// Program 1: Hello World

#include <stdio.h>

int main() {

printf("Hello, World!\n");

return 0;

}

// Program 2: Print Your Name

#include <stdio.h>

int main() {

printf("My name is Shubham\n");

return 0;

}

// Program 3: Addition of Two Numbers

#include <stdio.h>

int main() {

int a, b;

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

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

return 0;

}

// Program 4: Subtraction

#include <stdio.h>

int main() {

int a, b;

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

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

return 0;

}

// Program 5: Multiplication

#include <stdio.h>

int main() {

int a, b;

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

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

return 0;

}

// Program 6: Division

#include <stdio.h>

int main() {

int a, b;

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

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

return 0;

}

// Program 7: Remainder

#include <stdio.h>

int main() {

int a, b;

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

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

return 0;

}

// Program 8: Swap Two Numbers

#include <stdio.h>

int main() {

int a, b, temp;

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

temp = a; a = b; b = temp;

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

return 0;

}

// Program 9: Square of Number

#include <stdio.h>

int main() {

int n;

scanf("%d", &n);

printf("Square = %d\n", n\*n);

return 0;

}

// Program 10: Cube of Number

#include <stdio.h>

int main() {

int n;

scanf("%d", &n);

printf("Cube = %d\n", n\*n\*n);

return 0;

}

// Program 11: Even or Odd

#include <stdio.h>

int main() {

int n;

scanf("%d", &n);

if(n%2==0) printf("Even\n");

else printf("Odd\n");

return 0;

}

// Program 12: Positive or Negative

#include <stdio.h>

int main() {

int n;

scanf("%d", &n);

if(n>0) printf("Positive\n");

else if(n<0) printf("Negative\n");

else printf("Zero\n");

return 0;

}

// Program 13: Largest of Two Numbers

#include <stdio.h>

int main() {

int a,b;

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

if(a>b) printf("Largest = %d\n",a);

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

return 0;

}

// Program 14: Largest of Three Numbers

#include <stdio.h>

int main() {

int a,b,c;

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

if(a>=b && a>=c) printf("Largest = %d\n",a);

else if(b>=a && b>=c) printf("Largest = %d\n",b);

else printf("Largest = %d\n",c);

return 0;

}

// Program 15: Sum of First N Natural Numbers

#include <stdio.h>

int main() {

int n, sum=0;

scanf("%d",&n);

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

printf("Sum = %d\n",sum);

return 0;

}

// Program 16: Factorial of a Number

#include <stdio.h>

int main() {

int n,f=1;

scanf("%d",&n);

for(int i=1;i<=n;i++) f\*=i;

printf("Factorial = %d\n",f);

return 0;

}

// Program 17: Fibonacci Series

#include <stdio.h>

int main() {

int n,a=0,b=1,c;

scanf("%d",&n);

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

for(int i=2;i<n;i++){ c=a+b; printf("%d ",c); a=b; b=c; }

return 0;

}

// Program 18: Reverse a Number

#include <stdio.h>

int main() {

int n,rev=0;

scanf("%d",&n);

while(n){ rev=rev\*10+n%10; n/=10; }

printf("Reverse = %d\n",rev);

return 0;

}

// Program 19: Palindrome Number

#include <stdio.h>

int main() {

int n,orig,rev=0;

scanf("%d",&n);

orig=n;

while(n){ rev=rev\*10+n%10; n/=10; }

if(orig==rev) printf("Palindrome\n");

else printf("Not Palindrome\n");

return 0;

}

// Program 20: Armstrong Number (3-digit)

#include <stdio.h>

int main() {

int n,orig,sum=0,d;

scanf("%d",&n);

orig=n;

while(n){ d=n%10; sum+=d\*d\*d; n/=10; }

if(orig==sum) printf("Armstrong\n");

else printf("Not Armstrong\n");

return 0;

}

// Program 21: Print N Natural Numbers

#include <stdio.h>

int main() {

int n;

scanf("%d",&n);

for(int i=1;i<=n;i++) printf("%d ",i);

return 0;

