1. Guess an integer in a range

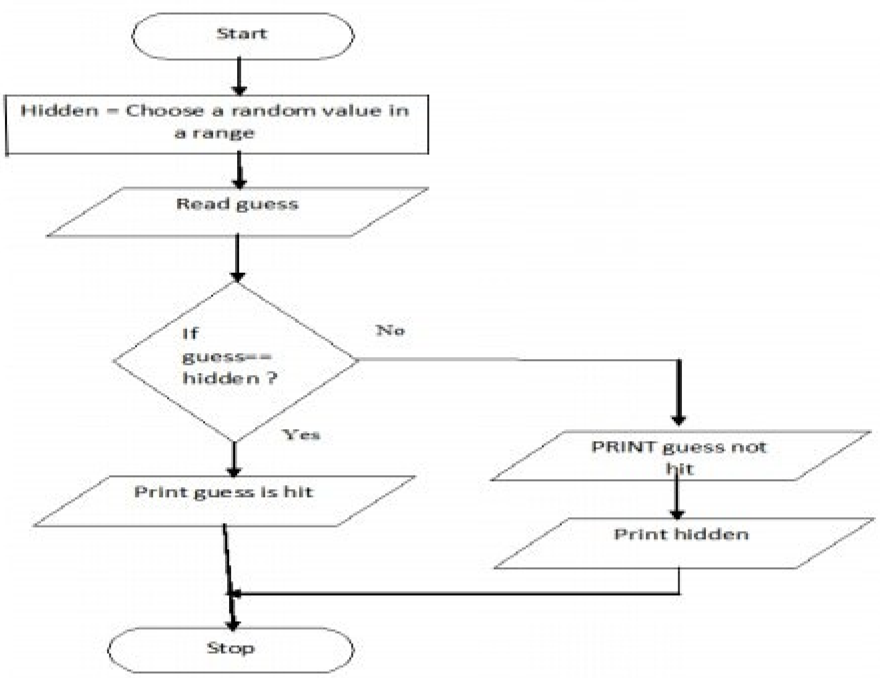
PROGRAM

```
import random
Count=0
N=int(input("Enter Range = "))
R=random(dot)rand()int(1,N)
while 1(semi colon)
  G=int(input("Enter your Guess = "))
  Count=Count+1
  if R==G:
     break
  if R<G:
     print("Guess is Too High")
  else:
print("Guess is Too Low")
print("Number of Guesses Took =",Count)
```

Pseudocode:

```
BEGIN
COMPUTE hidden=random value in range
READ guess
IF guess=hidden, then
PRINT Guess is hit
ELSE
PRINT Guess not hit
PRINT hidden
END IF-ELSE
END
```

