ARTIFICIAL INTELLIGENCE AND APPLICATION

Project Submission 02

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AI Learning and Prediction.

Introduction –

WHAT IS ARTIFICIAL INTELLIGENCE?

Artificial intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence.

WHAT ARE THE FOUR TYPES OF ARTIFICIAL INTELLIGENCE?

- Reactive Machines
- Limited Memory
- Theory of Mind
- Self-Awareness

"Artificial intelligence is a set of algorithms and intelligence to try to mimic human intelligence. Machine learning is one of them, and deep learning is one of those machine learning techniques."

Simply put, machine learning feeds a computer data and uses statistical techniques to help it "learn" how to get progressively better at a task, without having been specifically programmed for that task, eliminating the need for millions of lines of written code. Machine learning consists of both supervised learning (using labelled data sets) and unsupervised learning (using unlabelled data sets).

Python and Machine Learning.

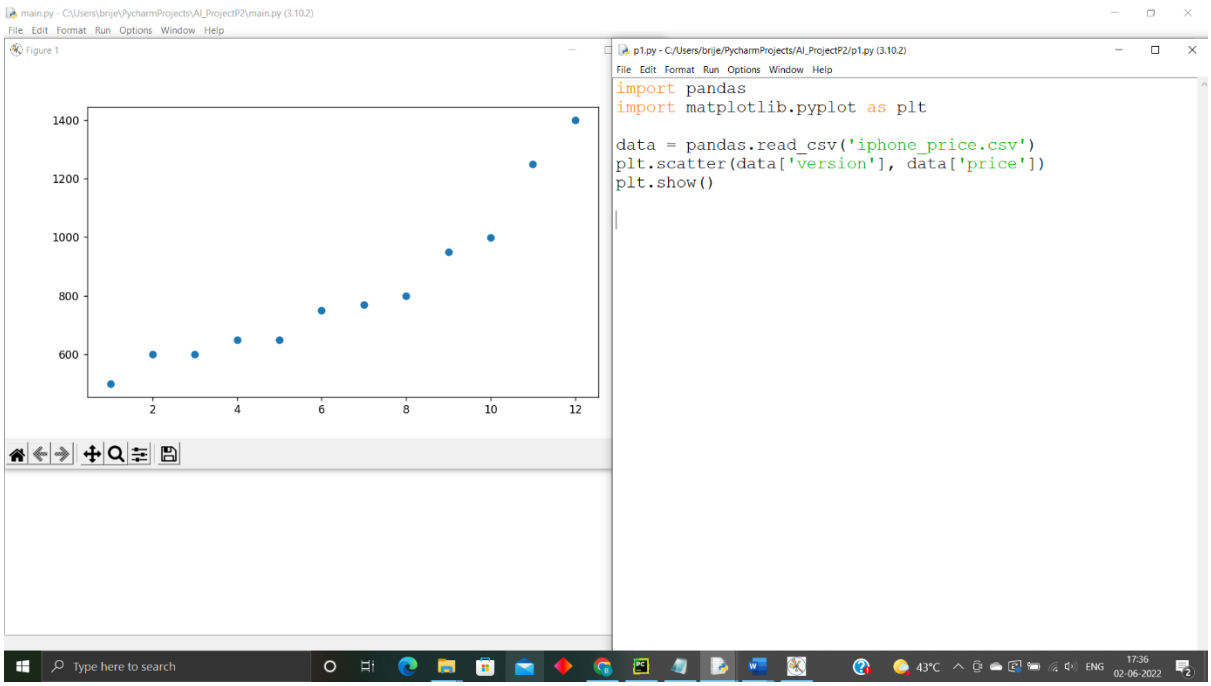
Data Science.

Data science is the field of study that combines domain expertise, programming skills, and knowledge of mathematics and statistics to extract meaningful insights from data. Data science practitioners apply machine learning algorithms to numbers, text, images, video, audio, and more to produce artificial intelligence (AI) systems to perform tasks that ordinarily require human intelligence. In turn, these systems generate insights which analysts and business users can translate into tangible business value.

Python libraries

1. **Pandas** is an open-source, BSD-licensed Python library providing high-performance, easy-to-use data structures and data analysis tools for the Python programming language. Python with Pandas is used in a wide range of fields including academic and commercial domains including finance, economics, Statistics, analytics, etc. In this tutorial, we will learn the various features of Python Pandas and how to use them in practice.

