Using numpy to develop a helper system for various Mathematical operation

END TERM REPORT

BY

ROLL.NO	NAME	REGISTRATION NUMBER
21	ANTONY.NAKKA	11906148
26	MANIKUMAR.A	11906137
27	VENKAT.A	11906247

Student Declaration

This is to declare that this report has been written by our team. No part of this report is copied from other sources. All information included from other sources have been duly acknowledge. we aver that if any part of the report is found to be copied ,we shall take responsibility for it.

ROLL.NO	NAME	REGISTRATION NUMBER
21	ANTONY.NAKKA	11906148
26	MANIKUMAR.A	11906137
27	VENKAT.A	11906247

BONAFIDE CERTIFICATE

Certified that this project report “using numpy to develop a helper system for various mathematical operations” is the benefitted work of “ ”who carried out work under my supervision.

Dr. Dhanpratap singh

Associate professor,

Department : intelligence system,

LPU,Phagwara.

DESCRIPTION OF THE PROJECT

The project “use bumpy to develop a helper system for various mathematical operations” main theme is using the in-built numpy package inorder to develop a helper system for its mathematical operations.using this numpy package we created a package to perform mathematical operations. this user-defined package we created consists of serval modules to keep it less complicate

Numpy offers a range of powerful Mathematical functions. This is one of the reasons why the library is popular in quantitative fields. Additionally, a numbe of

Numpy is a general-purpose array-processing package. It provides a high-performance multidimensional array object, and tools for working with these arrays. It is the fundamental package for scientific computing with Python.Besides its obvious scientific uses, Numpy can also be used as an efficient multi-dimensional container of generic data.

NumPy is a library for the Python programming language that allows for more data storage with less memory. With a multidimensional array and other resources, NumPy allows Python programmers to store numbers efficiently.Besides its obvious scientific uses, NumPy can also be used as an efficient

multi-dimensional container of generic data.Arbitrary data-types can be defined using Numpy which allows NumPy to seamlessly and speedily integrate with a wide variety of databases.

Furthermore, NumPy enriches the programming language Python with powerful data structures, implementing multi-dimensional arrays and matrices. These data structures guarantee efficient calculations with matrices and arrays. The implementation is even aiming at huge matrices and arrays, better know under the heading of "big data". Besides that the module supplies a large library of high-level mathematical functions to operate on these matrices and arrays.

NumPy is based on two earlier Python modules dealing with arrays. One of these is Numeric. Numeric is like NumPy a Python module for high-performance, numeric computing, but it is obsolete nowadays. Another predecessor of NumPy is Numarray, which is a complete rewrite of Numeric but is deprecated as well. NumPy is a merger of those two, i.e. it is build on the code of Numeric and the features of Numarray.

Before we can use NumPy we will have to import it. It has to be imported like any other module:

```
import   numpy
```

But you will hardly ever see this.   Numpy is usually renamed to

np:

```
import  numpy as  np
```

OBJECTIVE OF THE PROJECT:

The main objective of numpy module is to handle or create single- or multi- dimensional arrays ,basic arithmetic functions and other mathematical functions used in real and virtual world. As mentioned in the previous chapters, it is one of the backend engines for Pandas and other modules such as sklearn, scipy, etc., to handle array manipulation. NumPy is a python library used for working with arrays. It also has functions for working in domain of linear algebra, fourier transform, and matrices

ADVANTAGES OF NUMPY:

Numpy stands for Numerical Python and is the foundational package for mathematical computing in Python and has a huge set of built-in functions.
There are several properties of Numpy, like:

1.It supports fast and efficient multidimensional arrays or ndarrays as they are called.

2.It executes computations and mathematical calculations in an element-wise manner.

