# TASK – WEEK 6

TASK: Custom functions, lambda expressions, and handling exceptions in Python

## 1. Create a custom calculator function

- Define a function *calculate()* that can take any number of numeric arguments and apply a basic arithmetic operation (+, -, \*, /) to them.  
- Set the default operation to **addition** (+).  
- Handle edge cases:  
 1. If no numbers are passed, return 0  
 2. Handle the division by 0  
- Return the result of applying the operation to all numbers.  
- Call the function multiple times using:  
 1. Positional arguments  
 2. Named operation argument

Example usage:  
 calculate(2, 3, 4, operation='\*')  
 calculate(10, 0, operation='/')  
 calculate(operation='-')

## 2. Sort students by score using lambda

- You are given two lists:  
 names = ["Lucas", "Nataly", "Megi", "Maria", "Steven"]  
 scores = [85, 92, 78, 81, 67]  
- Combine the names and scores into a single collection of (name, score) pairs.  
- Sort the result in descending order by score using a ‘*lambda*’ function.  
- Only include students who scored **80 or above** in the final output.  
- Print the sorted list of (name, score) pairs.

- Expected output:  
 Nataly: 92  
 Lucas: 85  
 Maria: 81

## 3. Validate age input

- Write a function ‘check\_age(age)’ that validates user input and handles different types of errors using multiple except blocks.  
- Prompt the user to enter their age (as input).  
- Attempt to convert the input to an integer:  
 1. If it fails, catch adequate ExceptionType error and print a custom error message.  
 2. If the number is negative or greater than 120, raise adequate ExceptionType error and print a custom error message.  
 3. If the input is an empty string, raise adequate ExceptionType error and print a custom error message.  
 4. In any case print 'Validation complete'.  
- Test the function by calling it with both valid and invalid inputs.

## Note

- Tasks are not mandatory; they are voluntary.  
- Tasks are not time-limited when they need to be done – ideally, they should follow up on a weekly presentation, but not necessarily.  
- Saved .py files send to emails:  
 [bosko.nikolic@endava.com](mailto:bosko.nikolic@endava.com)  
 [djordje.munizaba@endava.com](mailto:djordje.munizaba@endava.com)