

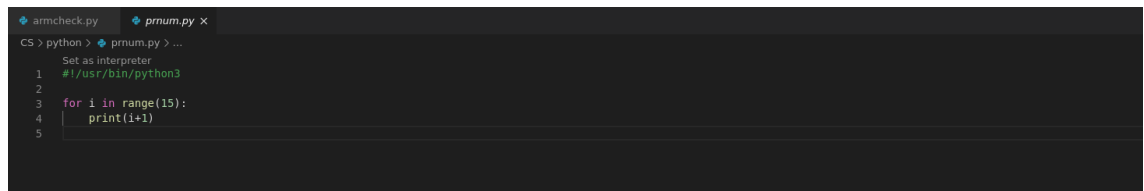
CP Assignment

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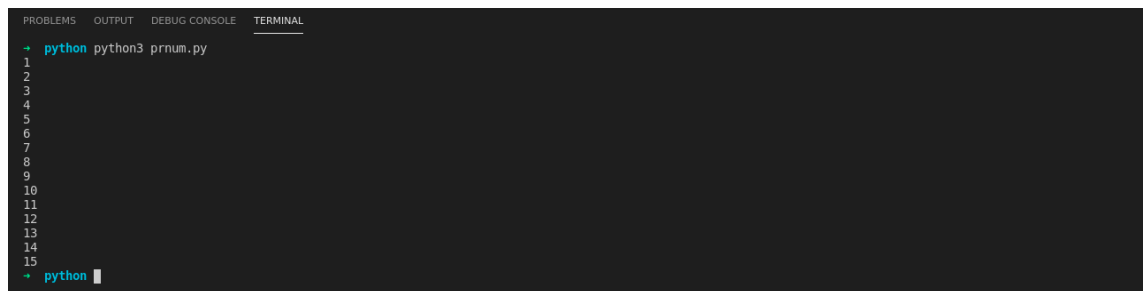
1 Program to print numbers from 1 to 15

Source Code:



```
armcheck.py  prnum.py x
CS > python > prnum.py > ...
Set as interpreter
1  #!/usr/bin/python3
2
3  for i in range(15):
4      print(i+1)
5
```

Output:



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
+ python python3 prnum.py
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
+ python
```

2 Program to calculate simple interest for 3 sets of constraints

Source Code:

```
armcheck.py simpleinterest.py x
CS > python > simpleinterest.py > ...
Set as interpreter
1 #!usr/bin/python3
2
3 for i in range(3):
4     p,r,t = map(int, input("Enter the principal, rate and time: ").split())
5     res = (p*r*t)/100
6     print("The simple interest on given constraints is: %.2f" %res)
```

Output:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
+ python python3 simpleinterest.py
Enter the principal, rate and time: 100 5 2
The simple interest on given constraints is: 10.00
Enter the principal, rate and time: 40 5 3
The simple interest on given constraints is: 6.00
Enter the principal, rate and time: 24 5 6
The simple interest on given constraints is: 7.20
+ python
```

3 Program to print reverse of a number

Source Code:

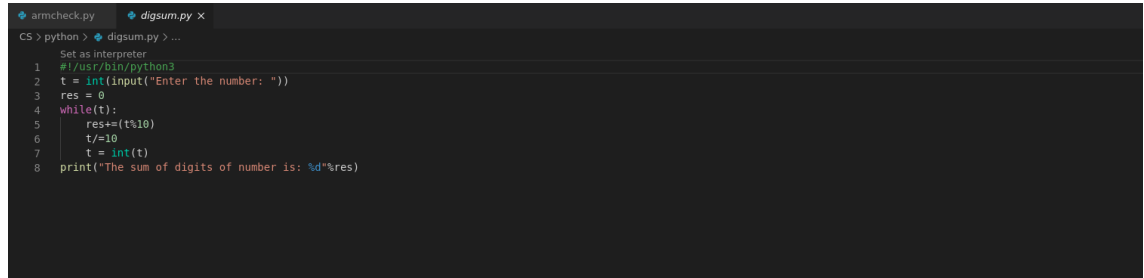
```
armcheck.py  revnum.py x
CS > python > revnum.py > ...
Set as interpreter
1  #!/usr/bin/python3
2
3  r = int(input("Input number to be reversed: "))
4  a = []
5
6  while(r):
7      a.append(r%10)
8      r/=10
9      r = int(r)
10
11 l = len(a)
12 res = 0
13 for i in range(l):
14     res += (10**(l-i-1))*a[i]
15 print(res)
16
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
+ python python3 revnum.py
Input number to be reversed: 23456
65432
+ python
```

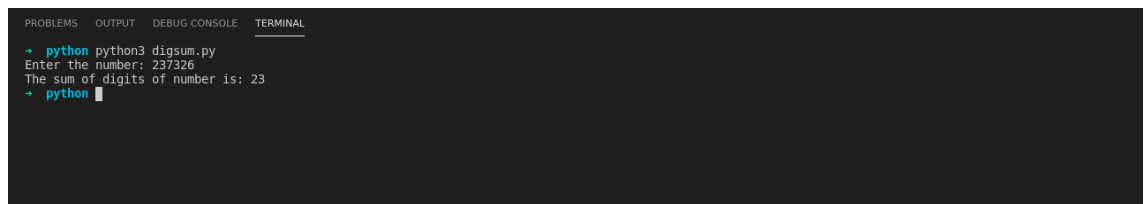
4 Program to calculate sum of digits of number

