**Coding Questions**

1. **Swap 2 numbers using 3rd variable**

**Code in C:**

#include <stdio.h>

void swap(int a, int b)

{

int c;

c = a;

a = b;

b = c;

printf("%d %d", a, b);

}

int main()

{

int a, b;

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

swap(a, b);

return 0;

}

**Code in C++:**

#include <iostream>

using namespace std;

void swap(int a, int b)

{

int c;

c = a;

a = b;

b = c;

cout<<a<<" "<<b;

}

int main()

{

int a, b;

cin>>a>>b;

swap(a, b);

return 0;

}

**Code in Python:**

a= int(input("Enter first number"))

b= int(input("Enter second number"))

c=a

a=b

b=c

print(a,b)

1. **Swap 2 numbers without 3rd variable :**

**Code in C:**

#include <stdio.h>

void swap(int a, int b)

{

a=a+b;

b=a-b;

a=a-b;

printf("%d %d", a, b);

}

int main()

{

int a, b;

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

swap(a, b);

return 0;

}

**Code in C++:**

#include<iostream>

using namespace std;

void swap(int a, int b)

{

a=a+b;

b=a-b;

a=a-b;

cout<<a<<" "<<b;

}

int main()

{

int a, b;

cin>>a>>b;

swap(a, b);

return 0;

}

**Code in Python:**

a= int(input("Enter first number: "))

b= int(input("Enter second number: "))

a=a+b

b=a-b

a=a-b

print(a,b)

1. **Swap 2 number using EXOR:**

**Code in C:**

#include <stdio.h>

void swap(int a, int b)

{

a=a^b;

b=a^b;

a=a^b;

printf("%d %d", a, b);

}

int main()

{

int a, b;

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

swap(a, b);

return 0;

}

**Code in C++:**

#include <iostream>

using namespace std;

void swap(int a, int b)

{

a=a^b;

b=a^b;

a=a^b;

cout<<a<<" "<<b;

}

int main()

{

int a, b;

cin>>a>>b;

swap(a, b);

return 0;

}

Code in Python:

a= int(input("Enter first number: "))

b= int(input("Enter second number: "))

a=a^b

b=a^b

a=a^b

print(a,b)

1. **Swap 3 numbers:**

**Code in C:**

#include<stdio.h>

void swap(int a,int b,int c){

a=a+b+c;

b=a-b-c;

c=a-b-c;

a=a-b-c;

printf("%d %d %d", a,b,c);

}

int main(){

int a ,b,c;

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

swap(a,b,c);

return 0;

}

**Code in C++:**

#include<iostream>

using namespace std;

void swap(int a,int b,int c){

a=a+b+c;

b=a-b-c;

c=a-b-c;

a=a-b-c;

cout<<a<<" "<<b<<" "<<c;

}

int main(){

int a ,b,c;

cin>>a>>b>>c;

swap(a,b,c);

return 0;

}

**Code in Python:**

a=int(input("Enter first number "))

b=int(input("Enter second number: "))

c= int(input("Enter third number: "))

print(a,b,c)

a=a+b+c

b=a-b-c

c=a-b-c

a=a-b-c

print(a,b,c)

1. **Find Odd Even:**

**Code in C:**

#include<stdio.h>

void check(int a){

if(a%2==0){

printf("Even");

}

else{

printf("Odd");

}

}

int main(){

int a;

scanf("%d",&a);

check(a);

return 0;

}

**Code in C++:**

#include<iostream>

using namespace std;

void check(int a){

if(a%2==0){

cout<<"Even";

}

else{

cout<<"Odd";

}

}

int main(){

int a;

cin>>a;

check(a);

return 0;

}

**Code in Python:**

n= int(input("Enter a number : "))

if n%2==0:

print("even")

else:

print("odd")

1. **Check Leap Year:**

**Code in C:**

#include<stdio.h>

void leapYear(int a){

if(a%400==0){

printf("Leap Year");

}

else if(a%4==0 && a%100!=0){

printf("Leap Year");

}

else{

printf("Not Leap Year");

}

}

int main(){

int a;

printf("Enter the year: ");

scanf("%d",&a);

leapYear(a);

return 0;

}

**Code in C++:**

#include<iostream>

using namespace std;

void leapYear(int a){

if(a%400==0){

cout<<"Leap Year";

}

else if(a%4==0 && a%100!=0){

cout<<"Leap Year";

}

else{

cout<<"Not Leap Year";

}

}

int main(){

int a;

cout<<"Enter the year: ";

cin>>a;

leapYear(a);

return 0;

}

**Code in Python:**

n = int(input("Enter the year: "))

if n%400==0:

print("leap year")

elif n%4==0 and n%100 !=0 :

print("leap year")

else :

print("not a leap year")

1. **Sum of digits:**

**Code in C:**

#include <stdio.h>

int sum(int a)