FLOWCHAT



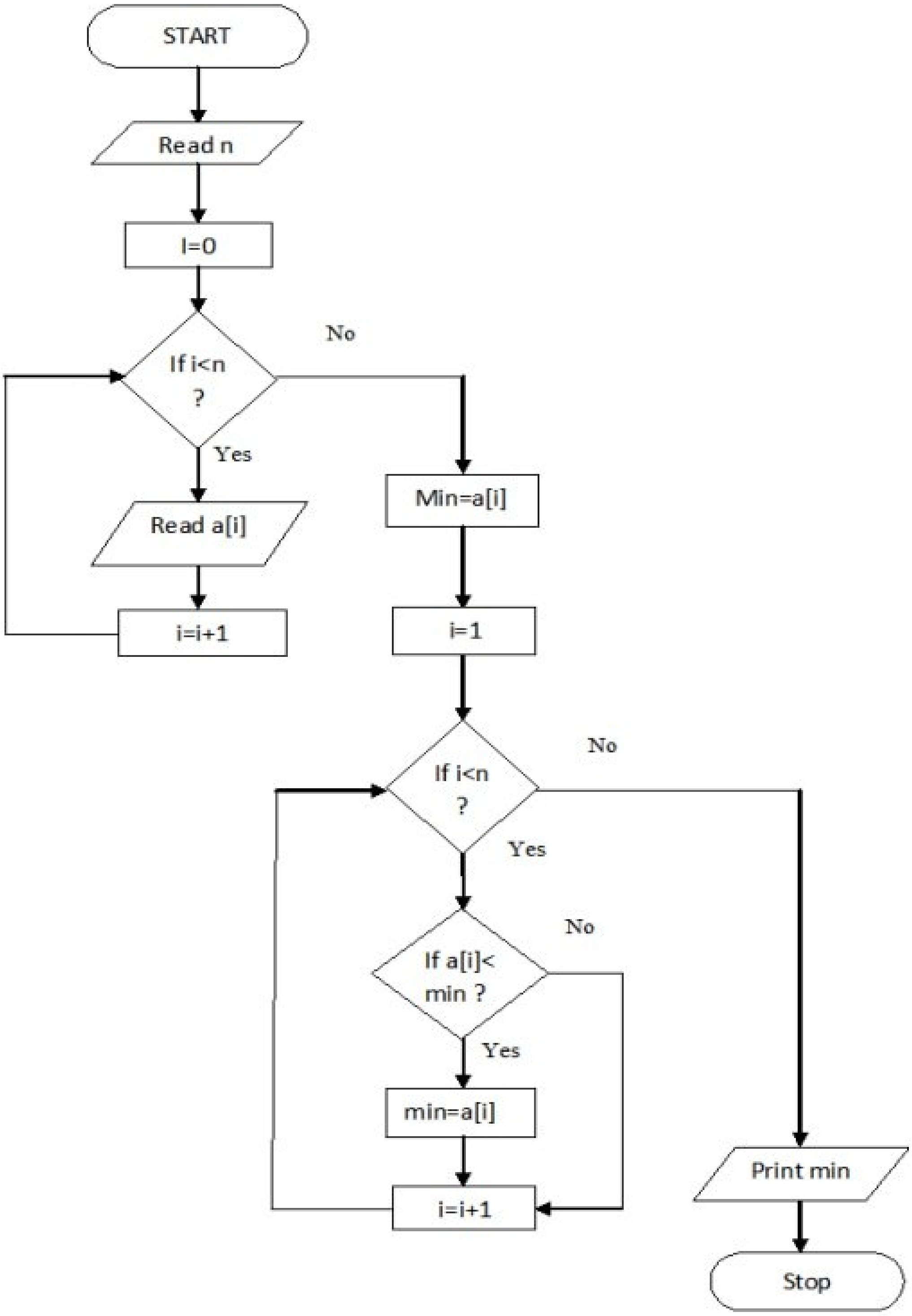
2. Find minimum in a list

```
def min_value(list):
    min = list[0]
    for i in list:
         if i < min:
            min = i
    return min
num = [12, 65, 54, 39, 102, 37, 72, 33, 5, -28, 0, 15]
print(min_value(num))
```

Pseudocode:

```
BEGIN READ n
FOR i=0 to n, then
READ a[i]
INCREMENT i
END FOR
COMPUTE min=a[0]
FOR i=1 to n, then
IF a[i]<min, then
CALCULATE min=a[i]
INCREMENT i
ELSE
INCREMENT i
END IF-ELSE
END FOR
PRINT min
END
```

FLOWCHAT



3. Insert a card in a list of sorted cards

Program :

