main.py

```python
#1. Area of the rectangle:

l=int(input())
w=int(input())
a=l*w
print(a)
```

```
4
5
20


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```
#2. Convert miles into kilometers:

m=int(input())
k=1.609*m
print(k)
```

```
7
11.263

...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
#1. To check the given string is palindrome or not

def fun(s):
    r=s[::-1]
    if r==s:
        return "Palindrome"
    else:
        return "Not a palindrome"
s=input()
print(fun(s))
```

```
madam
Palindrome


...Program finished with exit code 0
Press ENTER to exit console.
```

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main.py

```
#4. To find second largest element in a list:

l=list(map(int,input().split()))
l.sort()
print(l[len(l)-2])
```

```
45 76 89 90 34 12 76
89


...Program finished with exit code 0
Press ENTER to exit console.
```

untitled

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```
#5. Explain what indentation means in Python:

1. Indentation refers to the spaces at the beginning of a code line.
2. Python uses indentation to indicate a block of code.
3. If we do not follow the indentation, it will shows error.
```

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main.py

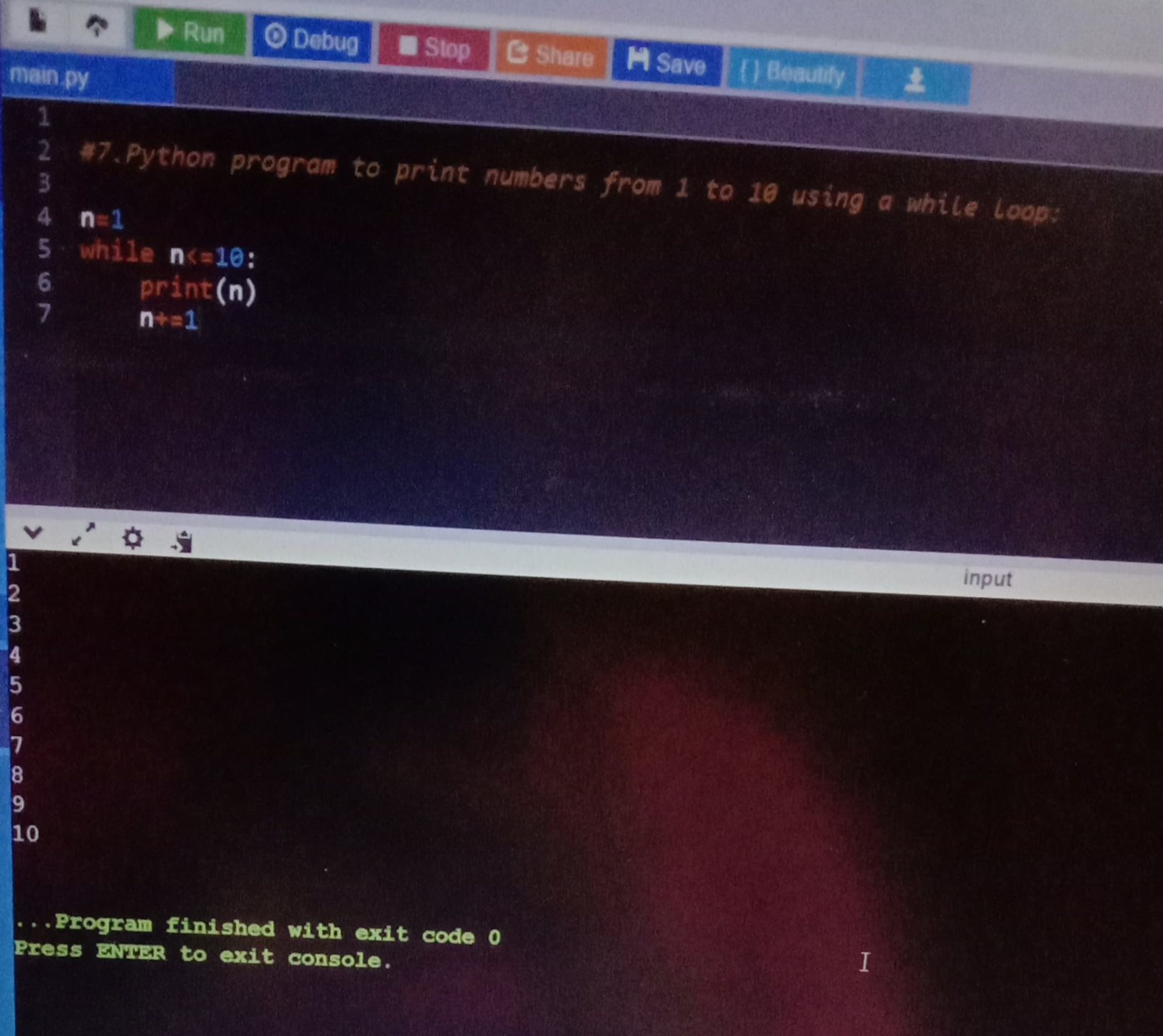
```
#6. Write a program to perform set difference operation:

