**Exercises: Level 1**

1. Declare a function *add\_two\_numbers*. It takes two parameters and it returns a sum.
2. Area of a circle is calculated as follows: area = π x r x r. Write a function that calculates *area\_of\_circle*.
3. Write a function called add\_all\_nums which takes arbitrary number of arguments and sums all the arguments. Check if all the list items are number types. If not do give a reasonable feedback.
4. Temperature in °C can be converted to °F using this formula: °F = (°C x 9/5) + 32. Write a function which converts °C to °F, *convert\_celsius\_to-fahrenheit*.
5. Write a function called check-season, it takes a month parameter and returns the season: Autumn, Winter, Spring or Summer.
6. Write a function called calculate\_slope which return the slope of a linear equation
7. Quadratic equation is calculated as follows: ax² + bx + c = 0. Write a function which calculates solution set of a quadratic equation, *solve\_quadratic\_eqn*.
8. Declare a function named print\_list. It takes a list as a parameter and it prints out each element of the list.
9. Declare a function named reverse\_list. It takes an array as a parameter and it returns the reverse of the array (use loops).

print(reverse\_list([1, 2, 3, 4, 5]))

# [5, 4, 3, 2, 1]

print(reverse\_list1(["A", "B", "C"]))

# ["C", "B", "A"]

10 Declare a function named sum\_of\_odds. It takes a number parameter and it adds all the odd numbers in that range.

1. Declare a function named sum\_of\_even. It takes a number parameter and it adds all the even numbers in that - range.

**Exercises: Level 2**

1. Declare a function named evens\_and\_odds . It takes a positive integer as parameter and it counts number of evens and odds in the number.

print(evens\_and\_odds(100))

# The number of odds are 50.

# The number of evens are 51.

1. Call your function factorial, it takes a whole number as a parameter and it return a factorial of the number
2. Call your function *is\_empty*, it takes a parameter and it checks if it is empty or not
3. Write different functions which take lists. They should calculate\_mean, calculate\_median, calculate\_mode, calculate\_range, calculate\_variance, calculate\_std (standard deviation).

**Exercises: Level 3**

1. Write a function called is\_prime, which checks if a number is prime.
2. Write a functions which checks if all items are unique in the list.
3. Write a function which checks if all the items of the list are of the same data type.
4. Write a function which check if provided variable is a valid python variable
5. Go to the data folder and access the countries-data.py file.

* Create a function called the most\_spoken\_languages in the world. It should return 10 or 20 most spoken languages in the world in descending order
* Create a function called the most\_populated\_countries. It should return 10 or 20 most populated countries in descending order.