec!=0)

{

bin=bin+dec%2\*i;

i=i\*10;

dec=dec/2;

}

return bin;

}

***12. Write a C program to convert Octal to Decimal number system.***

#include<stdio.h>

#include<math.h>

int convert(int);

int main()

{

int a;

printf("enter octal value to convert into decimal:\n ");

scanf("%d",&a);

printf("octal=%d\ndecimal=%d",a,convert(a));

return 0;

}

int convert(int a)

{

int dec=0,i=0;

while(a!=0)

{

dec=dec+a%10\*pow(8,i);

++i;

a=a/10;

}

return dec;

}

***13. Write a C program to convert Octal to Hexadecimal number system.***

#include<stdio.h>

#include<math.h>

#include<conio.h>

int convert (int);

main ()

{

int a, x;

printf ("enter the octal value to convert into Hexadecimal:\n");

scanf ("%d", &a);

x = convert (a);

printf ("Hexadecimal=%d", x);

return 0;

}

int

convert (int a)

{

int hexa = 0, dec = 0, i = 0;

while (a != 0)

{

dec = dec + a % 10 \* pow (8, i);

++i;

a = a / 10;

}

i = 1;

while (dec != 0)

{

hexa = hexa + dec % 16\* i;

i = i \* 10;

dec = dec / 16;

}

return hexa;

}

***14. Write a C program to convert Decimal to Binary number system.***

#include<stdio.h>

#include<math.h>

int convert (int);

main ()

{

int a, x;

printf ("Enter the Decimal value to convert into Binary:\n");

scanf ("%d", &a);

x = convert (a);

printf ("binary=%d", x);

return 0;

}

int

convert (int a)

{

int bin=0,i=1;

while (a != 0)

{

bin = bin + a % 2\* i;

i = i \* 10;

a = a / 2;

}

return bin;

}

***15. Write a C program to convert Decimal to Octal number system.***

#include<stdio.h>

#include<math.h>

int convert (int);

main ()

{

int a, x;

printf ("Enter the Decimal value to convert into Binary:\n");

scanf ("%d", &a);

x = convert (a);

printf ("binary=%d", x);

return 0;

}

int

convert (int a)

{

int bin=0,i=1;

while (a != 0)

{

bin = bin + a % 8\* i;

i = i \* 10;

a = a / 8;

}

return bin;

}

***16. Write a C program to convert Decimal to Hexadecimal number system.***

#include<stdio.h>

#include<math.h>

#include<conio.h>

int convert (int);

main ()

{

int a, x;

printf ("Enter the Decimal value to convert into Hexadecimal : \n");

scanf ("%d", &a);

x = convert (a);

printf ("Hexadecimal=%x", x);

return 0;

}

int

convert (int a)

{

int bin=0,i=1;

while (a != 0)

{

bin = bin + a % 16\* i;

i = i \* 10;

a = a / 16;

}

return bin;

}

***17. Write a C program to convert Hexadecimal to Binary number system.***

#include<stdio.h>

#include<math.h>

#include<conio.h>

int convert (int);

main ()

{

int a, x;

printf ("Enter the Hexadecimal value to convert into Binary:\n");

scanf ("%d", &a);

x = convert (a);

printf ("binary=%d", x);

return 0;

}

int

convert (int a)

{

int hexa=0, bin=0,i=0;

while(a!=0)

{

hexa=hexa+a%10\*pow(16,i);

++i;

a=a/10;

}

i=1;

while (hexa!= 0)

{

bin = bin + hexa % 2\* i;

i = i \* 10;

hexa = hexa / 2;

}

return bin;

}

***18. Write a C program to convert Hexadecimal to Octal number system.***

#include<stdio.h>

#include<math.h>

#include<conio.h>

int convert (int);

main ()

{

int a, x;

printf ("Enter the Hexadecimal value to convert into octal:\n");

scanf ("%d", &a);

x = convert (a);

printf ("octal=%d", x);

return 0;

}

int

convert (int a)

{

int hexa=0, oct=0,i=0;

while(a!=0)

{

hexa=hexa+a%10\*pow(16,i);

++i;

a=a/10;

}

i=1;

while (hexa!= 0)

{

oct = oct + hexa % 8\* i;

i = i \* 10;

hexa = hexa / 8;

}

return oct;

}

***19. Write a C program to convert Hexadecimal to Decimal number system.***

#include<stdio.h>

#include<math.h>

#include<conio.h>

int convert (int);

main ()