set1={2,4,6,8,0}
set2={1,3,5,7,9}
print("Difference of se11 and set2 is:",set1-set2)
```

input

```
Difference of se11 and set2 is: {0, 2, 4, 6, 8}

...Program finished with exit code 0
Press ENTER to exit console.
```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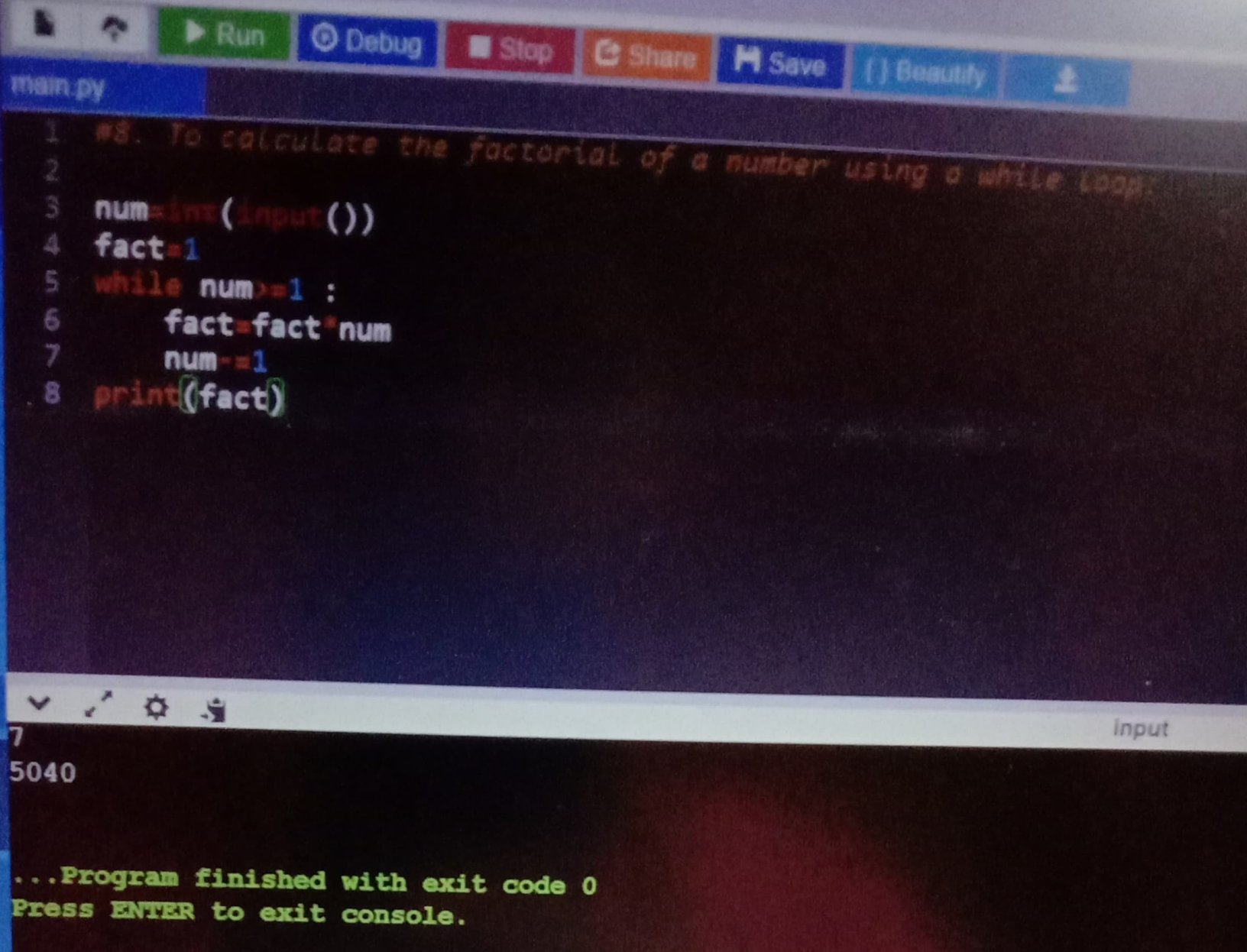
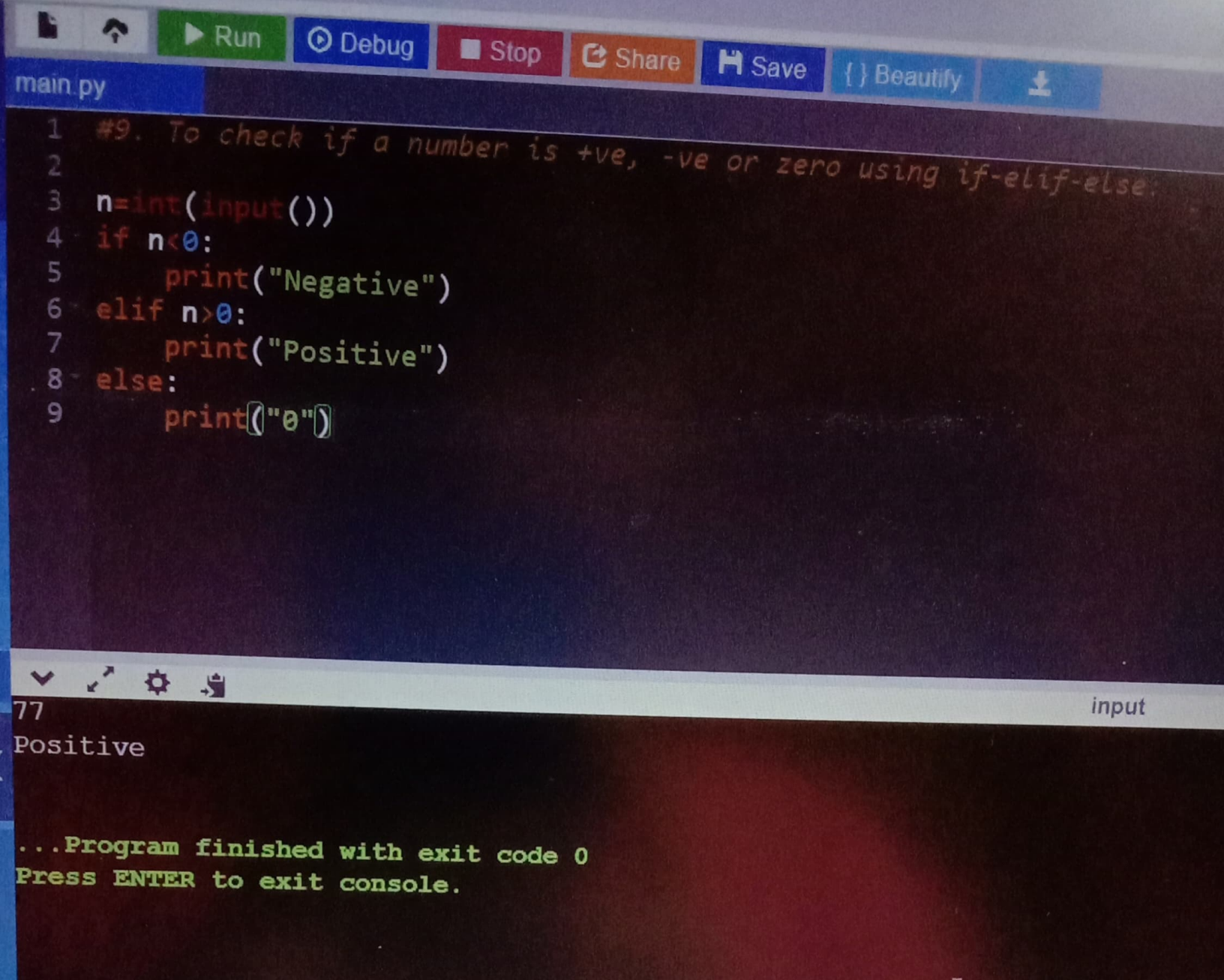
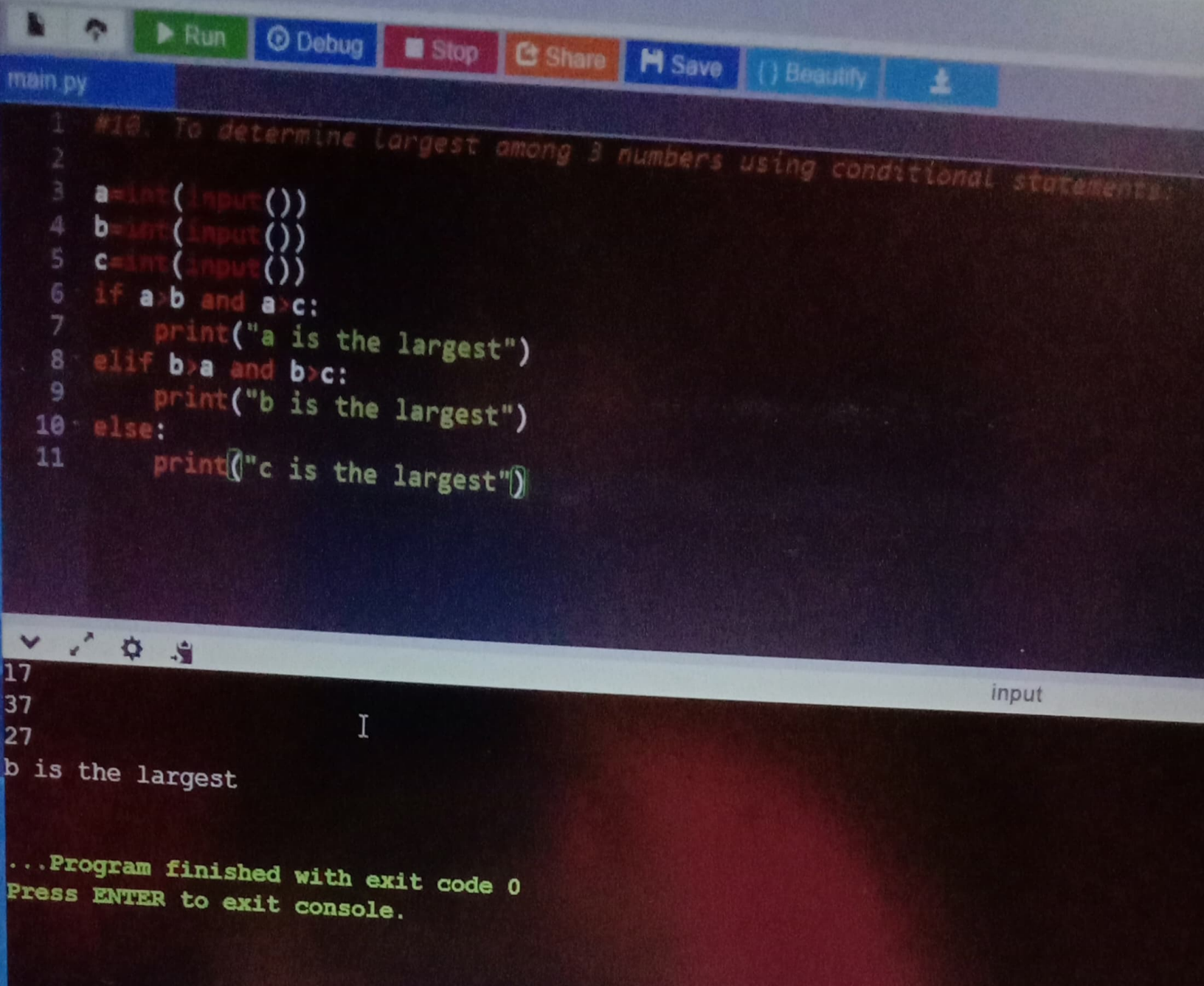
main.py
#7.Python program to print numbers from 1 to 10 using a while loop:
n=1
while n<=10:
print(n)
n+=1
input
1
2
3
4
5
6
7
8
9
10
...Program finished with exit code 0
Press ENTER to exit console.


Run
Debug
Stop
Share
Save
{} Beautify
main.py
#8. To calculate the factorial of a number using a while loop:
num=int(input())
fact=1
while num>=1 :
fact=fact*num
num-=1
print(fact)
Input
7
5040
...Program finished with exit code 0
Press ENTER to exit console.


Run
Debug
Stop
Share
Save
{ } Beautify
main.py
#9. To check if a number is +ve, -ve or zero using if-elif-else:
n=int(input())
if n<0:
print("Negative")
elif n>0:
print("Positive")
else:
print("0")
input
77
Positive
...Program finished with exit code 0
Press ENTER to exit console.


Run
Debug
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main.py
#10. To determine largest among 3 numbers using conditional statements:
a=int(input())
b=int(input())
c=int(input())
if a>b and a>c:
print("a is the largest")
elif b>a and b>c:
print("b is the largest")
else:
print("c is the largest")
input
17
37
27
b is the largest
...Program finished with exit code 0
Press ENTER to exit console.

main.py

