1. Write a C program to input marks of five subjects of a student and calculate total, average and percentage of all subjects. How to calculate total, average and percentage in C programming. Logic to find total, average and percentage in C program.

Answer:

#include <stdio.h>

int main()

{

float eng, phy, chem, math, comp;

float total, average, percentage;

printf("Enter marks of five subjects: \n");

scanf("%f%f%f%f%f", &eng, &phy, &chem, &math, &comp);

total = eng + phy + chem + math + comp;

average = total / 5.0;

percentage = (total / 500.0) \* 100;

printf("Total marks = %.2f\n", total);

printf("Average marks = %.2f\n", average);

printf("Percentage = %.2f", percentage);

return 0;

} Output : Total = 435

Average = 87

Percentage = 87.00

1. Write a C program to input principle, time and rate (P, T, R) from user and find Simple Interest. How to calculate simple interest in C programming. Logic to find simple interest in C program.

Answer:

#include <stdio.h>

int main()

{

float principle, time, rate, SI;

printf("Enter principle (amount): ");

scanf("%f", &principle);

printf("Enter time: ");

scanf("%f", &time);

printf("Enter rate: ");

scanf("%f", &rate);

SI = (principle \* time \* rate) / 100;

printf("Simple Interest = %f", SI);

return 0;

} Output : Simple Interest = 129.600006

1. Write a C program to input principle (amount), time and rate (P, T, R) and find Compound Interest. How to calculate compound interest in C programming. Logic to calculate compound interest in C program.

Answer :

#include <stdio.h>

#include <math.h>

int main()

{

float principle, rate, time, CI;

printf("Enter principle (amount): ");

scanf("%f", &principle);

printf("Enter time: ");

scanf("%f", &time);

printf("Enter rate: ");

scanf("%f", &rate);

CI = principle\* (pow((1 + rate / 100), time));

printf("Compound Interest = %f", CI);

return 0;

} Output : Compound Interest = 1333.099243

1. Write a C program to input number of days from user and convert it to years, weeks and days. How to convert days to years, weeks in C programming. Logic to convert days to years, weeks and days in C program.

Answer :

#include <stdio.h>

int main()

{

int days, years, weeks;

printf("Enter days: ");

scanf("%d", &days);

years = (days / 365);

weeks = (days % 365) / 7;

days = days - ((years \* 365) + (weeks \* 7));

printf("YEARS: %d\n", years);

printf("WEEKS: %d\n", weeks);

printf("DAYS: %d", days);

return 0;

} Output : 373 days = 1 year/s, 1 week/s and 1 day/s

1. Write a C Program to input two angles from user and find third angle of the triangle. How to find all angles of a triangle if two angles are given by user using C programming. C program to calculate the third angle of a triangle if two angles are given.

Answer :

#include <stdio.h>

int main()

{

int a, b, c;

printf("Enter two angles of triangle: ");

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

c = 180 - (a + b);

printf("Third angle of the triangle = %d", c);

return 0;

}

Output : Third angle = 40

1. Write a C program to input side of an equilateral triangle from user and find area of the given triangle. How to find area of an equilateral triangle in C programming. C program to calculate area of an equilateral triangle if its side is given.

Answer :

#include <stdio.h>

#include <math.h>

int main()

{

float side, area;

printf("Enter side of an equilateral triangle: ");

scanf("%f", &side);

area = (sqrt(3) / 4) \* (side \* side);

printf("Area of equilateral triangle = %.2f sq. units", area);

return 0;

}

Output : Area of equilateral triangle = 43.3 sq. units

1. Write a C program to input two numbers and find maximum between two numbers using conditional/ternary operator ?:. How to find maximum or minimum between two numbers using conditional operator in C program.

Answer :

#include <stdio.h>

int main()

{

int num1, num2, max;

printf("Enter two numbers: ");

scanf("%d%d", &num1, &num2);

max = (num1 > num2) ? num1 : num2;

printf("Maximum between %d and %d is %d", num1, num2, max);

return 0;

}

Output : Maximum: 20

1. Write a C program to input a character and check whether the character is alphabet or not using Conditional/Ternary operator ?:. How to check alphabets using conditional operator in C programming.

Answer :

#include <stdio.h>

int main()

{

char ch;

printf("Enter any character: ");

scanf("%c", &ch);

(ch>='a' && ch<='z') || (ch>='A' && ch<='Z')

? printf("It is ALPHABET")

: printf("It is NOT ALPHABET");

return 0;

}

Output : It is ALPHABET

1. Write a C program to input a number and check whether number is even or odd using Conditional/Ternary operator.

Answer :

#include <stdio.h>

int main()

{

int num;

printf("Enter any number to check even or odd: ");

scanf("%d", &num);

(num%2 == 0)

? printf("The number is EVEN")

: printf("The number is ODD");

return 0;

}

Output : 10 is even.

1. Write a C program to input three numbers from user and find maximum between three numbers using conditional/ternary operator.

Answer :

#include <stdio.h>

int main()

{

int num1, num2, num3, max;

printf("Enter three numbers: ");

scanf("%d%d%d", &num1, &num2, &num3);

max = (num1 > num2 && num1 > num3) ? num1 :

(num2 > num3) ? num2 : num3;

printf("\nMaximum between %d, %d and %d = %d", num1, num2, num3, max);

return 0;

}

Output : Maximum is 30

1. Write a C program to input cost price and selling price of a product and check profit or loss.

Answer.

#include <stdio.h>

int main()

{

int cp,sp, amt;

printf("Enter cost price: ");

scanf("%d", &cp);

printf("Enter selling price: ");

scanf("%d", &sp);

if(sp > cp)

{

amt = sp - cp;

printf("Profit = %d", amt);

}

else if(cp > sp)

{

amt = cp - sp;

printf("Loss = %d", amt);

}

else

{

printf("No Profit No Loss.");

}

return 0;

}

Output : Profit: 500

1. Write a C program to input sides of a triangle and check whether a triangle is equilateral.

Answer :

#include <stdio.h>

int main()

{

int side1, side2, side3;

printf("Enter three sides of triangle: ");

scanf("%d%d%d", &side1, &side2, &side3);

if(side1==side2 && side2==side3)

{

printf("Equilateral triangle.");

}

else if(side1==side2 || side1==side3 || side2==side3)

{

printf("Isosceles triangle.");

}

else

{

printf("Scalene triangle.");

}

return 0;

}

Output : Triangle is equilateral triangle

1. Write a C program to enter month number between(1-12) and print number of days in month.

Answer :

#include <stdio.h>

int main()

{

int month;

printf("Enter month number (1-12): ");

scanf("%d", &month);

if(month == 1)

{

printf("31 days");

}

else if(month == 2)

{

printf("28 or 29 days");

}

else if(month == 3)

{

printf("31 days");

}

else if(month == 4)

{

printf("30 days");

}

else if(month == 5)

{

printf("31 days");

}

else if(month == 6)

{

printf("30 days");

}

else if(month == 7)

{

printf("31 days");

}

else if(month == 8)

{

printf("31 days");

}

else if(month == 9)

{

printf("30 days");

}

else if(month == 10)

{

printf("31 days");

}

else if(month == 11)

{

printf("30 days");

}

else if(month == 12)

{

printf("31 days");

}

else

{

printf("Invalid input! Please enter month number between (1-12).");

}

return 0;

}

Output : It contains 31 days.

