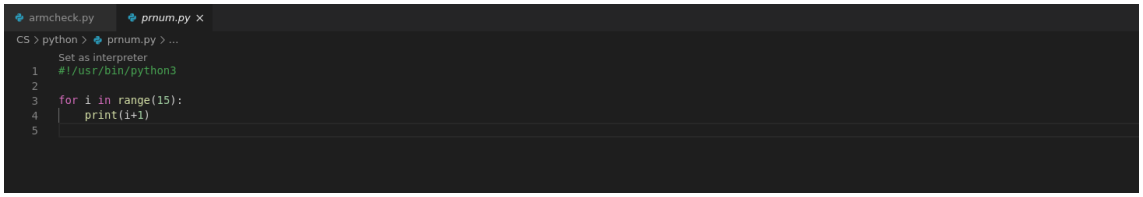
CP Assignment

Mehul Gulati (2020UCM2362)

March 5, 2021

1 Program to print numbers from 1 to 15

Source Code:



Output:

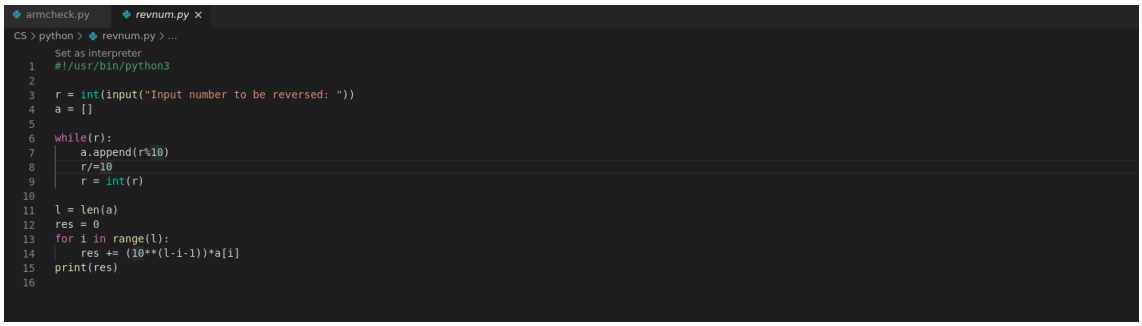
2 Program to calculate simple interest for 3 sets of constraints

Source Code:

Output:

3 Program to print reverse of a number

Source Code:



Output:

4 Program to calculate sum of digits of number

Source Code:

armcheck.py | digsum.py

CS > python > digsum.py > ...

Set as interpreter

```
#!/usr/bin/python3
t = int(input("Enter the number: "))
res = 0
while(t):
    res+=(t%10)
    t/=10
    t = int(t)
print("The sum of digits of number is: %d"%res)
```

Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
➜  python python3 digsum.py
Enter the number: 237326
The sum of digits of number is: 23
➜  python
```

5 Program to check palindrome number

Source Code:

armcheck.py palindrome.py ×

CS > python > palindrome.py > ...

Set as interpreter

```
#!/usr/bin/python3
t = int(input("Enter the number: "))
s = str(t)
l = len(s)

flag = 1
for i in range(l):
    if s[i] != s[l-1-i]:
        flag = 0
        break
if(flag):
    print("The number is a palindrome")
else:
    print("The number is not a palindrome")
```

Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
➜  python python3 palindrome.py
Enter the number: 545678
The number is not a palindrome
➜  python python3 palindrome.py
Enter the number: 3456543
The number is a palindrome
➜  python
```

6 Program to check prime number

Source Code:

armcheck.py primecheck.py ×

CS > python > primecheck.py > ...

