Q.1 Write a program to initialize your details like name, age, gender, city, height etc and Display it.  
(For name and city use Character Array. Example char name[20]).

Program :-

#include <iostream>

using namespace std;

int main() {

char Name[20] = "Anupam Kanoongo";

int Age = 17;

char City[20] = "Indore";

char Gender[6] = "Male";

int Height = 170;

char Institute[10] = "NMIMS";

char Profession[20] = "Programmer";

cout << "Name : " << Name << endl;

cout << "Age : " << Age << endl;

cout << "Gender : " << Gender << endl;

cout << "City : " << City << endl;

cout << "Height : " << Height << endl;

cout << "Institute : " << Institute << endl;

cout << "Profession : " << Profession << endl;

};

Output :-

Name : Anupam Kanoongo

Age : 17

Gender : Male

City : Indore

Height : 170

Institute : NMIMS

Profession : Programmer

Q.2 Write a program to read your details like name, age, gender, city, height etc and Display it.

Program :-

Output:-

Enter Your Name : Anupam

Enter Your Age : 17

Enter Your Gender : Male

Enter Your City : Indore

Enter Your Height : 170

Enter Your Institute : NMIMS

Enter Your Profession : Programmer

Name : Anupam

Age : 17

Gender : Male

City : Indore

Height : 170

Institute : NMIMS

Profession : Programmer

#include <iostream>

using namespace std;

int main() {

char Name[20];

int Age;

char City[20];

char Gender[6];

int Height;

char Institute[10];

char Profession[20];

cout << "Enter Your Name : ";

cin >> Name;

cout << "Enter Your Age : ";

cin >> Age;

cout << "Enter Your Gender : ";

cin >> Gender;

cout << "Enter Your City : ";

cin >> City;

cout << "Enter Your Height : ";

cin >> Height;

cout << "Enter Your Institute : ";

cin >> Institute;

cout << "Enter Your Profession : ";

cin >> Profession;

cout << "\nName : " << Name << endl;

cout << "Age : " << Age << endl;

cout << "Gender : " << Gender << endl;

cout << "City : " << City << endl;

cout << "Height : " << Height << endl;

cout << "Institute : " << Institute << endl;

cout << "Profession : " << Profession << endl;

};

Q.3 Write a program to exchange value of two variables without using 3rd variable

Program :-

#include <iostream>

using namespace std;

int main() {

int num1;

int num2;

cout << "Enter the value of Number 1 : ";

cin >> num1;

cout << "Enter the value of Number 2 : ";

cin >> num2;

cout << "Before swap Number 1 = " << num1 << ", Number 2 = " << num2 << endl;

num1 = num1 \* num2;

num2 = num1 / num2;

num1 = num1 / num2;

cout << "After swap Number 1 = " << num1 << ", Number 2 = " << num2 << endl;

}

Output :-

Enter the value of Number 1 : 12

Enter the value of Number 2 : 13

Before Swap Number 1 = 12, Number 2 = 13

After Swap Number 1 = 13, Number 2 = 12

Q.4 Given the value of x, y and z. Write a program to rotate their values such that x has value of y, y has value of z and z has value of x.

Program :-

#include <iostream>

using namespace std;

int main() {

int num1;

int num2;

int num3;

cout << "Enter the value of Number 1 : ";

cin >> num1;

cout << "Enter the value of Number 2 : ";

cin >> num2;

cout << "Enter the value of Number 3 : ";

cin >> num3;

cout << "Before Swap Number 1 = " << num1 << " Number 2 = " << num2 << " Number 3 = " << num3 << endl;

num3 = num1 \* num2 \* num3;

num2 = num3 / (num1 \* num2);

num1 = num3 / (num1 \* num2);

num3 = num3 / (num1 \* num2);

cout << "After Swap Number 1 = " << num1 << " Number 2 = " << num2 << " Number 3 = " << num3 << endl;

};

Output :-

Enter the value of Number 1 : 1

Enter the value of Number 2 : 2

Enter the value of Number 3 : 3

Before Swap Number 1 = 1 Number 2 = 2 Number 3 = 3

After Swap Number 1 = 2 Number 2 = 3 Number 3 = 1

Q.5 Write a program to find the area and perimeter of a circle

Program :-

#include <iostream>

using namespace std;

int main(){

float radius;

const float pi = 3.14;

float area, perimemter;

cout << "Enter the Radius of Circle : ";

cin >> radius;

area = pi \* (radius)\*(radius);

perimemter = 2 \* pi \* radius;

cout << "For the given Radius of Circle : " << radius << endl;

cout << "Area is : " << area << endl;

cout << "Perimeter is " << perimemter << endl;

}

Output :-

Enter the Radius of Circle : 10

For the given Radius of Circle : 10

Area is : 314

Perimeter is 62.8

Q.6 Write a program to calculate simple interest

Program :-

#include <iostream>

using namespace std;

int main(){

int pamt, rate, time, si;

cout << "Enter the Principle Amount (Rs) : ";

cin >> pamt;

cout << "Enter the Rate of Interest (%) : ";

cin >> rate;

cout << "Enter the Time Duration (yrs) : ";

cin >> time;

si = (pamt \* rate \* time) / 100;

cout << "\nFor the Principle Amount : " << pamt << "\nRate of Interest : " << rate << "\nTime Duration : " << endl;

cout << "The Simple Interest (SI) is : " << si;