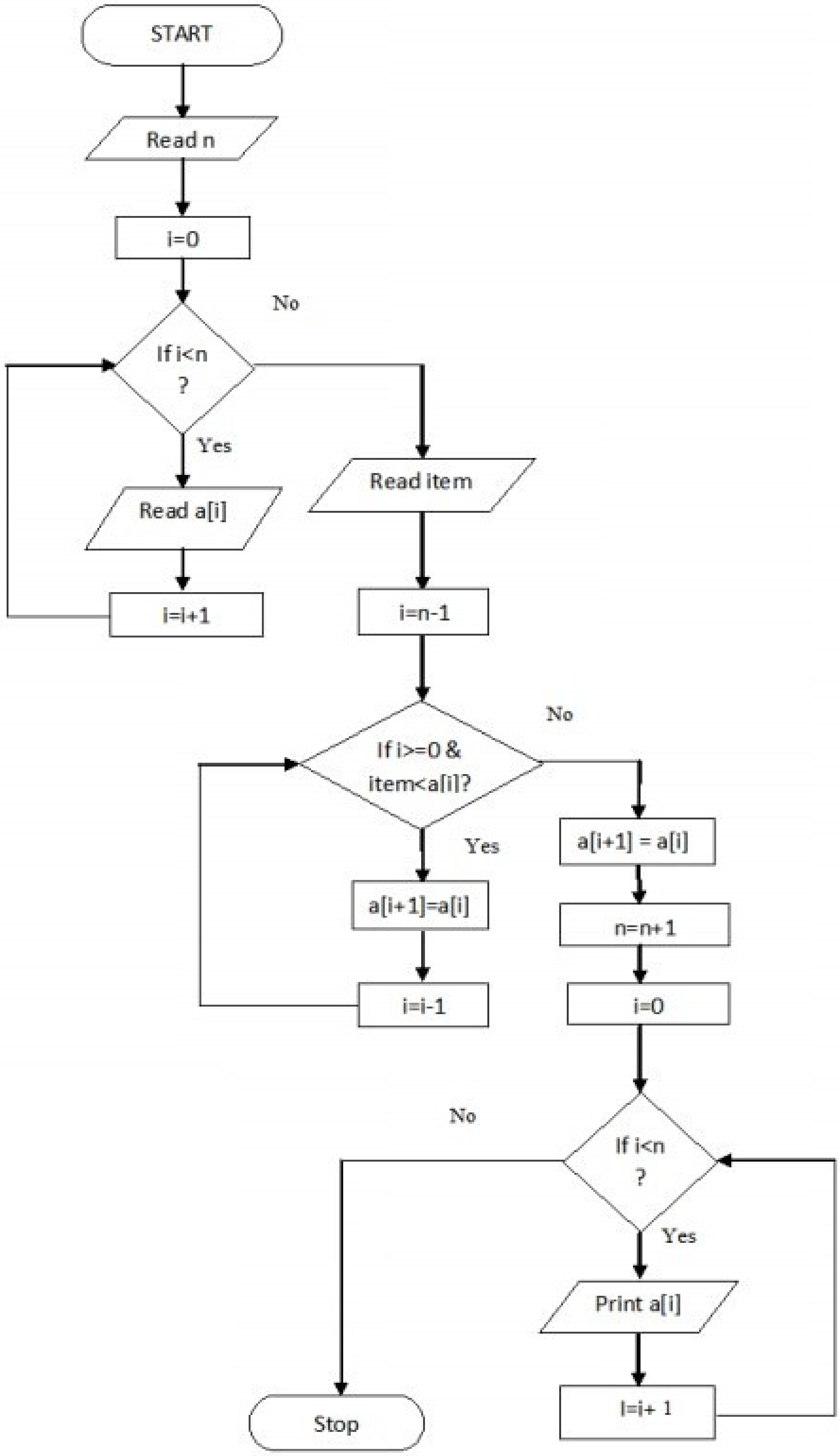
```
List_Size = int(input("Enter the list Size"))
Position =0
aList=[]
while(Position < List_Size):
   avalue=int(input("Enter a value"))
   aList.append(avalue)
   Position+=1
print(aList)
aList.append(0)
avalue=int(input("Enter a card to insert"))
Position = List_Size-1
while(Position >=0):
   if(avalue<aList[Position]):
        aList[Position+1]=aList[Position]
        aList[Position]=0
    else:
        aList[Position+1]=avalue
        break
Position-=1
print(aList)
```

Pseudocode:

```
BEGIN
READ n
FOR i=0 to n, then
READ a[i]
INCREMENT i
END FOR
READ item
FOR i=n-1 to 0 and item<a[i], then
CALCULATE a[i+1]=a[i]
DECREMENT i
END FOR
COMPUTE a[i+1]=a[i]
COMPUTE n=n+1
FOR i=0 to n, then
```

```
PRINT a[i]
INCREMENT i
END FOR
```

