

How to **solve** a problem?

Problem : Find sum of 2 numbers : a & b.

- ① understand
- ② Input
- ③ Solution
- ④ Code

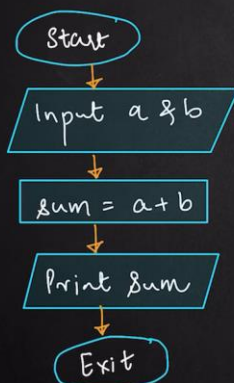
$sum = a + b$



Pseudo-code

english like

General Logic of Solution



Pseudo code

1. Input a & b
2. $sum = a + b$
3. Print sum
4. Exit



Components

solⁿ flow

Start/Exit

Start

Exit

Input/Output

Input a

Print "Hi"

Process

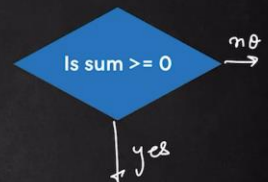
name = "Tony Stark"

Arrows

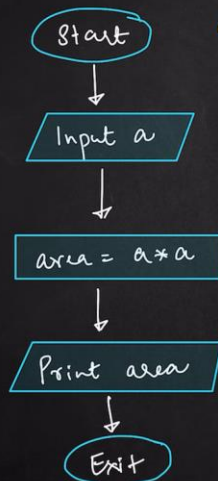


Decision

condition



Area of a Square

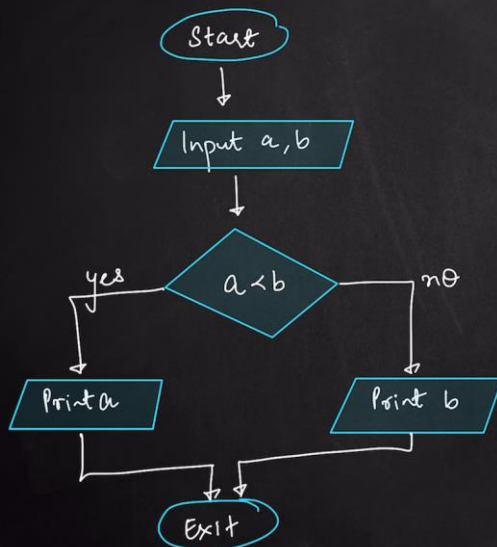


Pseudo code

1. Input a
2. $area = a * a$
3. Print area
4. Exit



Min of 2 numbers



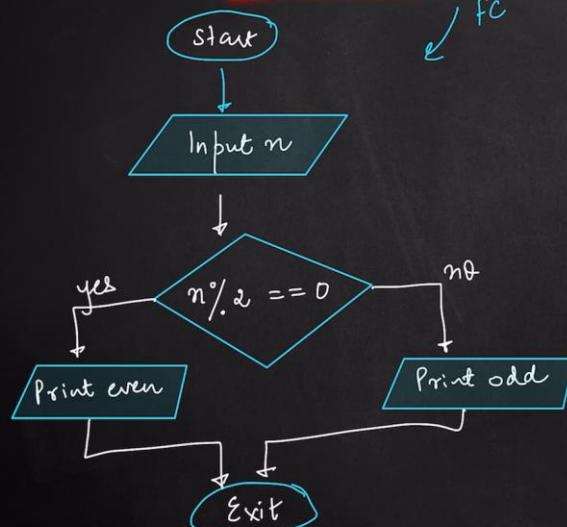
Pseudo code

1. Input a & b
2. If $a < b$
 Print a
 Else
 Print b
3. Exit

conditional statement



Is number Odd or Even

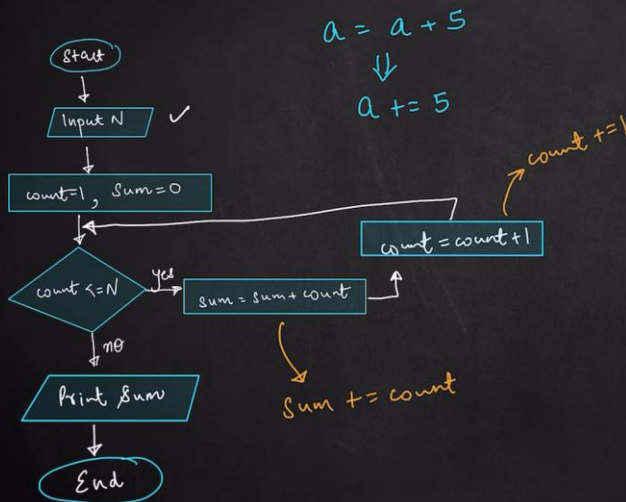


Pseudocodes

1. Input n
2. If $n \% 2 == 0$
 Print even
 Else
 Print odd
3. Exit



Sum of numbers from 1 to N

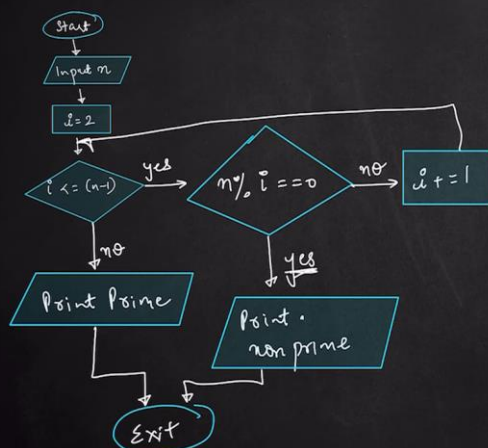


Pseudo code

1. Input n
2. $count = 1$, $sum = 0$
3. **While** $count \leq N$
 - $sum = sum + count$
 - $count = count + 1$
4. Print sum
5. Exit



Is number Prime or not



Pseudo code

1. Input n
2. $i = 2$
3. **While** $i \leq (n-1)$
 - If** $n \% i == 0$
 - Print non-Prime
 - Exit
 - Else**
 - $i = i + 1$
4. Print Prime
5. Exit



Homework

$$SI = P \times R \times T$$

a. Calculate "Simple Interest" from Principal (P), Rate (R) & Time (T).

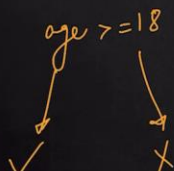
b. Calculate Max of 2 numbers.

c. Calculate Factorial of a number N.

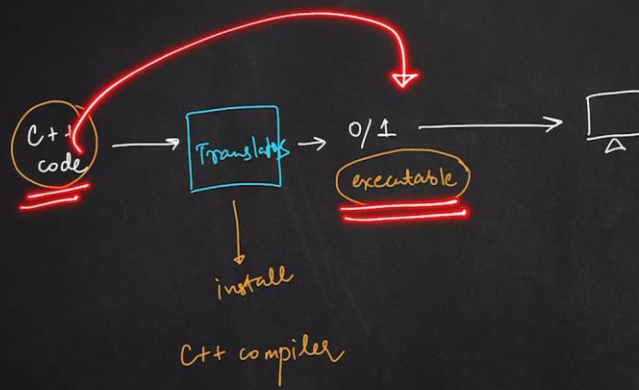
$$n! = 1 \times 2 \times 3 \times 4 \times 5 \dots n$$

d. Given a person's age, find if they should get a driving license or not.

yes / no



How does code run?



What to download?

a. Visual Studio Code microsoft

b. Set up C++

windows mac

Problems solve

Google

browser based websites → code



Homework Solutions:

// Calculate "Simple Interest" from Principal (P), Rate (R) & Time (T).

```
#include <iostream>
