

In the name of God
Quiz 1 – Data science and HPC

- Write your codes in a notebook file so we can see codes and results together.
- If you want to write your codes in a jl file, take a couple of photos of your terminal and attach them in a zip file.

- 1- Write a function **isPrime** which, given an **integer n**, returns true if n is a prime number and false if it is not. A prime number is an integer > 1 which is divisible only by 1 and itself.

Using function **isPrime**, write a program to prompt for an even number n greater than 4 and print all pairs of prime numbers which add up to n. Print an appropriate message if n is not valid. For example, if n is 22, your program should print this:

3 19

5 17

11 11

- 2- The number 27472 is palindromic since it reads the same forwards and backward. Write a function that, given an integer n, returns true if n is palindromic and false if it is not.
- 3- Generate two integer random arrays A and B each of maximum size 500 and size should be random, containing numbers in arbitrary order. The variables m and n indicate how many numbers are stored in A and B, respectively. Write code to merge the elements of A and B into another array C of size m+n such that C contains the numbers in ascending order.
- 4- Generate this output using only ONE VARIABLE and ONE LINE of code:
- ```
[[1,2,3], [1,2,3], [1,2,3], [1,2,3]]
[[1,2,3], [1,2,3], [1,2,3], [1,2,3]]
[[1,2,3], [1,2,3], [1,2,3], [1,2,3]]
[[1,2,3], [1,2,3], [1,2,3], [1,2,3]]
[[1,2,3], [1,2,3], [1,2,3], [1,2,3]]
[[1,2,3], [1,2,3], [1,2,3], [1,2,3]]
```