

Python Programming

Function Homework 2

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Teaching, Training and Coaching since more than a decade!

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Recall: Special Calculator

- Design a small application that keeps asking the user 3 choices:
 - Enter 1 to sum integers from 1 to N
 - Enter 2 to evaluate simple 2 numbers expression (e.g. $2 + 3$)
 - Expect 3 items. Operations are: $+$ $-$ $*$ $/$ $//$ $**$
 - Enter 3 to end the program
- The user should input value from 1 to 3
 - Otherwise, inform that this is invalid and try again
- Take proper input from the user and compute the answer
 - See next console simulation

Special Calculator

Menu:

Enter 1 to sum numbers from 1 to N

Enter 2 to evaluate simple 2 numbers expression (e.g. 2 + 3)

Enter 3 to end the program

Enter choice from 1 to 3: 5

Invalid Input...Try again

Menu:

Enter 1 to sum numbers from 1 to N

Enter 2 to evaluate simple 2 numbers expression (e.g. 2 + 3)

Enter 3 to end the program

Enter choice from 1 to 3: 1

Enter a number: 6

Sum from 1 to 6 is 15

Menu:

Enter 1 to sum numbers from 1 to N

Enter 2 to evaluate simple 2 numbers expression (e.g. 2 + 3)

Enter 3 to end the program

Enter choice from 1 to 3: 2

Enter a simple expression: 2 ** 4

Expression value is 16.0

Menu:

Enter 1 to sum numbers from 1 to N

Enter 2 to evaluate simple 2 numbers expression (e.g. 2 + 3)

Enter 3 to end the program

Enter choice from 1 to 3: 2

Enter a simple expression: 5 // 0

Sorry: No way to compute this expression

Menu:

Enter 1 to sum numbers from 1 to N

Enter 2 to evaluate simple 2 numbers expression (e.g. 2 + 3)

Enter 3 to end the program

Enter choice from 1 to 3: 3

Process finished with exit code 0

Rewrite the previous code as functions

- Print_menu: print the menu and read a valid choice
 - Don't return unless go number from 1 to 3
- Divide is just divide logic for handling / 0
 - If / 0 or // 0 return None
- Expression to parse e.g. $x + y$
- Interface: the core logic
 - Print, if else on choices
- Got lost? Just do your own rewriting

```
def print_menu():...  
  
def sum_1_to_n():...  
  
def divide(num1, num2, operation):...  
  
def expression():...  
  
def calculator_interface():...  
  
calculator_interface()
```

A good developer

- Provide docstring and code comments for your software

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”