```

```
using namespace std;
```

```
int main(){
```

```
    int prin, rate, time; // Time should be in days
```

```
    cout << "Enter the principle amount: ";
```

```
    cin >> prin;
```

```
    cout << "Enter the rate of interest: ";
```

```
    cin >> rate;
```

```
    cout << "Enter the time which is required: ";
```

```
    cin >> time;
```

```
    float si = prin * rate * time;
```

```
    cout << "The calculated Simple Interest is: " << si;
```

```
    return 0;
```

```
}
```

// Calculate Max of 2 numbers.

```
#include <iostream>
```

```
using namespace std;
```

```
int main(){
```

```
    int a, b;
```

```
    cout << "Enter the first element: ";
```

```
    cin >> a;
```

```
    cout << "Enter the second element: ";
```

```
    cin >> b;
```

```
    if (a>b){
```

```
        cout << a << " is greater than " << b;
```

```
        return 0;
```

```
    } else {
```

```
        cout << b << " is greater than " << a;
```

```
        return 0;
```

```
    }
```

```
}
```

```
// Calculate Factorial of a number N.
```

```
#include <iostream>
```

```
using namespace std;
```

```
int main(){
```

```
    long long int num, fact = 1, i = 1;
```

```
    cout << "Enter the number: ";
```

```
    cin >> num;
```

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

```
        fact *= i;
```

```
    }
```

```
    cout << "Factorial of given number is: " << fact;
```

```
    return 0;
```

```
}
```

```
// Given a person's age, find if they should get a driving license or not.
```

```
#include <iostream>
```

```
using namespace std;
```

```
int main(){
```

```
    int age = 0;
```

```
    cout << "Enter the age of an person: ";
```

```
    cin >> age;
```

```
    if(age >= 18 && age <= 100){
```

```
        cout << "You are eligible to get driving licence!";
```

```
    } else if(age < 18 && age > 0){
```

```
        cout << "You are not eligible for driving licence!";
```

```
    } else {
```

```
        cout << "Invalid Age!";
```

```
    }
```

```
    return 0;
```

```
}
```