

# FUNCTIONS, IF STATEMENTS, AND LOOPS IN PYTHON

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Here's a set of programming exercises involving functions, if statements and loops that you can solve:

1. Even or Odd: Write a function called `evenOrOdd` that takes an integer as input and returns "Even" if the number is even, and "Odd" if the number is odd.
2. Maximum of Two Numbers: Write a function called `maxOfTwo` that takes two numbers as input and returns the maximum of the two.
3. Leap Year Checker: Write a function called `isLeapYear` that takes a year as input and returns True if it is a leap year, and False otherwise. (A leap year is divisible by 4, but not by 100 unless it is also divisible by 400).
4. Factorial Calculator: Write a function called `factorial` that takes an integer as input and returns its factorial. The factorial of a number  $n$  is the product of all positive integers less than or equal to  $n$ .
5. Greatest Common Divisor (GCD): Write a function called `gcd` that takes two positive integers as input and returns their greatest common divisor.
6. Absolute Value: Write a function called `absoluteValue` that takes a number as input and returns its absolute value without using the built-in `abs()` function.
7. Temperature Converter: Write a function called `convertTemperature` that takes a temperature in Celsius as input and returns it converted to Fahrenheit. The conversion formula is:  $\text{Fahrenheit} = (\text{Celsius} * 9/5) + 32$ .



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8. Grade Calculator: Write a function called `calculateGrade` that takes a score as input and returns the corresponding letter grade according to the following scheme:

- 90-100: A
- 80-89: B
- 70-79: C
- 60-69: D
- Below 60: F

9. Sum of Squares with Loop: Write a function called `sumOfSquares` that takes a positive integer `n` as input and calculates the sum of the squares of all positive integers up to `n` using a loop. The function should return the resulting sum.

10. Quadratic Equation Solver: Write a function called `solveQuadratic` that takes three numbers (`a`, `b`, `c`) as input, representing the coefficients of a quadratic equation  $ax^2 + bx + c = 0$ , and returns the solutions as a tuple. If the equation has no real roots, return `None`.

Feel free to try solving these exercises, and let me know if you need any further assistance or solutions!



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## Want to Become a Python Expert?

If you're serious about learning Python and getting ready for Data Analysis or Web Development roles using Python, I highly encourage you to enroll in my Complete Python Course. Don't waste your time following disconnected, outdated tutorials.

My Complete Python Course has everything you need in one place.

- About 10 hours of HD video
- Unlimited access - watch it as many times as you want
- Self-paced learning - take your time if you prefer
- Watch it online or download and watch it offline
- One-on-one training with me 2-4 times a week

Sincerely,



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