

## Exercise 1: Draw diamond with python language

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Expected result:

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

Requirement:

- Python language
- Logically algorithm

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

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

### Exercise 2: Draw diamond with python language with function

**Expected result:**

- Same as exercise 1

**Requirement:**

- Python language
- Function usage required
- Adjustable of width and depth
- Can draw multiple diamonds
- Error input handle

```

    *
  ***
*****
*****
*****
*****
*****
  ***
    *

    *
  ***
*****
*****
*****
*****
  ***
    *
    *
  ***
*****
*****
  ***
    *
    *

```

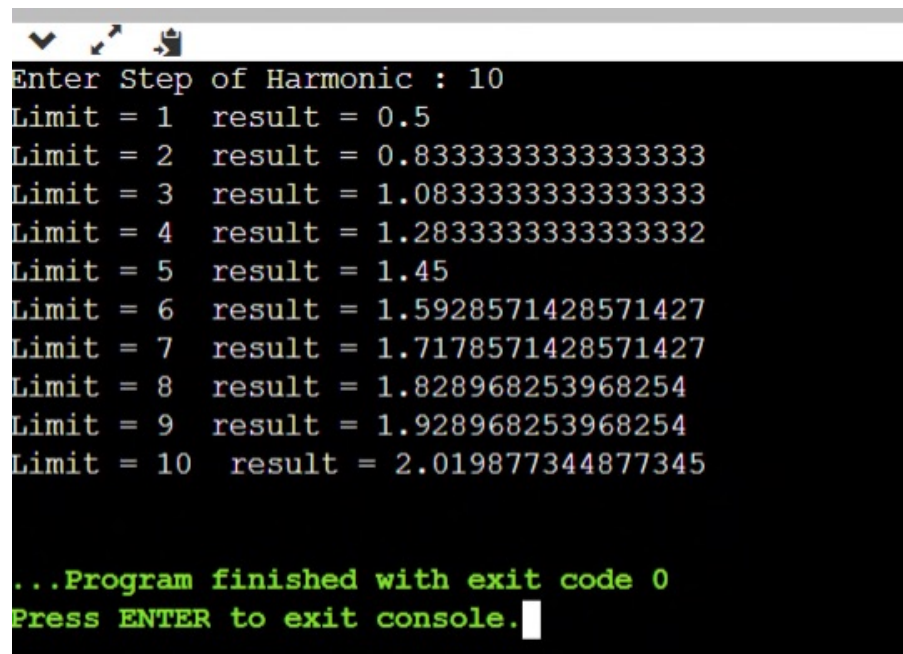
...Program finished with exit code 0  
Press ENTER to exit console.

#### Exercise 4: Summation of harmonic series

$$\sum_{n=1}^{\text{limit}} \frac{1}{n+1}$$

##### Requirement:

- Python language with recursive programming
- Adjustable of limited value
- Draw data flow of program



```
Enter Step of Harmonic : 10
Limit = 1  result = 0.5
Limit = 2  result = 0.8333333333333333
Limit = 3  result = 1.0833333333333333
Limit = 4  result = 1.2833333333333332
Limit = 5  result = 1.45
Limit = 6  result = 1.5928571428571427
Limit = 7  result = 1.7178571428571427
Limit = 8  result = 1.828968253968254
Limit = 9  result = 1.928968253968254
Limit = 10 result = 2.019877344877345

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