Set as interpreter

```
#!/usr/bin/python3
import math
t = int(input("Enter the number: "))
n = int(math.sqrt(t))

flag = 1
i = 2
while(i<=n):
    if(t%i == 0):
        flag = 0
        break
    i+=1
if(flag):
    print("The number is a prime number")
else:
    print("The number is not a prime number")
```

Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
➜  python python3 primecheck.py
Enter the number: 34
The number is not a prime number
➜  python python3 primecheck.py
Enter the number: 23
The number is a prime number
➜  python
```

7 Program to check armstrong number

Source Code:

armcheck.py × primecheck.py

CS > python > armcheck.py > ...

Set as interpreter

```
#!/usr/bin/python3

t = int(input("Enter the number: "))
num = t
a = []
while(t):
    a.append(t%10)
    t/=10
    t = int(t)

l = len(a)
n = 0
for i in a:
    n += i**l
if(n == num):
    print("The number is an armstrong number")
else:
    print("The number is not an armstrong number")
```

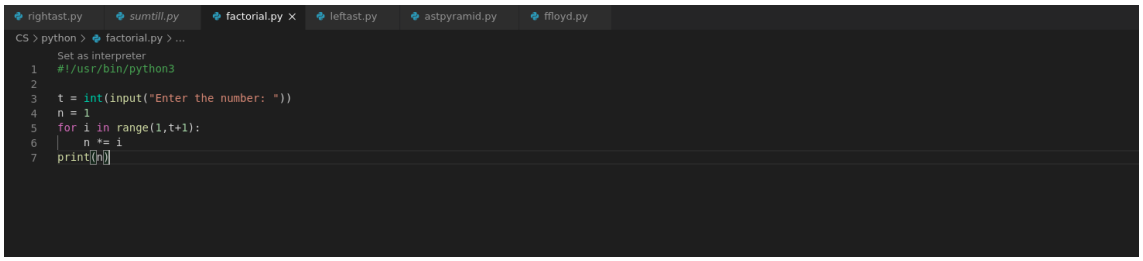
Output:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

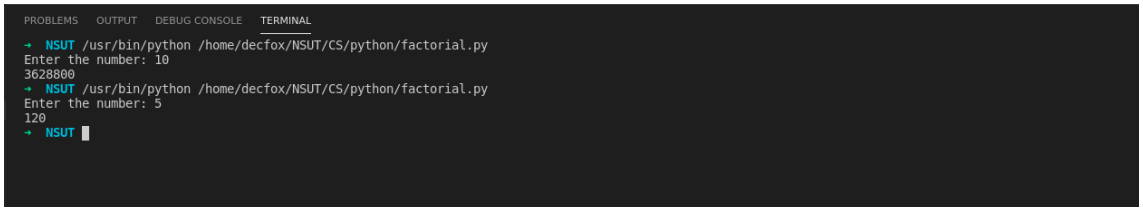
```
➜  python python3 armcheck.py
Enter the number: 513
The number is not an armstrong number
➜  python python3 armcheck.py
Enter the number: 153
The number is an armstrong number
➜  python
```

8 Program to generate factorial of given number

Source Code:

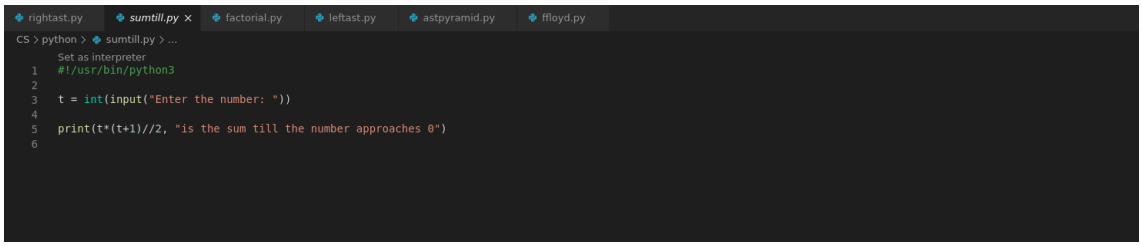


Output:



9 Program to add number until end by 0

Source Code:



Output:

10 Program to generate patterns and pyramids

Source Code:

rightast.py

```
#!/usr/bin/python3
t = int(input("Enter the number of rows: "))
for i in range(t):
    print("*"*(i+1))
```

leftast.py

```
#!/usr/bin/python3

t = int(input("Enter the number of rows: "))
for i in range(t):
    print(" "*(t-i-1) + "*"*(i+1))
```

astpyramid.py