Flowchat



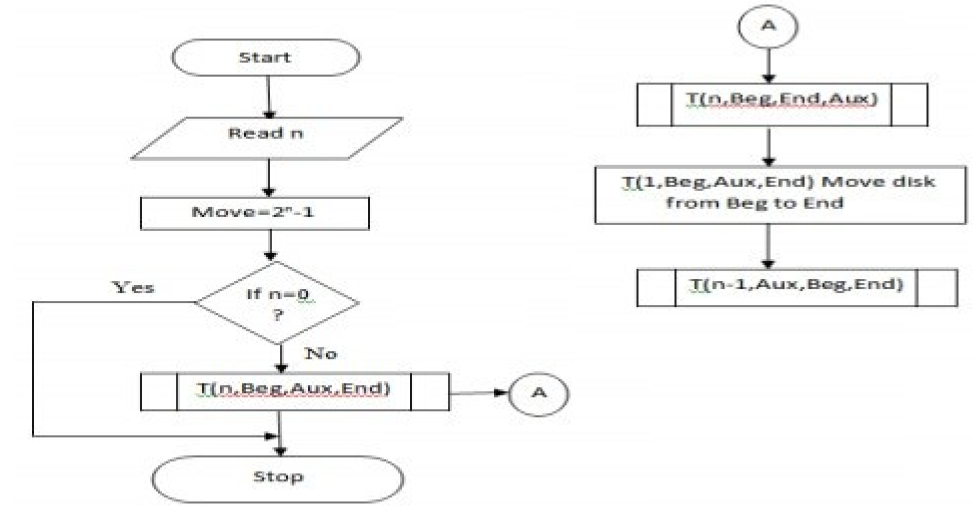
4. Tower of Hanoi

```
   def TowerOfHanoi(n , source, destination, auxiliary):
    if n==1:
       print ("Move disk 1 from source",source,"to
destination",destination)
       return
      TowerOfHanoi(n-1, source, auxiliary, destination)
      prin=t ("Move disk",n,"from source",source,"to
destination",destination)
      TowerOfHanoi(n-1, auxiliary, destination, source)
      n = 4
     TowerOfHanoi(n,'A','B','C')
```

Pseudcode

```
BEGIN
READ n
CALCULATE move=pow(2,n)-1
FUNCTION T(n,Beg,Aux,End) Recursiv ly until n=0
PROCEDURE
IF n=0 then,
No disk to move
Else
T(n-1,Beg,End,Aux)
T(1,Beg,Aux,End), move  isk from source to destination
T(n-1,Aux,Beg,En )
END PROCEDURE
END
```

Flowchart



5. Area and Circumference of a Circle

Program

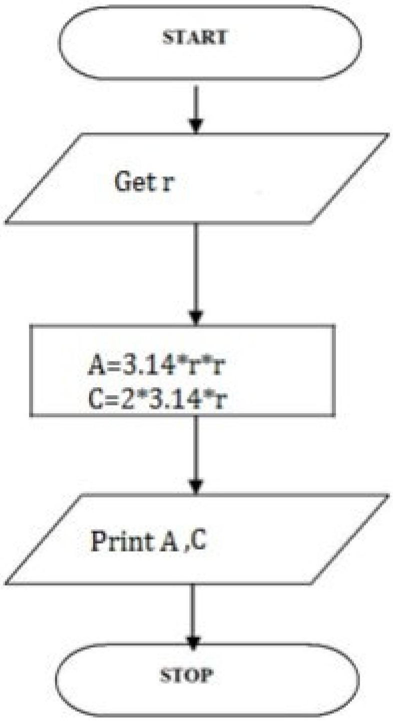
```
pi = 3.14
radius = int(input('Enter the radius of a circle: '))
area = pi * radius * radius
circumference= 2 * pi * radius

print(" Area of a circle: " ,area)
print(" Circumference of a circle: %.2f" %circumference)
```

Pseudcode

```
BEGIN
READ r
CALCULATE A and C
A=3.14*r*r
C=2*3.14*r
DISPLAY A
END
```

Flowchat


START
Get r
A=3.14*r*r
C=2*3.14*r
Print A ,C
STOP