3. It performs linear algebraic operations Fourier transformations and random number generation.

4. It has tools for reading and writing binary or text data from and to discs.

5. It can efficiently store and manipulate data.

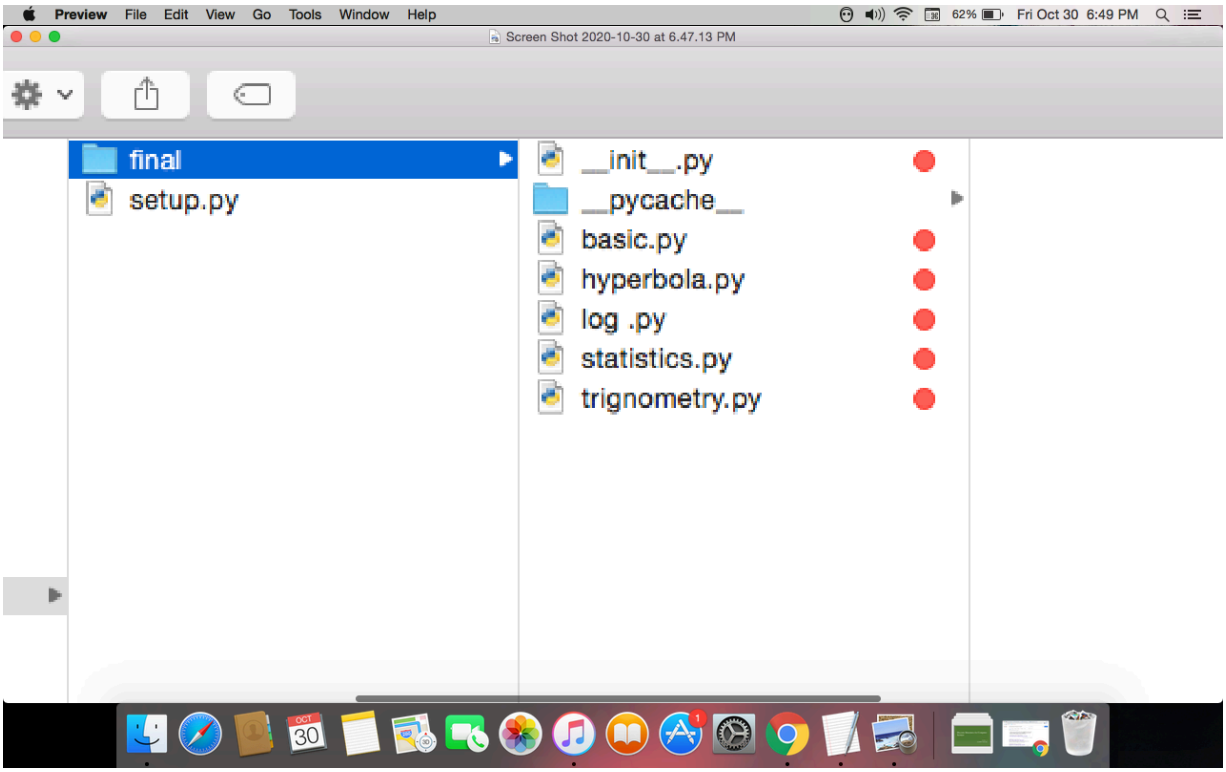
DESCRIPTION OF THE PROJECT:

This project is a python user-defined package using a inbuilt package numpy for various mathematical operations. this user-defined package is created with 6 modules in with each module specifies a different mathematical category. each module defines various functions and classes to perform those operations.this code in the project is re usable.

The name of the package is final. the modules in the package are as follows:

1.__ini__.py
2. basic.py
3. hyperbola.py
4.log.py
5. statistics.py
6. trignometry.py

Here is the structural flow of the package:


Preview File Edit View Go Tools Window Help
62% Fri Oct 30 6:49 PM
Screen Shot 2020-10-30 at 6.47.13 PM
final
setup.py
__init__.py
__pycache__
basic.py
hyperbola.py
log .py
statistics.py
trignometry.py

WORK DISTRIBUTION:

We are 3 in a team and the work has been distributed equally. As mentioned in description this project has 6 modules .The work distribution as follows:

Roll.no :21 — module 1, 2,3
Roll.no :26 —module 4 , 5
Roll.no :27 —module 6 , report

GITHUB LINK — https://github.com/antony-01