{

int a, x;

printf ("Enter the Hexadecimal value to convert into Decimal:\n");

scanf ("%d", &a);

x = convert (a);

printf ("Decimal=%d", x);

return 0;

}

int

convert (int a)

{

int deci=0,i=0;

while(a!=0)

{

deci=deci+a%10\*pow(16,i);

++i;

a=a/10;

}

return deci;

}

**If…Else Exercises:**

***1.Write a C program to check whether a number is divisible by 5 and 11 or not.***

#include<stdio.h>

#include<math.h>

main()

{

int a;

printf("Enter any number to check whether it is divisible by 5 and 11:\n");

scanf("%d",&a);

if(a%5==0&&a%11==0)

printf("%d is divisible by 5 and 11",a);

else

printf("%d is not divisible by 5 and 11",a);

return 0;

}

***2. Write a C program to check whether a character is uppercase or lowercase alphabet.***

#include<stdio.h>

int

main()

{

char ch,A,Z;

printf("Enter any character to check whether it is uppercase or lowercase alphabet:\n");

scanf("%c",&ch);

if(ch>='A'&&ch<='Z')

printf("%c character is uppercase",ch);

else if(ch>='a'&&ch<='z')

printf("%c character is lowercase",ch);

return 0;

}

***3. Write a C program to input week number and print week day.***

#include <stdio.h>

int main()

{

int week;

printf("Enter week number (1-7): ");

scanf("%d", &week);

if(week == 1)

{

printf("Monday");

}

else if(week == 2)

{

printf("Tuesday");

}

else if(week == 3)

{

printf("Wednesday");

}

else if(week == 4)

{

printf("Thursday");

}

else if(week == 5)

{

printf("Friday");

}

else if(week == 6)

{

printf("Saturday");

}

else if(week == 7)

{

printf("Sunday");

}

else

{

printf("Invalid Input! Please enter week number between 1-7.");

}

return 0;

}

***4. Write a C program to input month number and print number of days in that month.***

#include<stdio.h>

int main()

{

int a,b;

printf("Enter the Month no. (1-12) to print no. of days in that month:\n ");

scanf("%d",&a);

if(a%4==0||a%6==0||a%10==0||a%12==0)

printf("There are 30 days in this Month");

else if(a==2)

{

printf("Pls Enter 1. leapyear\n\t\ 2. Non-leapyear:\n");

scanf("%d",&b);

if(b==1)

printf("There are 29 days ");

else if(b==2)

printf("There are 28 days");

}

else if(a==8)

printf("There are 31 days in this month");

else

printf("There are 31 days in this month");

}

**5. Write a C program to count total number of notes in given amount.**

#include<stdio.h>

int main()

{

int a[9]={2000,500,100,50,20,10,5,2,1},m,temp,i;

printf("Enter the amount:");

scanf("%d",&m);

temp=m;

for(i=0;i<9;i++)

{

printf("\n%d notes is:%d",a[i],temp/a[i]);

temp=temp%a[i];

}

}

***6. Write a C program to input month number and print number of days in that month.***

#include<stdio.h>

int main()

{

int a,b;

printf("Enter the Month no. (1-12) to print no. of days in that month:\n ");

scanf("%d",&a);

if(a%4==0||a%6==0||a%10==0||a%12==0)

printf("There are 30 days in this Month");

else if(a==2)

{

printf("Pls Enter 1. leapyear\n\t\ 2. Non-leapyear:\n");

scanf("%d",&b);

if(b==1)

printf("There are 29 days ");

else if(b==2)

printf("There are 28 days");

}

else if(a==8)

printf("There are 31 days in this month");

else

printf("There are 31 days in this month");

}

***7. Write a C program to input angles of a triangle and check whether triangle is valid or not.***

#include<stdio.h>

int main()

{

int a,b,c,sum=180;

printf("Enter first angle of triangle: ");

scanf("%d",&a);

printf("Enter second angle of triangle: ");

scanf("%d",&b);

printf("Enter third angle of triangle: ");

scanf("%d",&c);

if(sum==a+b+c)

printf("The triangle is valid");

else

printf("The triangle is not valid");

return 0;

}

***8. Write a C program to input all sides of a triangle and check whether triangle is valid or not.***

#include<stdio.h>

#include<math.h>

int main()

{

int a,b,c;

printf("Enter the first side of the triangle :");

scanf("%d",&a);

printf("Enter the second side of the triangle :");

scanf("%d",&b);

printf("Enter the third side of the triangle :");

scanf("%d",&c);

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

printf("This is valid triangle");

else

printf("This not a valid triangle");

return 0;

