Python programming-CSA0814

DAY 5

(8 aug 24)

**1.STRONG NUMBER**

**import math**

**num=int(input(“enter the number:”))**

**orgnum=num**

**sof=0**

**while num>0:**

**digit=num%10**

**sof+=math.factorial(digit)**

**num//=0**

**if sof==orgnum:**

**print("strong number")**

**else:**

**print("not a string")**

**OUTPUT**

**Enter the number:145**

**Strong number**

**2.FIND THE GIVEN NUMBER IS PERFECT SQUARE OR NOT**

**import math**

**num=int(input())**

**sq=math.sqrt(num)**

**if sq\*sq==num:**

**print("perfect square")**

**else:**

**print("not a perfect square")**

**OUTPUT**

**25**

**Perfect square**

**3.FINDING THE NUMBER IS AUTOMORPHIC OR NOT**

**num=int(input())**

**sq=num\*\*2**

**nums=str(num)**

**sqs=str(sq)**

**if sqs.endswith(nums):**

**print("automorphic")**

**else:**

**print("not a automorphic")**

**OUTPUT**

**5**

**automorphic**

**4.FINDING HARSHAD NUMBER OR NOT**

**num=int(input())**

**sod=sum(int(digit) for digit in str(num))**

**if num%sod==0:**

**print("it is harshad number")**

**else:**

**print("it is not a harshad number")**

**OUTPUT**

**18**

**It is harshad number**

**5.SUM OF DIGIT UNTILL IT REACHES SINGLE DIGIT**

**import math**

**num=int(input())**

**while num>=10:**

**num=sum(int(digit) for digit in str(num))**

**print("the single digit is ",num)**

**OUTPUT**

**9876**

**The single digit is 3**

**6.PRINT HOLLOW PYRAMID PATTERN**

**rows = int(input("Enter the number of rows: "))**

**for i in range(rows):**

**print(" " \* (rows - i - 1), end="")**

**for j in range(2 \* i + 1):**

**if j == 0 or j == 2 \* i or i == rows - 1:**

**print("\*", end="")**

**else:**

**print(" ", end="")**

**print()**

**OUTPUT:**

**Enter the number of rows:5**

**\***

**\* \***

**\* \***

**\* \***

**\*\* \* \* \***

**7.FIBONACCI SERIES PATTERN TRIANGLE**

**import itertools**

**rows = int(input("Enter the number of rows: "))**

**a, b = 0, 1**

**fib\_gen = itertools.count(start=a)**

**for i in range(1, rows + 1):**

**for \_ in range(i):**

**print(a, end=" ")**

**a, b = b, a + b**

**print()**

**OUTPUT:**

**enter number of rows:4**

**0**

**11**

**235**

**81321**

**8.HOLLOW SQUARE PATTERN**

**size = int(input("Enter the size of the square: "))**

**for i in range(size):**

**for j in range(size):**

**if i == 0 or i == size - 1 or j == 0 or j == size - 1:**

**print("\*", end="")**

**else:**

**print(" ", end="")**

**print()**

**OUTPUT:**

**rows=4**

**\*\*\*\*\***

**\* \***

**\* \***

**\*\*\*\*\***

**9.FINDING SMITH NUMBER OR NOT**

**import sympy**

**num = int(input("Enter a number: "))**

**if num <= 1 or sympy.isprime(num):**

**print(f"{num} is not a Smith number.")**

**else:**

**sum\_digits\_num = sum(int(digit) for digit in str(num))**

**factors = sympy.factorint(num)**

**sum\_digits\_factors = sum(sum(int(digit) for digit in str(factor)) \* count**

**for factor, count in factors.items())**

**if sum\_digits\_num == sum\_digits\_factors:**

**print(f"{num} is a Smith number.")**

**else:**

**print(f"{num} is not a Smith number.")**

**OUTPUT:**

**Enter a number:22**

**it is smith number**

**10.PRINT THE FOLLOWING NUMBER PATTERN**

**1**

**12**

**123**

**1234**

**a=int(input())**

**for i in range(1,a+1):**

**for j in range(1,i+1):**

**print(i,end=" ")**

**print()**

**OUTPUT**

**5**

**1**

**2 2**

**3 3 3**

**4 4 4 4**

**5 5 5 5 5**