1. Write a c program create a simple calculator using switch case.

Answer:

#include <stdio.h>

int main(){

char op;

float num1, num2, result=0.0f;

printf("WELCOME TO SIMPLE CALCULATOR\n");

printf("----------------------------\n");

printf("Enter [number 1] [+ - \* /] [number 2]\n");

scanf("%f %c %f", &num1, &op, &num2);

switch(op) {

case '+':

result = num1 + num2;

break;

case '-':

result = num1 - num2;

break;

case '\*':

result = num1 \* num2;

break;

case '/':

result = num1 / num2;

break;

default:

printf("Invalid operator"); }

printf("%.2f %c %.2f = %.2f", num1, op, num2, result);

return 0;

} Output : 2.2

1. Write a C program to print all odd numbers from 1 to n.

Answer:

#include <stdio.h>

int main()

{

int i, n;

printf("Print odd numbers till: ");

scanf("%d", &n);

printf("All odd numbers from 1 to %d are: \n", n);

for(i=1; i<=n; i++)

{

if(i%2!=0)

{

printf("%d\n", i);

}

}

return 0;

} Output : Odd numbers between 1 to 10: 1, 3, 5, 7, 9

1. Write a C program to input number from user and check number is palindrome or not.

Answer :

#include <stdio.h>

int main()

{

int n, num, rev = 0;

printf("Enter any number to check palindrome: ");

scanf("%d", &n);

num = n;

while(n != 0)

{

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

n /= 10;

}

if(rev == num)

{

printf("%d is palindrome.", num);

}

else

{

printf("%d is not palindrome.", num);

}

return 0;

}

Output : 121 is palindrome

1. Write a C program to input a number from user and find Prime factors of the given number.

Answer:

#include <stdio.h>

int main()

{

int i, j, num, isPrime;

printf("Enter any number to print Prime factors: ");

scanf("%d", &num);

printf("All Prime Factors of %d are: \n", num);

for(i=2; i<=num; i++)

{

if(num%i==0)

{

isPrime = 1;

for(j=2; j<=i/2; j++)

{

if(i%j==0)

{

isPrime = 0;

break;

}

}

if(isPrime==1)

{

printf("%d, ", i);

}

}

}

return 0;

} Output : Prime factors of 10: 2, 5

1. Write a C program to print square star(\*) pattern series of N rows.

Answer :

#include <stdio.h>

int main()

{

int i, j, N;

printf("Enter number of rows: ");

scanf("%d", &N);

for(i=1; i<=N; i++)

{

for(j=1; j<=N; j++)

{

printf("\*");

}

printf("\n");

}

return 0;

}

1. Write a C program to print equilateral triangle or Pyramid star pattern series of n rows.

Answer :

#include <stdio.h>

int main()

{

int i, j, rows;

printf("Enter number of rows : ");

scanf("%d", &rows);

for(i=1; i<=rows; i++)

{

for(j=i; j<rows; j++)

{

printf(" ");

}

for(j=1; j<=(2\*i-1); j++) {

printf("\*"); }

printf("\n"); }

return 0;

}

1. Write a C program to print diamond star pattern.

Answer :

#include <stdio.h>

int main()

{

int i, j, rows;

int stars, spaces;

printf("Enter rows to print : ");

scanf("%d", &rows);

stars = 1;

spaces = rows - 1;

for(i=1; i<rows\*2; i++)

{

for(j=1; j<=spaces; j++)

printf(" ");

for(j=1; j<stars\*2; j++)

printf("\*");

printf("\n");

if(i<rows)

{

spaces--;

stars++;

}

else

{

spaces++;

stars--;

}

}

return 0;

}

1. Write a C program to print heart star pattern.

Answer :

#include <stdio.h>

int main()

{

int i, j, n;

printf("Enter value of n : ");

scanf("%d", &n);

for(i=n/2; i<=n; i+=2)

{

for(j=1; j<n-i; j+=2)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf("\*");

}

for(j=1; j<=n-i; j++)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf("\*");

}

printf("\n");

}

for(i=n; i>=1; i--)

{

for(j=i; j<n; j++)

{

printf(" ");

}

for(j=1; j<=(i\*2)-1; j++)

{

printf("\*");

}

printf("\n");

}

return 0;

}

1. Voting machine system make by C programing.

Answer.