}

Output :-

Enter the Principle Amount (Rs) : 100000

Enter the Rate of Interest (%) : 10

Enter the Time Duration (yrs) : 5

For the Principle Amount : 100000

Rate of Interest : 10

Time Duration :

The Simple Interest (SI) is : 50000

Q.7 Write a program to convert temperature in Celsius to Fahrenheit

Program :-

#include <iostream>

using namespace std;

int main() {

double celsius, fahrenheit;

cout << "Enter the Temperature in Celsius : ";

cin >> celsius;

fahrenheit = (9.0 / 5) \* celsius + 32;

cout << "The Temperature in Fahrenheit is " << fahrenheit << " degrees.";

}

Output :-

Enter the Temperature in Celsius : 25

The Temperature in Fahrenheit is 77 degrees.

Q.8 A four digit number is inputted through the keyboard. Write a program to calculate sum of digits of a number.

Program :-

#include <iostream>

using namespace std;

Output :-

Enter a 4-Digit Number : 1234

The Sum of the digits of 1234 is 10

int main(){

int num, temp, digit;

int sum = 0;

cout << "Enter a 4-Digit Number : ";

cin >> num;

temp = num;

digit = temp % 10;

temp /= 10;

sum += digit;

digit = temp % 10;

temp /= 10;

sum += digit;

digit = temp % 10;

temp /= 10;

sum += digit;

digit = temp % 10;

temp /= 10;

sum += digit;

cout << "The Sum of the digits of " << num << " is " << sum;

}

Q.9 A four digit number is inputted through the keyboard. Write a program to reverse the number.

Program :-

#include <iostream>

Output :-

Enter a 4-Digit Number : 1234

The Reverse of the digits of 1234 is 4321

using namespace std;

int main(){

int num, temp, digit;

int newnum = 0;

cout << "Enter a 4-Digit Number : ";

cin >> num;

temp = num;

digit = temp % 10;

temp /= 10;

newnum = newnum \* 10 + digit;

digit = temp % 10;

temp /= 10;

newnum = newnum \* 10 + digit;

digit = temp % 10;

temp /= 10;

newnum = newnum \* 10 + digit;

digit = temp % 10;

temp /= 10;

newnum = newnum \* 10 + digit;

cout << "The Reverse of the digits of " << num << " is " << newnum;

}

Q.10 Write a program to find largest of two numbers using ternary operator

Program :-

#include <iostream>

using namespace std;

int main(){

int num1, num2;

cout << "Enter the First Number : ";

cin >> num1;

cout << "Enter the Second Number : ";

cin >> num2;

(num1 > num2) ?

cout << num1 << " is larger than " << num2 :

cout << num2 << " is larger than " << num1;

}

Output :-

Enter the First Number : 12

Enter the Second Number : 13

13 is larger than 12

Q.11 If the length of three sides of a triangle is inputted through the keyboard, write a program to find the area of triangle and check whether the triangle is valid or not using conditional operator. Hint :- A triangle is valid if the sum of two sides is greater than the third sides.

Program :-

#include <iostream>

#include <cmath>

using namespace std;

int main(){

double s1, s2, s3, s, area;

cout << "Enter the First Side : ";

cin >> s1;

cout << "Enter the Second Side : ";

cin >> s2;

cout << "Enter the Third Side : ";

cin >> s3;

if ((s1 + s2 > s3) && (s2 + s3 > s1) && (s1 + s3 > s2)) {

cout << "The given Triangle is Valid." << endl;

s = (s1 + s2 + s3) / 2;

area = sqrt(s \* (s - s1) \* (s - s2) \* (s - s3));

cout << area << " is its area.";

}

else {

cout << "The given Triangle is Invalid.";

}

}

Output :-

Enter the First Side : 7

Enter the Second Side : 12

Enter the Third Side : 13

The given Triangle is Valid.

41.5692 is its area.

Q.12 Write a program to calculate compound interest

Program :- #include <iostream>

#include <cmath>

using namespace std;

int main(){

double pamt, rate, time, num, ci;

cout << "Enter the Principal Amount : ";

cin >> pamt;

cout << "Enter the Rate of Interest : ";

cin >> rate;

rate /= 100;

cout << "Enter the Time Duration : ";

cin >> time;

cout << "Enter the Number of Times Interest is Compounded per Year : ";

cin >> num;

ci = pamt \* pow(1 + (rate/num), num \* time);

cout << "The Compound Interest is : " << ci;

}

Output :-

Enter the Principal Amount : 100000

Enter the Rate of Interest : 6

Enter the Time Duration : 5

Enter the Number of Times Interest is Compounded per Year : 1

The Compound Interest is : 133823