}

***9. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.***

#include<stdio.h>

#include<math.h>

int main()

{

int a,b,c;

printf("Enter Three sides of triangle to check whether it is equilateral, isosceles,scalene triangle\n");

printf("Enter first side: ");

scanf("%d",&a);

printf("Enter second side: ");

scanf("%d",&b);

printf("Enter third side: ");

scanf("%d",&c);

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

{

printf("Triangle is equilateral ");

}

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

{

printf("Triangle is isosceles");

}

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

{

printf("Triangle is scalene");

}

return 0;

}

***10. Write a C program to calculate profit or loss.***

#include<stdio.h>

#include<math.h>

int main()

{

int a,b,profit,loss;

printf("Enter the Buying Amount: ");

scanf("%d",&a);

printf("Enter the selling Amount: ");

scanf("%d",&b);

profit=b-a;

loss=a-b;

if (b>a)

printf("Profit=%d percent",100\*profit/a);

else if(b<a)

printf("Loss=%d percent ",100\*loss/a);

return 0;

}

***11. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and***

***Computer. Calculate percentage and grade according to following:***

***Percentage >= 90% : Grade A***

***Percentage >= 80% : Grade B***

***Percentage >= 70% : Grade C***

***Percentage >= 60% : Grade D***

***Percentage >= 40% : Grade E***

***Percentage < 40% : Grade F***

#include<stdio.h>

#include<math.h>

int main()

{

int a,b,c,d,e,sum,Percentage;

printf("Enter the marks of Physics: ");

scanf("%d",&a);

printf("Enter the marks of Chemistry: ");

scanf("%d",&b);

printf("Enter the marks of Biology: ");

scanf("%d",&c);

printf("Enter the marks of Mathematics: ");

scanf("%d",&d);

printf("Enter the marks of Computer: ");

scanf("%d",&e);

sum=a+b+c+d+e;

Percentage=sum/5;

if(Percentage>=90)

printf("Percentage=%d percent\n Grade=A",Percentage);

else if(Percentage>=80)

printf("Percentage=%d percent\n Grade=B",Percentage);

else if(Percentage>=70)

printf("Percentage=%d percent\n Grade=C",Percentage);

else if(Percentage>=60)

printf("Percentage=%d percent\n Grade=D",Percentage);

else if(Percentage>=40)

printf("Percentage=%d percent\n Grade=E",Percentage);

else if(Percentage<40)

printf("Percentage=%d percent\n Grade=F",Percentage);

return 0;

}

***12. Write a C program to input basic salary of an employee and calculate its Gross salary according to***

***following:***

***Basic Salary <= 10000 : HRA = 20%, DA = 80%***

***Basic Salary <= 20000 : HRA = 25%, DA = 90%***

***Basic Salary > 20000 : HRA = 30%, DA = 95%***

**#include <stdio.h>**

**int main()**

**{**

**int basic, gross, da, hra;**

**printf("Enter basic salary of an employee: ");**

**scanf("%d", &basic);**

**if(basic <= 10000)**

**{**

**da = basic \* 80/100;**

**hra = basic \* 20/100;**

**}**

**else if(basic <= 20000)**

**{**

**da = basic \* 90/100;**

**hra = basic \* 25/100;**

**}**

**else**

**{**

**da = basic \* 95/100;**

**hra = basic \* 30/100;**

**}**

**gross = basic + hra + da;**

**printf("GROSS SALARY OF EMPLOYEE = %d", gross);**

**return 0;**

**}**

***13. Write a C program to input electricity unit charges and calculate total electricity bill according to***

***the given condition:***

***For first 50 units Rs. 0.50/unit***

***For next 100 units Rs. 0.75/unit***

***For next 100 units Rs. 1.20/unit***

***For unit above 250 Rs. 1.50/unit***

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

**#include <stdio.h>**

**int main()**

**{**

**int unit;**

**float amt, total\_amt, sur\_charge;**

**printf("Enter total units consumed: ");**

**scanf("%d", &unit);**

**if(unit <= 50)**

**{**

**amt = unit \* 0.50;**

**}**

**else if(unit <= 150)**

**{**

**amt = 25 + ((unit-50) \* 0.75);**

**}**

**else if(unit <= 250)**

**{**

**amt = 100 + ((unit-150) \* 1.20);**

**}**

**else**

**{**

**amt = 220 + ((unit-250) \* 1.50);**

**}**

**sur\_charge = amt \* 0.20;**

**total\_amt = amt + sur\_charge;**

**printf("Electricity Bill = Rs. %.2f", total\_amt);**

**return 0;**

**}**