```
#!/usr/bin/python3

t = int(input("Enter the number of rows: "))
for i in range(t):
    print(" "*(t-i) + "*"*(2*i+1))
```

ffloyd.py

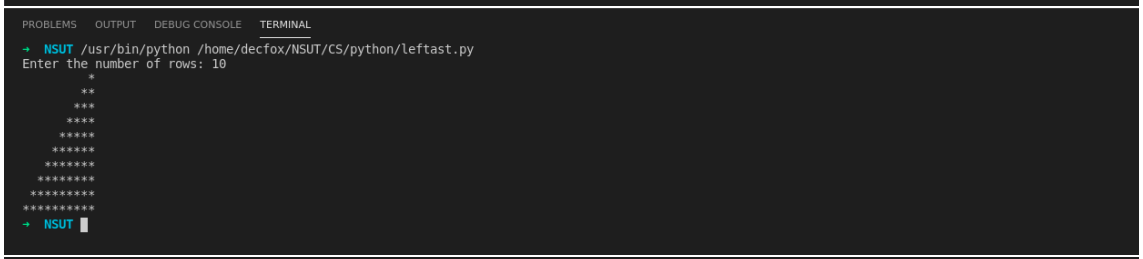
```
#!/usr/bin/python3

t = int(input("Enter the number of rows: "))
n = 1
for i in range(1,t+1):
    for j in range(i):
        print(n, end=" ")
        n+=1
    print("")
```

pascal.py

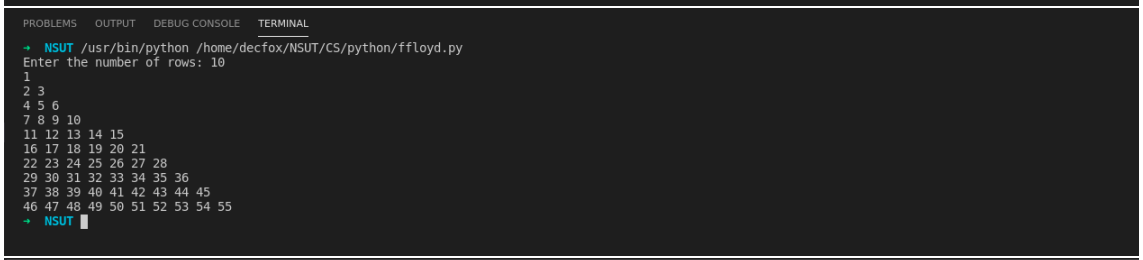
```
#!/usr/bin/python3

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

for i in range(1,t+1):
    print(" "*(t-i), end="")
    j = 1
    for l in range(i):
        if l==0:
            print(j, end=" ")
        else:
            j = (j*(i-l))//l
            print(j, end=" ")
    print()
```

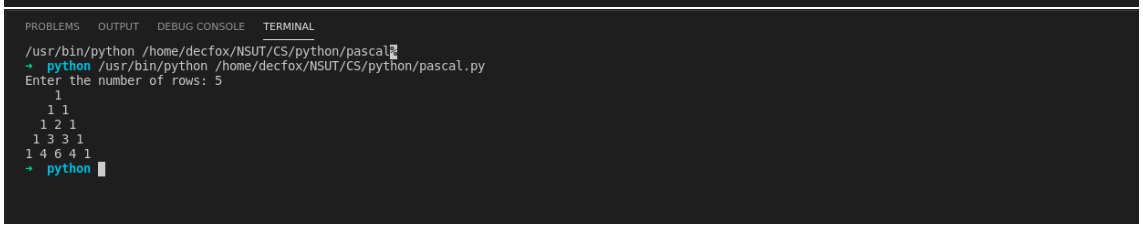
Output:


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
→ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/rightast.py
Enter the number of rows: 10
*
**
***
****
*****
******
****
****
****
****
→ NSUT


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
→ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/leftast.py
Enter the number of rows: 10
*
**
***
****
*****
******
****
****
****
****
→ NSUT


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
→ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/astpyramid.py
Enter the number of rows: 10
*
***
*****
****
****
****
****
****
****
****
→ NSUT


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
→ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/ffloyd.py
Enter the number of rows: 10
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45
46 47 48 49 50 51 52 53 54 55
→ NSUT


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
/usr/bin/python /home/decfox/NSUT/CS/python/pascal.py
→ python /usr/bin/python /home/decfox/NSUT/CS/python/pascal.py
Enter the number of rows: 5
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
→ python