2. Matplotlib is a library in Python and it is numerical – mathematical extension for NumPy library. Pyplot is a state-based interface to a Matplotlib module which provides a MATLAB-like interface. There are various plots which can be used in Pyplot are Line Plot, Contour, Histogram, Scatter, 3D Plot, etc



3. **Scikit-learn** (formerly **scikits.learn** and also known as **sklearn**) is a free software machine learning library for the Python programming language.[3] It features various classification, regression and clustering algorithms including support-vector machines, random forests, gradient boosting, *k*-means and DBSCAN, and is designed to interoperate with the Python numerical and scientific libraries NumPy and SciPy. Scikit-learn is a NumFOCUS fiscally sponsored project.

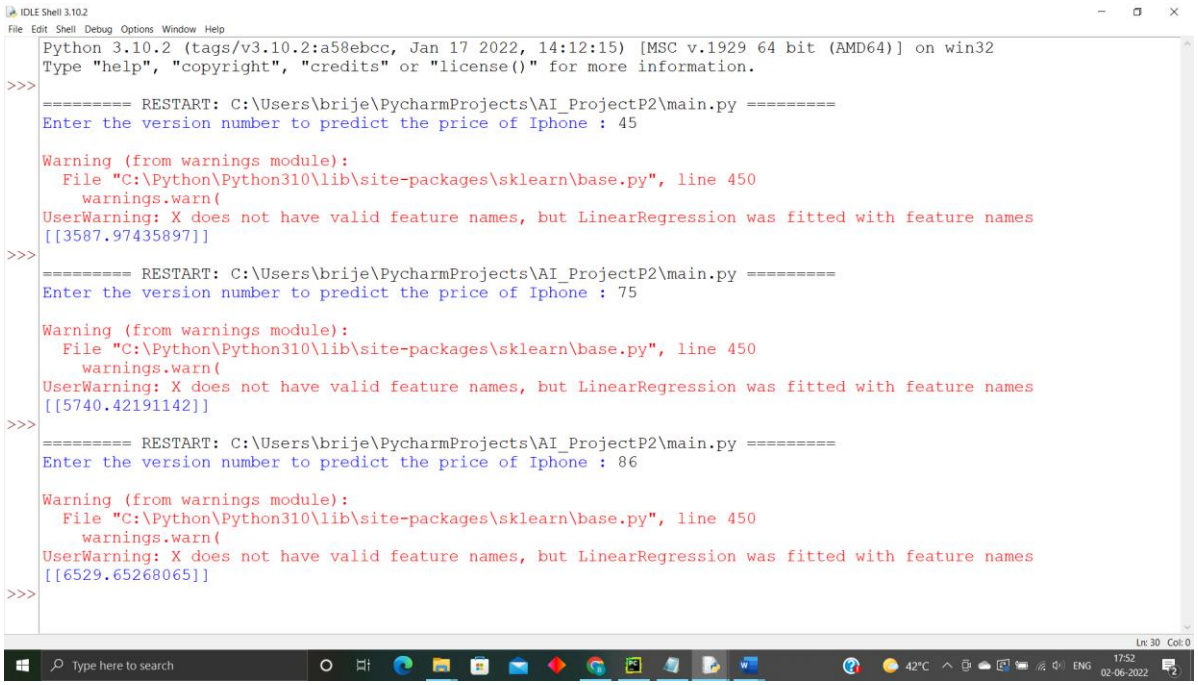
ALGORITHM

1. Import libraries like pandas, matplotlib, sicekit-laern
2. Paste the csv file that will help machine to learn from its data and make prediction.
3. Call direct functions from python libraries to predict and display result.

Code –

```
import pandas
import matplotlib.pyplot as plt

from sklearn.linear_model import LinearRegression

data = pandas.read_csv('iphone_price.csv')
plt.scatter(data['version'], data['price'])



model = LinearRegression()
model.fit(data[['version']], data[['price']])

n = int(input("Enter the version number to predict the price of Iphone : "))

print(model.predict([[n]]))
```

Test Procedures and Result –



Conclusion –

AI Platform Prediction organizes your trained models using resources called *models* and *versions*. A model is a machine learning solution. For example, you might create a model called census to contain all of your work on a U.S. census machine learning model. The entity you create, named census, is a container for actual implementations of the machine-learning model, which are called versions.

Developing a machine-learning model is an iterative process. For that reason, the AI Platform Prediction resource paradigm is set up with the assumption that you'll be making multiple versions of each machine learning model. This terminology can be confusing because a AI Platform Prediction model resource is not actually a machine-learning model on its own. In AI Platform Prediction a model is a container for the versions of the machine learning model

Remark-