Source Code:



```
armcheck.py  digsum.py x
CS > python > digsum.py > ...
Set as interpreter
1  #!/usr/bin/python3
2  t = int(input("Enter the number: "))
3  res = 0
4  while(t):
5      res += (t%10)
6      t //= 10
7      t = int(t)
8  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 x
CS > python > palindrome.py > ...
Set as interpreter
1  #!/usr/bin/python3
2  t = int(input("Enter the number: "))
3  s = str(t)
4  l = len(s)
5
6  flag = 1
7  for i in range(l):
8      if s[i] != s[l-1-i]:
9          flag = 0
10         break
11 if(flag):
12     print("The number is a palindrome")
13 else:
14     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 X
CS > python > primecheck.py > ...
Set as interpreter
1  #!/usr/bin/python3
2  import math
3  t = int(input("Enter the number: "))
4  n = int(math.sqrt(t))
5
6  flag = 1
7  i = 2
8  while(i<=n):
9      if(t%i == 0):
10         flag = 0
11         break
12     i+=1
13 if(flag):
14     print("The number is a prime number")
15 else:
16     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 x primecheck.py
CS > python > armcheck.py > ...
Set as interpreter
1  #!/usr/bin/python3
2
3  t = int(input("Enter the number: "))
4  num = t
5  a = []
6  while(t):
7      a.append(t%10)
8      t/=10
9      t = int(t)
10
11 l = len(a)
12 n = 0
13 for i in a:
14     n += i**l
15 if(n == num):
16     print("The number is an armstrong number")
17 else:
18     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:

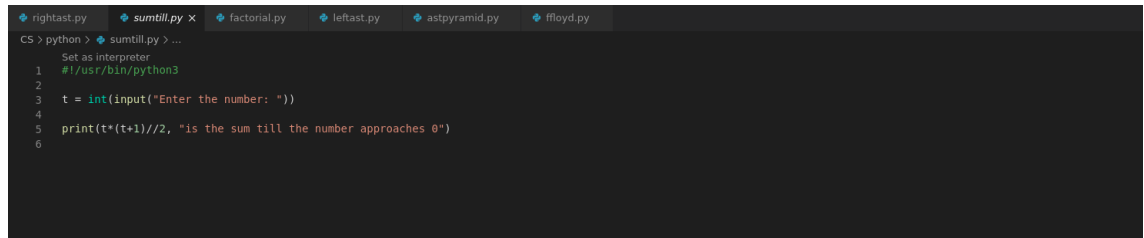
```
rightast.py  sumtil.py  factorial.py x  leftast.py  astpyramid.py  ffloyd.py
CS > python > factorial.py > ...
Set as interpreter
1  #!/usr/bin/python3
2
3  t = int(input("Enter the number: "))
4  n = 1
5  for i in range(1,t+1):
6      n *= i
7  print([n])
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
+ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/factorial.py
Enter the number: 10
3628800
+ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/factorial.py
Enter the number: 5
120
+ NSUT
```


9 Program to add number until end by 0

Source Code:



```
rightast.py  sumtill.py x  factorial.py  leftast.py  astpyramid.py  ffloyd.py
CS > python > sumtill.py > ...
Set as interpreter
1  #!/usr/bin/python3
2
3  t = int(input("Enter the number: "))
4
5  print(t*(t+1)//2, "is the sum till the number approaches 0")
6
```

Output:



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
+ NSUT /usr/bin/python /home/decfox/NSUT/CS/python/sumtill.py
Enter the number: 10
55 is the sum till the number approaches 0
+ NSUT
```

10 Program to generate patterns and pyramids

Source Code:

```
rightast.py x factorial.py leftast.py astpyramid.py floyd.py
CS > python > rightast.py > ...
Set as interpreter
1 #!/usr/bin/python3
2 t = int(input("Enter the number of rows: "))
3 for i in range(t):
4     print["**"*(i+1)]

rightast.py factorial.py leftast.py x astpyramid.py floyd.py
CS > python > leftast.py > ...
Set as interpreter
1 #!/usr/bin/python3
2
3 t = int(input("Enter the number of rows: "))
4 for i in range(t):
5     print(" "*(t-i-1) + "*"*(i+1))

rightast.py factorial.py leftast.py astpyramid.py x floyd.py
CS > python > astpyramid.py > ...
Set as interpreter
1 #!/usr/bin/python3
2
3 t = int(input("Enter the number of rows: "))
4 for i in range(t):
5     print(" "*(t-i) + "*"*(2*i+1))

rightast.py factorial.py leftast.py astpyramid.py floyd.py x
CS > python > floyd.py > 5
Set as interpreter
1 #!/usr/bin/python3
2
3 t = int(input("Enter the number of rows: "))
4 n = 1
5 for i in range(1,t+1):
6     for j in range(i):
7         print(n, end=" ")
8         n+=1
9     print("")

pascal.py x
pascal.py > ...
Set as interpreter
1 #!/usr/bin/python3
2
3 t = int(input("Enter the number of rows: "))
4
5 for i in range(1,t+1):
6     print(" "*(t-i), end="")
7     j = 1
8     for l in range(i):
9         if l==0:
10            print(j, end=" ")
11        else:
12            j = (j*(i-l))/l
13            print(j, end=" ")
14    print()
15
16
```

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 █
```