

Homework

Q2. Write an Algorithm, pseudocode, and flowchart to enter a number and find the reverse of the number entered by the user.

For understanding the logic let us take an example.

For example, user entered a value 12

Dividing it 10

To find the remainder;

$12 \% 10 = 2$ and remainder will be 2

Reverse = $0 * 10 + 2$

Reverse = 2

Reverse = $2 * 10 + 1$ ($12 \% 10 = 2$ and remainder will be 1)

Reverse = 21

Ans: - Algorithm

Step1: - start

Step2: - declare variable num, rev=0, remainder

Step3: - read value of num1

Step4: - apply while loop, divide num with 10 and multiply the remainder with $rev * 10$

step5: - display rev

step6: - stop

Pseudocode

Int main()

Printf("Enter an integer:")

Reverse = 0

While(num!=0) then

remainder = num%10

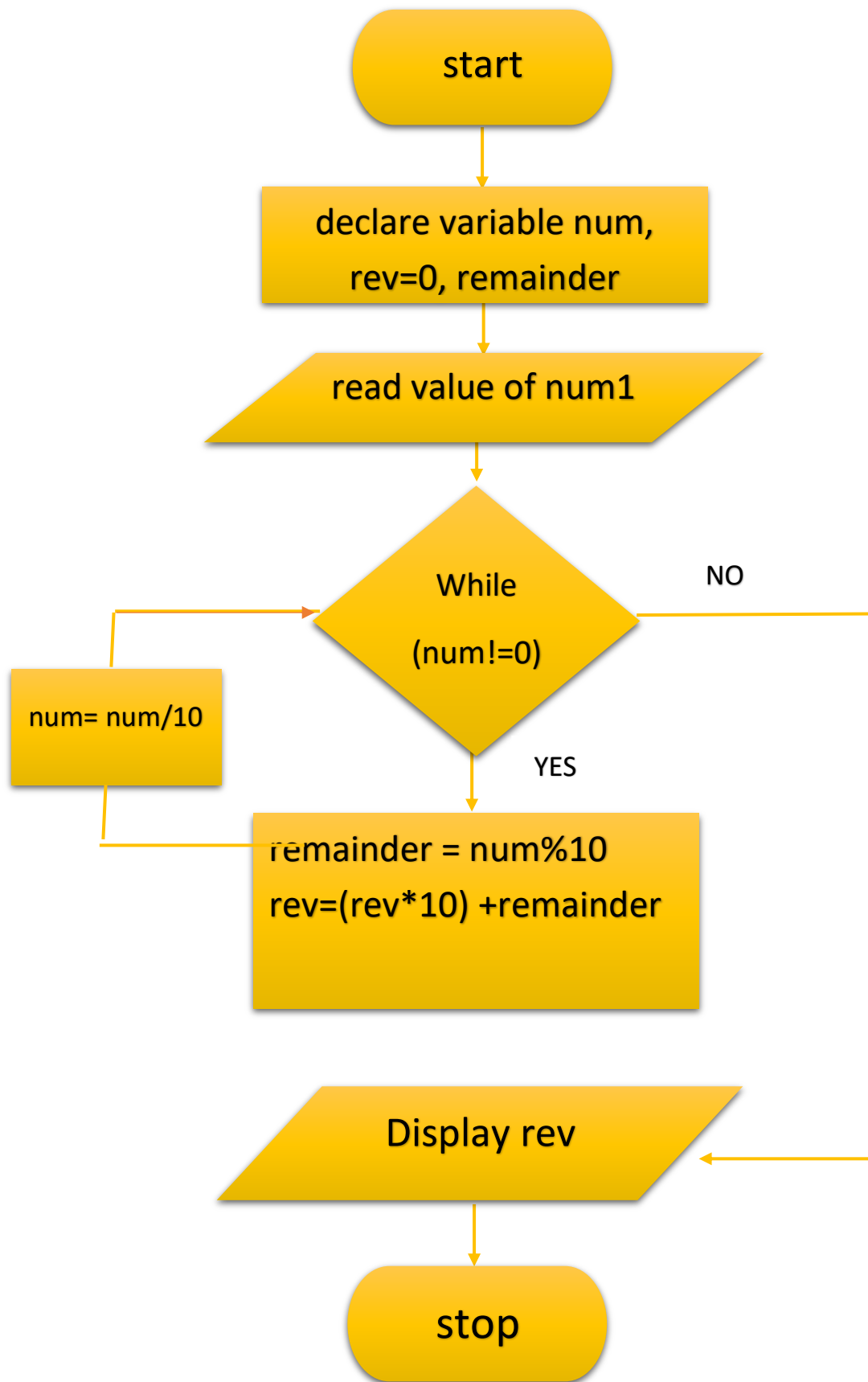
rev=(rev*10)+remainder

num=num/10

end while

output "Reversed number is"

Flowchart



Q1: - write an Algorithm, pseudocode, and flow chart to print the prime number from 1 to 100.