}

// Program 22: Print Multiplication Table

#include <stdio.h>

int main() {

int n;

scanf("%d",&n);

for(int i=1;i<=10;i++)

printf("%d x %d = %d\n",n,i,n\*i);

return 0;

}

// Program 23: Check Leap Year

#include <stdio.h>

int main() {

int y;

scanf("%d",&y);

if((y%400==0)||(y%4==0&&y%100!=0))

printf("Leap Year\n");

else printf("Not Leap Year\n");

return 0;

}

// Program 24: ASCII Value of Character

#include <stdio.h>

int main() {

char c;

scanf(" %c",&c);

printf("ASCII = %d\n",c);

return 0;

}

// Program 25: Character Type (Vowel/Consonant)

#include <stdio.h>

int main() {

char c;

scanf(" %c",&c);

if(c=='a'||c=='e'||c=='i'||c=='o'||c=='u'||

c=='A'||c=='E'||c=='I'||c=='O'||c=='U')

printf("Vowel\n");

else printf("Consonant\n");

return 0;

}

// Program 26: Simple Calculator

#include <stdio.h>

int main() {

int a,b; char op;

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

if(op=='+') printf("%d\n",a+b);

else if(op=='-') printf("%d\n",a-b);

else if(op=='\*') printf("%d\n",a\*b);

else if(op=='/') printf("%d\n",a/b);

else printf("Invalid\n");

return 0;

}

// Program 27: Count Digits

#include <stdio.h>

int main() {

int n,count=0;

scanf("%d",&n);

while(n){ count++; n/=10; }

printf("Digits = %d\n",count);

return 0;

}

// Program 28: Sum of Digits

#include <stdio.h>

int main() {

int n,sum=0;

scanf("%d",&n);

while(n){ sum+=n%10; n/=10; }

printf("Sum of digits = %d\n",sum);

return 0;

}

// Program 29: Largest Digit

#include <stdio.h>

int main() {

int n,max=0,d;

scanf("%d",&n);

while(n){ d=n%10; if(d>max) max=d; n/=10; }

printf("Largest digit = %d\n",max);

return 0;

}

// Program 30: Smallest Digit

#include <stdio.h>

int main() {

int n,min=9,d;

scanf("%d",&n);

while(n){ d=n%10; if(d<min) min=d; n/=10; }

printf("Smallest digit = %d\n",min);

return 0;

}

// Program 31: Power of a Number

#include <stdio.h>

int main() {

int base,exp,res=1;

scanf("%d%d",&base,&exp);

for(int i=0;i<exp;i++) res\*=base;

printf("Power = %d\n",res);

return 0;

}

// Program 32: GCD of Two Numbers

#include <stdio.h>

int main() {

int a,b;

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

while(a!=b){ if(a>b) a-=b; else b-=a; }

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

return 0;

}

// Program 33: LCM of Two Numbers

#include <stdio.h>

int main() {

int a,b,m;

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

m=(a>b)?a:b;

while(1){ if(m%a==0&&m%b==0)

{ printf("LCM = %d\n",m); break;} m++; }

return 0;

}

// Program 34: Prime or Not

#include <stdio.h>

int main() {

int n,flag=1;

scanf("%d",&n);

if(n<2) flag=0;

for(int i=2;i<=n/2;i++) if(n%i==0) {flag=0; break;}

if(flag) printf("Prime\n");

else printf("Not Prime\n");

return 0;

}

// Program 35: Prime Numbers up to N

#include <stdio.h>

int main() {

int n;

scanf("%d",&n);

for(int i=2;i<=n;i++){ int flag=1;

for(int j=2;j<=i/2;j++) if(i%j==0){ flag=0; break; }

if(flag) printf("%d ",i);

}

return 0;

}

// Program 36: Reverse String (using loop)

#include <stdio.h>

int main() {

char str[100]; int len=0;

scanf("%s",str);

while(str[len]!='\0') len++;

for(int i=len-1;i>=0;i--) printf("%c",str[i]);

return 0;

