Lab2_ITDSIU21095

October 11, 2022

[1]:
```
#1
number_list = []
for i in range (1,8):
    print('number  of reported infections day ', i,)
    num= int(input())
    number_list.append(num)
print('the total', sum(number_list))
print('the average', sum(number_list)/len('number_list'))
print('the smallest', min(number_list))
print('the largest', max(number_list))
```

```
number  of reported infections day  1
4
number  of reported infections day  2
4
number  of reported infections day  3
5
number  of reported infections day  4
6
number  of reported infections day  5
8
number  of reported infections day  6
9
number  of reported infections day  7
4
the total 40
the average 3.6363636363636362
the smallest 4
the largest 9
```

[2]:
```
#4
a = int(input('input the length of the three sides '))

if a%3 == 0:
    print('it is an equilateral triangle')
else:
    print('it is not equilateral triangle')
```

```
input the length of the three sides 56
```

```
it is not equilateral triangle
```

[3]:
```python
#5
a =  int(input('enter a number '))
n = []
for i in range(1,a):
    if a%i == 0:
        n.append(i)
if a == sum(n):
    print('this i a perfect number')
else:
    print('this is not a perfect number')
```

```
enter a number 45
this is not a perfect number
```

[14]:
```python
#6
def leibniz(n):
    t_sum = 0
    for i in range(n):
        term = (-1) ** i /(2*i+1)
        t_sum = t_sum + term

    return t_sum * 4

# Reading number of terms to be considered in Leibniz formula
terms = int(input("Enter number of terms: "))

# Function call
pi = leibniz(terms)
print("Pi",pi)
```

```
Enter number of terms: 35
Pi 3.1701582571925884
```

[15]:
```python
#7
import math

def fibo(n):
    phi = (1 + math.sqrt(5)) / 2

    return round(pow(phi, n) / math.sqrt(5))


n = 9

print(fibo(n))
```

```
34
```

8 a = 11 def pattern(a): for i in range (0,a): print(‘ ’i) print() for i in range(a): print(’‘(a-i)) print() for i in range(a-1): for j in range(i + 1): print(’ ’, end=’ ’) for k in range(a - i - 1): print(’’, *end=’‘) print() for i in range(0, a): print(’ ’ (a - i), ’’ i)*

pattern(a)

[13]:
```
#9

for i in range(1,11):
  for j in range(0,i):
    print('*',end=' ')
  for j in range(0,11-i):
    print(' ',end=' ')
  for j in range(0,11-i):
    print('*',end=' ')
  for j in range(0,2*i):
    print(' ',end=' ')
  for j in range(0,11-i):
    print('*',end=' ')
  for j in range(0,11-i):
    print(' ',end=' ')
  for j in range(0,i):
    print('*',end=' ')
  print()
```

```
*                   * * * * * * * * * * *     * * * * * * * * * * *
*
* *                 * * * * * * * * * *         * * * * * * * * * *
* *
* * *               * * * * * * * * *             * * * * * * * * *
* * *
* * * *             * * * * * * *                 * * * * * * *
* * * *
* * * * *           * * * * * *                     * * * * * *           *
* * * *
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* * * *
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* * * *
* * * * * * * *     * * *                                 * * *     * * * *
* * * *
* * * * * * * * *   * *                                     * *   * * * * *
* * * *
* * * * * * * * * * *   *                                       *   * * * * * *
* * * *
```

[6]:
```
#11
time = []
```

```
for i in range (1,11):
    print('the speed of',i ,'runner')
    num= int(input())
    time.append(num)
print("The fastest runner is the runner who has a speed of",sorted(time)[9],"m/
 ↪sec")
print("The second fastest runner is the runner who has a speed␣
 ↪of",sorted(time)[8],"m/sec")
```

```
the speed of 1 runner
34
the speed of 2 runner
54
the speed of 3 runner
34
the speed of 4 runner
45
the speed of 5 runner
65
the speed of 6 runner
33
the speed of 7 runner
45
the speed of 8 runner
56
the speed of 9 runner
66
the speed of 10 runner
78
The fastest runner is the runner who has a speed of 78 m/sec
The second fastest runner is the runner who has a speed of 66 m/sec
```

[10]:
```
temp = [19.5, 19.5, 21.6, 20.2, 19.7, 20.2, 18.6, 17.2, 19.5]
mean_temp = sum(temp)/len(temp)
print('The mean of temp is',mean_temp)
if len(temp)%2 ==1:
  median = temp[(len(temp)//2)]
elif len(temp)%2 ==0:
  x1 = temp[(len(temp)//2)-1]
  x2 = temp[(len(temp)//2)]
  median = (x1+x2)/2
print('The median of temp is',median)
counter = 0
num = temp[0]

for i in temp:
  curr_frequency = temp.count(i)
```

```
  if(curr_frequency> counter):
      counter = curr_frequency
      num = i
print('The number most appear is',num)
```

```
The mean of temp is 19.555555555555557
The median of temp is 19.7
The number most appear is 19.5
```

[ ]: