MINOR PROJECT REPORT

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PROJECT TITLE -Reports on Animal Extinction

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INTRODUCTION
&
PROBLEM STATMENT

This is the program to overview the animals which are on the erge of extinction. Basically we are plotting various kinds of graphs using python libraries such as pandas, numpy, matplotlib to demonstrate the public available data . Aim of this project is to make the work of user and managment easier by keeping records of endangered &extinct species.Through this program we can do lot of things like-

1.Any person can easily search the updates of any species or animal
2.we can know the exact figure of species or animal present in biosphere
3.we can also know the details of endangered/extinct species
4.we can see the growth/loss of species through this program

PROBLEM STATMENT

write a program to manage a reports of extinct/endangered species.Use pandas,numpy,matplotlib to demonstrate the public available data.Also include features like-

1.Help to find species that are constantly being assesed & added to the IUCN red list.

2.Providing exact information about other species that are being reassesed resulting in some moving into different red list categories.

3.Graphical representation of increase in the numbers of species assesed for the IUCN red list of threatened species .

4.Providing the proportion of extinct species as well as threatened species in past & present IUCN red list

DESCRIPTION

PANDAS-

Pandas is also a library or a data analysis tool in python which is written in python programming language. It is mostly used for data analysis and data manipulation. It is also used for data structures and time series.
We can see the application of python in many fields such as - Economics, Recommendation Systems - Spotify, Netflix and Amazon, Stock Prediction, Neuro science, Statistics, Advertising, Analytics, Natural Language Processing. Data can be analyzed in pandas in two ways -
Data frames - In this data is two dimensional and consist of multiple series. Data is always represented in rectangular table.
Series - In this data is one dimensional and consist of single list with index

NUMPY-

”NumPy is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays”. The previous similar programming of NumPy is Numeric, and this language was originally created by Jim Hugunin with contributions from several other developers. In 2005, Travis Oliphant created NumPy by incorporating features of the competing Numarray into Numeric, with extensive modifications. [12] It is an open source library and free of cost

MATPLOTLIB-

Matplotlib is a plotting library for the Python programming language and its numerical mathematics extension NumPy”[11]. Matlab provides an application that is used in graphical user interface tool kits. Another such libraby is pylab which is almost same as MATLAB.
It is a library for 2D graphics, it finds its application in web application servers, graphical user interface toolkit and shell.Below is the example of a basic plot in python

Functions and methods we are likely to use in a typical data analysis process.-

1. Dropping columns
2. Select particular columns while reading
3. Reading a part of the dataframe
4. Sample
5. Checking the missing values
6. Adding missing values using loc and iloc
7. Filling missing values
8. Dropping missing values
9. Selecting rows based on conditions
10. Describing the conditions with query
11. Describing the conditions with isin
12. The groupby function
13. Applying multiple aggregate functions with group by
14. Applying different aggregate functions to different groups
15. Reset the index
16. Reset the index with a drop
17. Set a particular column as the index
18. Inserting a new column
19. The where function
20. The rank function
21. Number of unique values in a column
22. Memory usage
23. The category data type
24. Replacing values
25. Drawing a histogram
26. Reducing the decimal points of floats
27. Changing the display options
28. Calculating the percentage change through a column
29. Filtering based on strings
30. Styling a dataframe

OOPs In our program

In Python, object-oriented Programming (OOPs) is a programming paradigm that uses objects and classes in programming. It aims to implement real-world entities like inheritance, polymorphisms, encapsulation, etc. in the programming. It is used to structure a software program into simple, reusable pieces of code blueprints (usually called classes), which are used to create individual instances of objects.
We made a parent class of Species and took arguments such as species name, its Extinction, identified species and species that are threatened
Then we made some child classes of it like Birds, Mammals, Reptiles etc and passed the appropriate data according to them. Then according to the input's preference results are displayed

Result-

Consequences of species extinctions at local or regional scales. Species extinction at local or regional scales implies in general a decline in species richness (number of species) and a decline in biodiversity. There is strong evidence that species richness in an area enhances ecosystem productivity and stability.The main cause of the loss of biodiversity can be attributed to the influence of human beings on the world's ecosystem, In fact human beings have deeply altered the environment, and have modified the territory, exploiting the species directly, for example by fishing and hunting, changing the biogeochemical cycles

Conclusion-

We have covered a great deal of the functions and methods for data analysis. There are, of course, a lot more offered by pandas but it is impossible to cover all in one article.
As we keep using pandas for our data analysis tasks, we may discover new functions and methods. As with any other subject, practice makes perfect.