#include<stdio.h>

#include<string.h>

int main() {

int BJP = 0, CONG = 0, SP = 0, INC = 0;

while (1) {

int age;

char name[10];

char gender[10];

printf("Please enter your gender (Male or Female): ");

scanf("%s", gender);

printf("Enter your name: ");

scanf("%s", name);

if (strcmp(gender, "Male") == 0) {

printf("Mr. %s\n", name);

} else if (strcmp(gender, "Female") == 0) {

printf("Mrs. %s\n", name);

} else {

printf("You filled in the wrong details. please Try again.\n");

continue;

}

printf("Please enter your age: ");

scanf("%d", &age);

if (age >= 18) {

int num;

printf("You are eligible for giving a vote.\n");

printf("Press 1 for BJP\nPress 2 for CONG\nPress 3 for SP\nPress 4 for INC\n");

printf("Please enter your number (1-4) to give a vote: ");

scanf("%d", &num);

switch (num) {

case 1:

printf("Your vote is submitted to BJP.\n");

BJP++;

break;

case 2:

printf("Your vote is submitted to CONG.\n");

CONG++;

break;

case 3:

printf("Your vote is submitted to SP.\n");

SP++;

break;

case 4:

printf("Your vote is submitted to INC.\n");

INC++;

break;

default:

printf("You have entered a wrong number.\n");

printf("Please try again.\n");

continue;

}

printf("\n\*\*\*\*\*\*\*\*\* Vote Count \*\*\*\*\*\*\*\*\*\n");

printf("BJP Got %d Votes\n", BJP);

printf("CONG Got %d Votes\n", CONG);

printf("SP Got %d Votes\n", SP);

printf("INC Got %d Votes\n", INC);

if (BJP > CONG && BJP > SP && BJP > INC) {

printf("BJP won the election\n");

} else if (CONG > BJP && CONG > SP && CONG > INC) {

printf("CONG won the election\n");

} else if (SP > BJP && SP > CONG && SP > INC) {

printf("SP won the election\n");

} else {

printf("INC won the election\n");

}

} else {

printf("Sorry, you are not eligible for giving a vote.\n");

}

char choice;

printf("Do you want to continue (yes/no)? ");

scanf(" %c", &choice);

if (choice != 'y' && choice != 'Y') {

break;

}

}

return 0;

}

1. Write a C program to print the given chessboard number pattern of 1’s and 0’s.

Answer .

#include <stdio.h>

int main()

{

int rows, cols, i, j, k;

printf("Enter number of rows: ");

scanf("%d", &rows);

printf("Enter number of columns: ");

scanf("%d", &cols);

k = 1;

for(i=1; i<=rows; i++)

{

for(j=1; j<=cols; j++)

{

if(k == 1)

{

printf("1");

}

else

{

printf("0");

}

k \*= -1;

}

if(cols % 2 == 0)

{

k \*= -1;

}

printf("\n");

}

return 0;

}

1. Write a C program to print the given half diamond star number pattern series.

Answer .

#include <stdio.h>

int main()

{

int i, j, N;

printf("Enter rows: ");

scanf("%d", &N);

printf("\*\n");

for(i=1; i<=N; i++)

{

printf("\*");

for(j=1; j<=i; j++)

{

printf("%d", j);

}

for(j=i-1; j>=1; j--)

{

printf("%d", j);

}

printf("\*");

printf("\n");

}

for(i=N-1; i>=1; i--)

{

printf("\*");

for(j=1; j<=i; j++)

{

printf("%d", j);

}

for(j=i-1; j>=1; j--)

{

printf("%d", j);

}

printf("\*");

printf("\n");

}

printf("\*");

return 0;

}

1. Write a C program to print the given X number pattern series.

Answer .