To get the prime number from 1 to 100, first we have to declare both values.
First for loop Condition will be (num1<=100)
Second for loop condition will be (j<=i) where both j=1 and i++ are iterations.
If i%j = 0 then the count will increase and the process will go on.
If count==0 then the integer is prime and it will be **NO** yed.

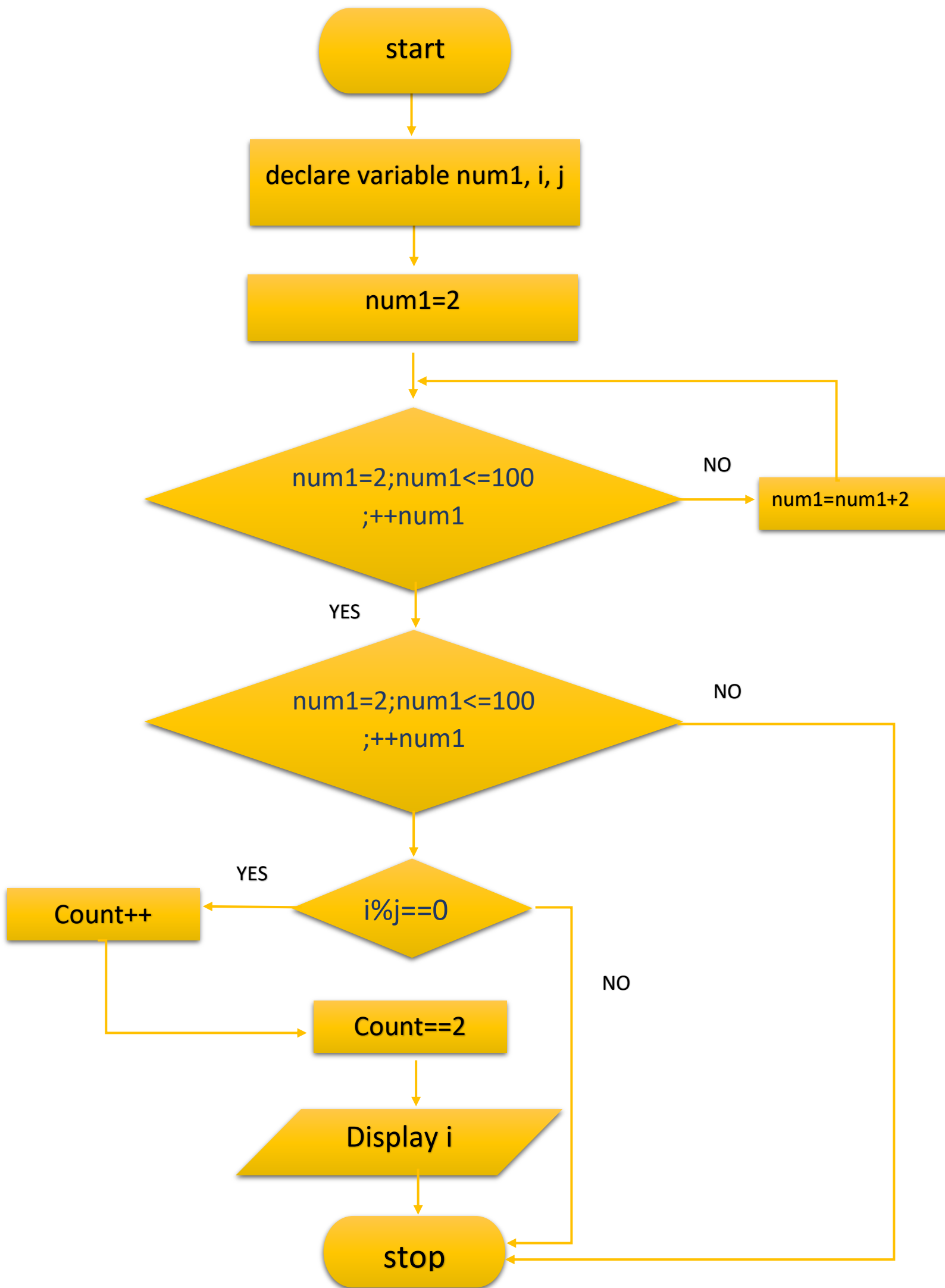
Ans: - Algorithm

Step1: -start
Step2: -declare variable num1, i, j
Step3: - num1=2
Step4: - start for loop (num1<=100) to iterate the number from 1 to num1.
Step5: -if number is prime then print it, else ignore that number and iterate next number.
Step6: -stop.

Pseudocode

```
Int num1, i, j
Printf("prime numbers between 1 to 100)
num1=2
for(num1=2;num1<=100;++num1)
for(j=1;j<=i;j++)
if(i%j==0) then count++
if(count==2) then
printf("%d",i)
else, ignore the integer.
```

Flowchart



Q3. Write an Algorithm, pseudocode, and flowchart to enter a number and test whether it is a Fibonacci number.

Fibonacci number is the number which is the sum of its previous two numbers.

Ans= Algorithm.

Step1: -start

Step2: -declare variable i=2, num1, a=0, b=1, sum=0

Step3: - read value of num1

Step4: -the Fibonacci series is a+b

Step5: -if ($i \leq \text{num1}$) then sum of a b , where $a=b$ and $b=\text{sum}$.