```python
#11. Program to create a numpy array filled with ones of given shape:

import numpy as np
a=np.ones(3,dtype=int)
b=np.ones([3,3],dtype=int)
print(b)
```

input

```
[[1 1 1]
 [1 1 1]
 [1 1 1]]


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
import numpy as np

def create2d_array(rows, cols, low=0, high=10):
    random_array = np.random.randint(low, high, size=(rows, cols))
    return random_array
rows = 4
cols = 3
random_2d_array = create2d_array(rows, cols)

print("Random 2D Array is:")
print(random_2d_array)

```

input

```
[[1 6 8]
 [3 5 7]
 [1 9 0]
 [7 3 2]]
```

main.py

```python
import numpy as np

def linspace_array(start, stop, num=10):
    linspace_array = np.linspace(start, stop, num)
    return linspace_array
start_value = 1
end_value = 10
number_of_samples = 5
linspace_result = linspace_array(start_value, end_value, number_of_samples)

print("Linspace Array:")
print(linspace_result)

```

input

```
Linspace Array:
[ 1.    3.25  5.5   7.75 10.  ]


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
import numpy as np

equally_spaced_array = np.linspace(1, 100, 10)
print("Array of 10 equally spaced values between 1 and 100:")
print(equally_spaced_array)

```

input

```
Array of 10 equally spaced values between 1 and 100:
[  1.  12.  23.  34.  45.  56.  67.  78.  89. 100.]


...Program finished with exit code 0
Press ENTER to exit console.
```

```python
import numpy as np


even_numbers_array = np.arange(2, 21, 2)
print("Array of even numbers from 2 to 20:")
print(even_numbers_array)

```

```
Array of even numbers from 2 to 20:
[ 2  4  6  8 10 12 14 16 18 20]


...Program finished with exit code 0
Press ENTER to exit console.
```

main.py

```python
import numpy as np


numbers_array = np.arange(1, 11, 0.5)


print("Array of numbers from 1 to 10 with a step size of 0.5:")
print(numbers_array)

```

input

```
Array of numbers from 1 to 10 with a step size of 0.5:
[ 1.   1.5  2.   2.5  3.   3.5  4.   4.5  5.   5.5  6.   6.5  7.   7.5
  8.   8.5  9.   9.5 10.  10.5]


...Program finished with exit code 0
Press ENTER to exit console.
```