#include <stdio.h>

int main()

{

int i, j, N;

printf("Enter N: ");

scanf("%d", &N);

for(i=1; i<=N; i++)

{

for(j=1; j<i; j++)

{

printf(" ");

}

printf("%d", i);

for(j=1; j<=((N - i) \* 2 - 1); j++)

{

printf(" ");

}

if(i != N)

printf("%d", i);

printf("\n");

}

for(i=N-1; i>=1; i--)

{

for(j=1; j<i; j++)

{

printf(" ");

}

printf("%d", i);

for(j=1; j<=((N - i ) \* 2 - 1); j++)

{

printf(" ");

}

printf("%d", i);

printf("\n");

}

return 0;

}

1. Write a function to print all Armstrong numbers between given interval.

Answer.

#include <stdio.h>

int isArmstrong(int num);

void printArmstrong(int start, int end);

int main()

{

int start, end;

printf("Enter lower limit to print armstrong numbers: ");

scanf("%d", &start);

printf("Enter upper limit to print armstrong numbers: ");

scanf("%d", &end);

printf("All armstrong numbers between %d to %d are: \n", start, end);

printArmstrong(start, end);

return 0;

}

int isArmstrong(int num)

{

int temp, lastDigit, sum;

temp = num;

sum = 0;

while(temp != 0)

{

lastDigit = temp % 10;

sum += lastDigit \* lastDigit \* lastDigit;

temp /= 10;

}

if(num == sum)

return 1;

else

return 0;

}

void printArmstrong(int start, int end)

{

while(start <= end)

{

if(isArmstrong(start))

{

printf("%d, ", start);

}

start++;

}

}

Output : Armstrong numbers between 1 to 1000 are: 1, 153, 370, 371, 407.

1. Write a function to print all perfect numbers in a given interval.

Answer.

#include <stdio.h>

int isPerfect(int num);

void printPerfect(int start, int end);

int main()

{

int start, end;

printf("Enter lower limit to print perfect numbers: ");

scanf("%d", &start);

printf("Enter upper limit to print perfect numbers: ");

scanf("%d", &end);

printf("All perfect numbers between %d to %d are: \n", start, end);

printPerfect(start, end);

return 0;

}

int isPerfect(int num)

{

int i, sum;

sum = 0;

for(i=1; i<num; i++)

{

if(num % i == 0)

{

sum += i;

}

}

if(sum == num)

return 1;

else

return 0;

}

void printPerfect(int start, int end)

{

while(start <= end)

{

if(isPerfect(start))

{

printf("%d, ", start);

}

start++;

}

} Output : Perfect numbers: 6, 28

1. Write a C program to find largest and second largest element in an array.

Answer .

#include<stdio.h>

int main()

{

int n,max1,max2;

int a[n];

scanf("%d", &n);

max1= max2 = 0;

for(int i=0; i<n; i++)

{

scanf("%d\n", &a[i]);

}

for(int i=0; i<n; i++)

{

if (max1 < a[i])

{

max2 = max1;

max1 = a[i];

}

else if(max1 > a[i] && max2 < a[i])

{

max2 = a[i];

}

}

printf("first largest NO. max1 = %d", max1);

printf("first largest NO. max2 = %d", max2);

}

Output : Second largest = 38

1. Write a C program to Linear in an array.

Answer :

#include<stdio.h>

int main()

{

int a[5] = {10,20,30,40,50};

int item = 40;

for(int i=0; i<5; i++)

{

if (a[i]==item)

{

printf("element found at index is %d", i);

break;

}

if(i>=5)

{

printf("element not found");

}

}

}

Output : element found at index is 3

1. Write a C program swap of two number by using pointer.

Answer :

#include<stdio.h>

int main(){

int a,b,temp;

printf("enter any two no.\n");

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

int \*p = &a;

int \*q = &b;

printf("after swapping the no.\n");

printf("the value of a is = %d\n", a);

printf("the value of b is = %d\n", b);

temp = \*p;

\*p = \*q;

\*q = temp;

printf("before swapping the no.\n");

printf("the value of a is = %d\n", \*p);

printf("the value of b is = %d\n", \*q);

return 0; }

Output :

enter any two no.