{

int n = a, b, sum = 0;

while (a != 0)

{

b = a % 10;

sum += b;

a /= 10;

}

return sum;

}

int main()

{

int n, ans;

scanf("%d", &n);

ans = sum(n);

printf("%d", ans);

return 0;

}

**Code in C++:**

#include <iostream>

using namespace std;

int sum(int a)

{

int n = a, b, sum = 0;

while (a != 0)

{

b = a % 10;

sum += b;

a /= 10;

}

return sum;

}

int main()

{

int n, ans;

cin>>n;

ans = sum(n);

cout<<ans;

return 0;

}

**Code in Python:**

n=int(input("Enter a number: "))

sum=0

while(n):

b=n%10

sum=sum+b

n=n//10

print(sum)

1. **Reverse a number:**

**Code in C:**

#include<stdio.h>

int reverse(int a){

int sum=0,b;

while(a!=0){

b=a%10;

sum=(sum\*10)+b;

a=a/10;

}

return sum;

}

int main(){

int a , ans;

scanf("%d",&a);

ans = reverse(a);

printf("%d",ans);

return 0;

}

**Code in C++:**

#include<iostream>

using namespace std;

int reverse(int a){

int sum=0,b;

while(a!=0){

b=a%10;

sum=(sum\*10)+b;

a=a/10;

}

return sum;

}

int main(){

int a , ans;

cin>>a;

ans = reverse(a);

cout<<ans;

return 0;

}

**Code in Python:**

n=int(input("Enter a number: "))

a=n

sum=0

while(n):

b=n%10

sum=(sum\*10)+b

n=n//10

print(sum)

1. **Palindrome number:**

**Code in C:**

#include<stdio.h>

void palindrome(int n){

int a=n,sum=0,b;

while (n!=0)

{

b=n%10;

sum=(sum\*10)+b;

n/=10;

}

if (a==sum)

{

printf("Palindrome");

}

else{

printf("Not palindrome");

}

}

int main(){

int a;

scanf("%d",&a);

palindrome(a);

return 0;

}

**Code on C++:**

#include<iostream>

using namespace std;

void palindrome(int n){

int a=n,sum=0,b;

while (n!=0)

{

b=n%10;

sum=(sum\*10)+b;

n/=10;

}

if (a==sum)

{

cout<<"Palindrome";

}

else{

cout<<"Not palindrome";

}

}

int main(){

int a;

cin>>a;

palindrome(a);

return 0;

}

**Code in Python:**

n=int(input("Enter a number: "))

a=n

sum=0

while(n):

b=n%10

sum=(sum\*10)+b

n=n//10

print(sum)

if(a==sum):

print("Pelindrome")

else:

print("Not a pelindrome")

1. **Factorial of a number:**

**Code in C:**

#include<stdio.h>

int factorial(int a){

int fact=1;

while(a!=0){

fact\*=a;

a--;

}

return fact;

}

int main(){

int a , ans;

scanf("%d",&a);

ans = factorial(a);

printf("%d",ans);

return 0;

}

**Code in C++:**

#include<iostream>

using namespace std;

int factorial(int a){

int fact=1;

while(a!=0){

fact\*=a;

a--;

}

return fact;

}

int main(){

int a , ans;

cin>>a;

ans = factorial(a);

cout<<ans;

return 0;

}

**Code in Python:**

n=int(input("Enter a nummber: "))

fact=1

while(n!=0):

fact=fact\*n

n=n-1

print(fact)

1. **Strong Number:**

**Code in C:**

#include<stdio.h>

int factorial(int a){

int fact=1;

while(a!=0){

fact\*=a;

a--;

}

return fact;

}

void strong(int a){

int sum=0,b, n=a;

while (a!=0)

{

b=a%10;

sum = sum+factorial(b);

a=a/10;

}

if (sum==n )

{

printf("Strong number");

}

else{

printf("Not strong number");

}

}

int main(){

int a;

scanf("%d",&a);

strong(a);

return 0;

}

**Code in C++:**

#include <iostream>

using namespace std;

int factorial(int a)

{

int fact = 1;

while (a != 0)

{

fact \*= a;

a--;

}

return fact;

}

void strong(int a)

{

int sum = 0, b, n = a;

while (a != 0)

{

b = a % 10;

sum = sum + factorial(b);

a = a / 10;

}

if (sum == n)

{

cout << "Strong number";

}

else

{

cout << "Not strong number";

}

}

int main()

{

int a;

cin >> a;

strong(a);

return 0;

}

**Code in Python:**

def factorial(a):

fact=1

while(a):

fact=fact\*a

a=a-1

return fact

def isStrong(a):

sum=0

n=a

while(a):

b=a%10

sum=sum+factorial(b)

a=a//10

if (sum==n):

return True

return False

n= int(input("Enter a number: "))

ans= isStrong(n)

print(ans)