

THE NUMPY LIBRARY OF THE PYTHON PROGRAMMING LANGUAGE IS AN OPTIMAL
SOLUTION FOR WORKING WITH ARRAYS

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Annotation: *Arrays are one of the most important parts of programming, so there are several ways to learn them, to help new programmers master arrays, below are some of the best ways to create one-dimensional arrays.*

Key words: *Array, Google colab, NumPy, Information technology, Jupyter notebook, one-dimensional array, vectorized computing, Python.*

INTRODUCTION

It is no exaggeration to say that the IT industry, one of the modern professions of today, has taken its place in all layers of our society:

- Social sphere
- Health care
- Education
- Agriculture
- Production
- Construction
- Economic field
- Technique

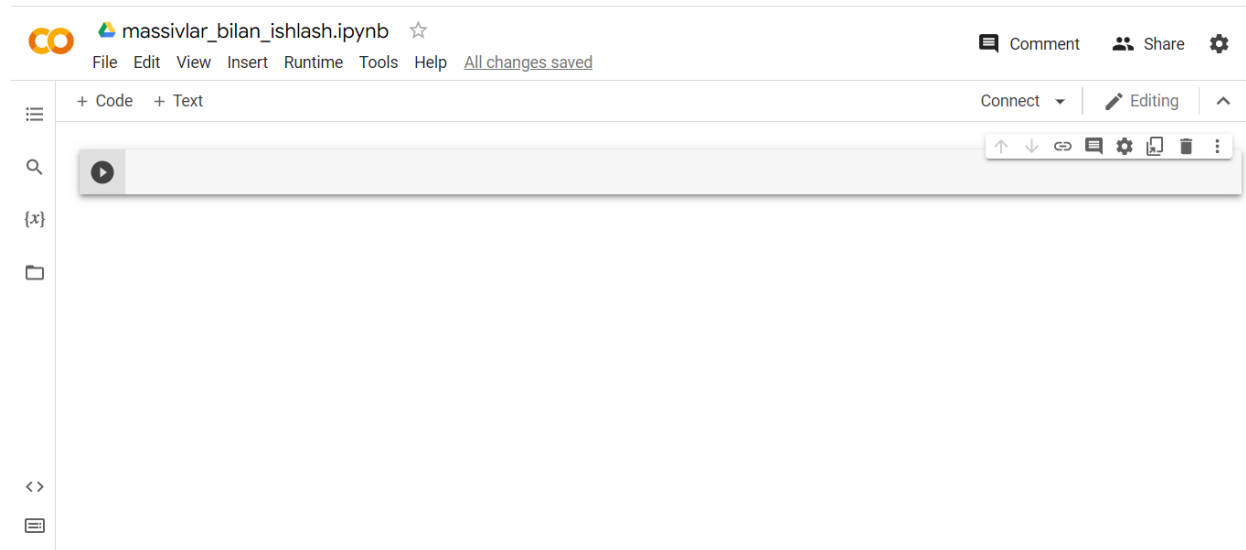
has taken its place in advanced areas such as.

In the process of learning this field, you will face many difficulties, the most common of which is the process of working with arrays. Before talking about the array, we will talk about its importance or the role of the array in the field of programming. What is an array?

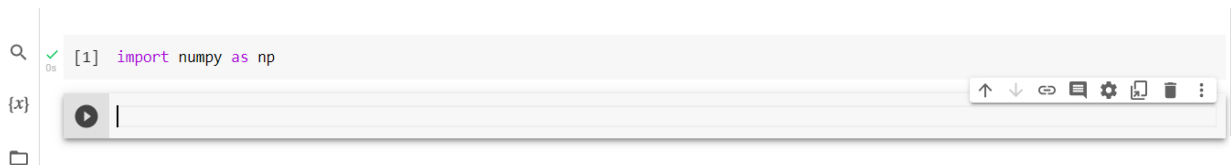
- An array is a set of ordered data stored with a single name belonging to one type. The concept of an array exists in all programming languages, or this term is familiar to many in mathematics through the concept of a matrix, we usually use the concept of an array a lot.

When learning arrays, we refer to NumPy, one of the largest libraries of the Python programming language, and we refer to Google Colab, one of the most convenient platforms for creating Python code, so why Google Colab, because this platform supports other languages does not support, is a free service created for creating Python codes, it is mainly used by big data professionals and artificial intelligence researchers, and in addition, it does not require installation on the device and provides convenient operation

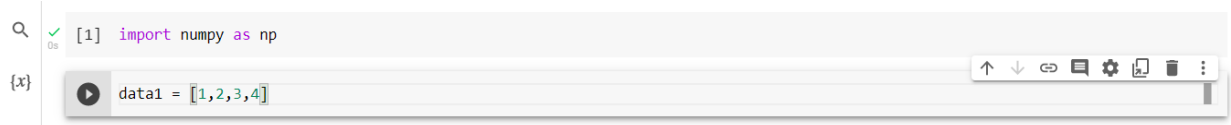
on all computers connected to the Internet will give. That's why this platform is very widely used to learn python programming language and it can be accessed through this address <https://colab.research.google.com>



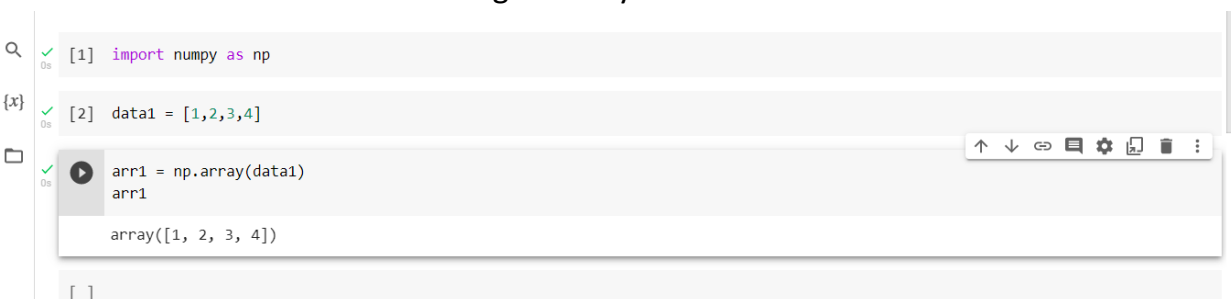
After this window is created, we start the workflow, first to call the numpy library by typing `import numpy as np`, which will create the following window



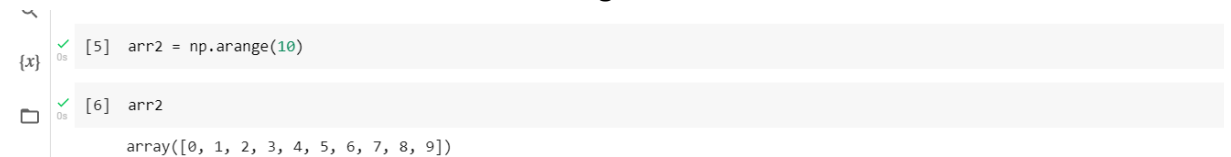
There are several ways to create arrays, one of the easiest ways is using the array function. This function accepts any type of serial data and converts it to a NumPy array. To test this, let's create some serialized data



and to create an array from this data, we refer to the array function of the NumPy library, and when we pass `data1`, an array of the following form is created for us. This method is the first method of creating an array.



In the second method, we use the arange function



arrange function gives us integers from 0 to 10. The third method serves to generate an array of 10 arbitrary elements through the random function

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