Task 1.

Create a web page that uses php script for calculation of the Fibonacci numbers array. In mathematics, Fibonacci numbers are special integer sequences where a number is composed from summation of the past two numbers, or:

$$F(n) = \begin{cases} 0\,, & if\ n = 0 \\ 1, & if\ n = 1 \\ F(n-1) + F(n-2), & if\ n > 1 \end{cases}$$

The user should enter the number *n*, and after pressing button calculate the number array should be displayed.

Task 2.

Create a class that will implement data structure STACK (Last In First Out). The class should have following functionalities:

- Push: add an item at the top of the stack,
- Pop: remove the top item of the stack,
- Top: returns the top item of the stack. It is not the same as pop, as it does not remove the item, it just returns the value,
- isEmpty: checks whether the stack is empty or not.

The STACK has limited space (limited number of elements).
Write php script that will use and test the functionalities of the class.

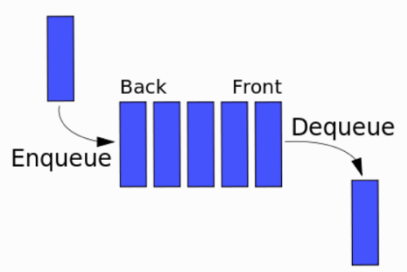
Task 3.

Create a class that will implement data structure QUEUE (First In First Out). The class should have following functionalities:

- Enqueue: add an item to the queue,
- Dequeue: remove an item from the queue,
- Peek: looking at the front element of the queue without removing the element,
- isEmpty: checks whether the queue is empty or not.

This is different from a stack because the insertion will always be at the back or rear section and the removal of an element will take place from the frontend.
The QUEUE has limited space (limited number of elements).
Write php script that will use and test the functionalities.

*Complete the task using Standard PHP Library (SPL).



If you want to learn something more (not part of the subject material)

Employing Google Charts in your web programs

Google gallery provides a variety of charts designed to address your data visualization needs. These charts are based on pure HTML5/SVG technology (adopting VML for old IE versions), so no plugins are required. You can try to implement some simple examples using the sources:

- https://developers.google.com/chart/,
- https://developers.google.com/chart/interactive/docs/quick_start