}

// Program 37: Count Characters in String

#include <stdio.h>

int main() {

char str[100]; int len=0;

scanf("%s",str);

while(str[len]!='\0') len++;

printf("Length = %d\n",len);

return 0;

}

// Program 38: Uppercase Alphabet (A–Z)

#include <stdio.h>

int main() {

for(char c='A';c<='Z';c++) printf("%c ",c);

return 0;

}

// Program 39: Lowercase Alphabet (a–z)

#include <stdio.h>

int main() {

for(char c='a';c<='z';c++) printf("%c ",c);

return 0;

}

// Program 40: Sum of Array Elements

#include <stdio.h>

int main() {

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

int arr[n],sum=0;

for(int i=0;i<n;i++){ scanf("%d",&arr[i]); sum+=arr[i]; }

printf("Sum = %d\n",sum);

return 0;

}

// Program 41: Largest Element in Array

#include <stdio.h>

int main() {

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

int arr[n],max;

for(int i=0;i<n;i++) scanf("%d",&arr[i]);

max=arr[0];

for(int i=1;i<n;i++) if(arr[i]>max) max=arr[i];

printf("Largest = %d\n",max);

return 0;

}

// Program 42: Smallest Element in Array

#include <stdio.h>

int main() {

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

int arr[n],min;

for(int i=0;i<n;i++) scanf("%d",&arr[i]);

min=arr[0];

for(int i=1;i<n;i++) if(arr[i]<min) min=arr[i];

printf("Smallest = %d\n",min);

return 0;

}

// Program 43: Linear Search in Array

#include <stdio.h>

int main() {

int n,key,found=0; scanf("%d",&n);

int arr[n];

for(int i=0;i<n;i++) scanf("%d",&arr[i]);

scanf("%d",&key);

for(int i=0;i<n;i++) if(arr[i]==key){ found=1; break; }

if(found) printf("Found\n"); else printf("Not Found\n");

return 0;

}

// Program 44: Reverse Array

#include <stdio.h>

int main() {

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

int arr[n];

for(int i=0;i<n;i++) scanf("%d",&arr[i]);

for(int i=n-1;i>=0;i--) printf("%d ",arr[i]);

return 0;

}

// Program 45: Bubble Sort

#include <stdio.h>

int main() {

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

int arr[n];

for(int i=0;i<n;i++) scanf("%d",&arr[i]);

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

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

if(arr[j]>arr[j+1]){ int t=arr[j]; arr[j]=arr[j+1]; arr[j+1]=t; }

for(int i=0;i<n;i++) printf("%d ",arr[i]);

return 0;

}

// Program 46: Sum of Matrix Elements

#include <stdio.h>

int main() {

int r,c; scanf("%d%d",&r,&c);

int a[r][c],sum=0;

for(int i=0;i<r;i++) for(int j=0;j<c;j++){ scanf("%d",&a[i][j]); sum+=a[i][j]; }

printf("Sum = %d\n",sum);

return 0;

}

// Program 47: Transpose of Matrix

#include <stdio.h>

int main() {

int r,c; scanf("%d%d",&r,&c);

int a[r][c];

for(int i=0;i<r;i++) for(int j=0;j<c;j++) scanf("%d",&a[i][j]);

for(int j=0;j<c;j++){ for(int i=0;i<r;i++) printf("%d ",a[i][j]); printf("\n"); }

return 0;

}

// Program 48: Factorial using Recursion

#include <stdio.h>

int fact(int n){ return (n==0)?1:n\*fact(n-1); }

int main(){ int n; scanf("%d",&n); printf("%d\n",fact(n)); return 0; }

// Program 49: Fibonacci using Recursion

#include <stdio.h>

int fib(int n){ return (n<=1)?n:fib(n-1)+fib(n-2); }

int main(){ int n; scanf("%d",&n); for(int i=0;i<n;i++) printf("%d ",fib(i)); return 0; }

// Program 50: Swap without Third Variable

#include <stdio.h>

int main() {

int a,b;

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

a=a+b; b=a-b; a=a-b;

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

return 0;

}