12

21

after swapping the no.

the value of a is = 12

the value of b is = 21

before swapping the no.

the value of a is = 21

the value of b is = 12

1. Write a C program swap of two no. using call by value function.

Answer :

#include<stdio.h>

void swap(int a, int b)

{

a=a+b;

b=a-b;

a=a-b;

printf("Before swapping the number:\n");

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

printf("b = %d\n", b);

}

int main()

{

int n1,n2;

printf("enter any two number:\n");

scanf("%d%d", &n1, &n2);

printf("After swapping the number:\n");

printf("n1=%d\nn2=%d\n", n1,n2);

swap(n1,n2);

}

Output :

enter any two no.

12

21

after swapping the no.

the value of a is = 12

the value of b is = 21

before swapping the no.

the value of a is = 21

the value of b is = 12

1. Write a C program string is palidrome or not without using inbuild function.

Answer .

#include<stdio.h>

int main(){

char a[50];

printf("Enter a word to check is it palidrome : ");

gets(a);

int len=0 , i=0 , flag=0;

while (a[i] != '\0'){

len++;

i++;

}

for (int j=0; a[j] != '\0'; j++){

if (a[j] != a[len-j-1]){

flag++;

break;

}

}

if (flag == 0)

printf("String is palidrome.");

else

printf("String is not palidrome.");

}

1. Write a C program bubblesort.

Answer.

#include<stdio.h>

int main()

{

int n,i,j,t,a[5];

n=sizeof(a)/sizeof(a[0]);

printf("Enter the %d elements\n",n);

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

scanf("%d",&a[i]);

for(i=0;i<n-1;i++){

for(j=0;j<n-1-i;j++){

if (a[j]>a[j+1]){

t=a[j];

a[j]=a[j+1];

a[j+1]=t;}

}

}

printf("After bubble sort\n");

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

printf("%d ",a[i]);

}

Output : Enter the 5 elements

20

32

34

45

51

After bubble sort

20 32 34 45 51

1. Write a C program to make a sparse matrix.

Answer.

#include<stdio.h>

#include<conio.h>

int main()

{

int a,b,sumdiagonal=0;

printf("enter size rows and columns");

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

int c[a][b];

for(int i=0;i<a;i++)

{for(int j=0;j<b;j++)

{printf("enter the element of array of c[%d][%d]",i,j);

scanf("%d",&c[i][j]);}

}

printf("first matrix\n");

for(int i=0;i<a;i++)

{for(int j=0;j<b;j++)

{printf("%d",c[i][j]);

}

printf("\n");

}

int count=0;

for(int i=0;i<a;i++)

{for(int j=0;j<b;j++)

{if(c[i][j]==0)

{count++;

}

}

}

int sparse=(a\*b)/2;

if (count>sparse)

{

printf("given matrix is sparse matrix");

}

else

{

printf("given matrix is not sparse matrix\n");

}

return 0;

}

Output : enter size rows and columns3

3

enter the element of array of c[0][0]1

enter the element of array of c[0][1]2

enter the element of array of c[0][2]0

enter the element of array of c[1][0]0

enter the element of array of c[1][1]0

enter the element of array of c[1][2]0

enter the element of array of c[2][0]3

enter the element of array of c[2][1]0

enter the element of array of c[2][2]9

first matrix

120

000

309

given matrix is sparse matrix

1. Write a C program to print hollow diamond star pattern series of n rows.

Answer.

#include <stdio.h>

int main()

{

int i, j, n;

printf("Enter value of n : ");

scanf("%d", &n);

for(i=1; i<=n; i++)

{

for(j=i; j<=n; j++)

{

printf("\*");

}

for(j=1; j<=(2\*i-2); j++)

{

printf(" ");

}

for(j=i; j<=n; j++)

{

printf("\*");

}

printf("\n");

}

for(i=1; i<=n; i++)

{

for(j=1; j<=i; j++)

{

printf("\*");

}

for(j=(2\*i-2); j<(2\*n-2); j++)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf("\*");

}

printf("\n");

}

return 0;

}