Step6: -increment of i will occur

Step7: -print sum

Step8: -stop

Pseudocode.

```
Int main()
```

```
Printf("enter a value")
```

```
a=0, b=1, sum=0
```

```
( $i \leq \text{num1}$ )
```

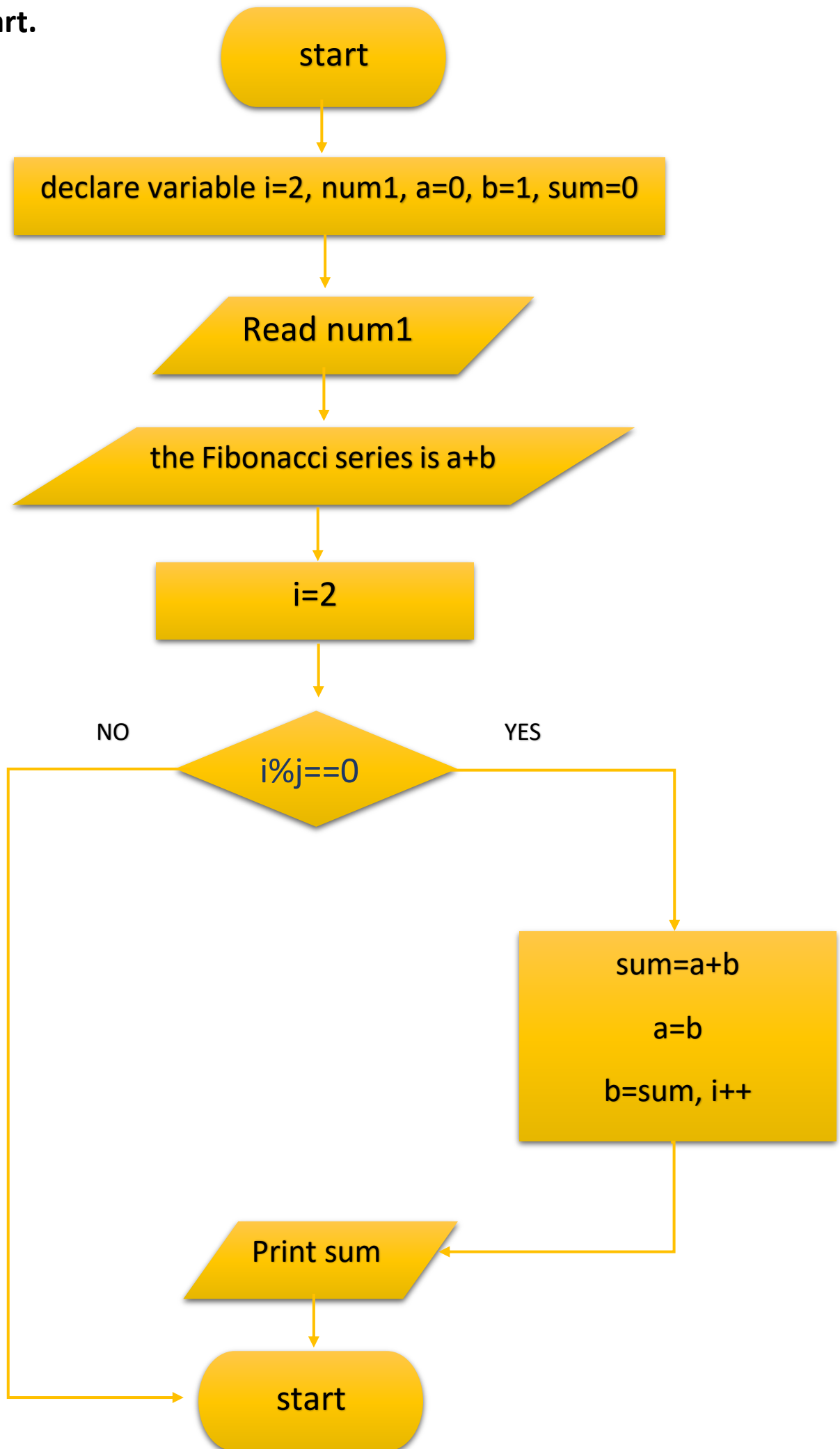
```
Sum=a+b
```

```
a=b
```

```
B=sum, i++
```

```
printf("%d",sum)
```

Flowchart.



Q3. Write an Algorithm, pseudocode, and flowchart to accept any number 'n' and print the sum of all number from 1 to n.

Ans: - Algorithm

Step1: -start

Step2: - declare variable n, i, sum

Step3: - initialize i=1, sum=0

Step4: - read n

Step5: -if $i \leq n$, the the number till n will keep adding , else the loop will end.

Step6: -display sum

Step7: -stop

Pseudocode.

```
Int main()
```

```
Printf("enter a value")
```

```
n, i=1, sum=0
```

```
if( $i \leq n$ )
```

```
Sum=sum+i
```

```
printf("%d",sum)
```

Flowchart.

