**Identify the software project, create business case, arrive at a problem statement**.

REQUIREMENT: Window XP, Internet, MS Office, etc.

**Problem Description: -**

**1.** Introduction of **AI and Machine Learning: -**

**Artificial Intelligence applies machine learning, deep learning and other techniques to solve actual problems.** Artificial intelligence (AI) brings the genuine **human-to-machine interaction.**

Simply, **Machine Learning is the algorithm that give computers the ability to learn from data and then make decisions and predictions,** AI refers to idea where machines can execute tasks smartly**.** It is a faster process in learning the risk factors, and profitable opportunities. They have a feature of learning from their mistakes and experiences.

When **Machine learning is combined with Artificial Intelligence, it can be a large field to gather an immense amount of information** and then rectify the errors and learn from further experiences, developing in a smarter, faster and accuracy handling technique. The **main difference** between Machine Learning and Artificial Intelligence is **, If it is written in python then it is probably machine learning, If it is written in power point then it is artificial intelligence.**

**As there are many existing projects that are implemented using AI and Machine Learning , And one of the project i.e., Bitcoin Price Prediction** :- **Bitcoin (₿ ) (founder - Satoshi Nakamoto , Ledger start: 3 January 2009 ) is a digital currency, a type of electronic money**. It is decentralized advanced cash without a national bank or single chairman that can be sent from client to client on the shared Bitcoin arrange without middle people's requirement.

**Machine learning models can likely give us the insight we need to learn about the future of Cryptocurrency.** It will not tell us the future but it might tell us the general trend and direction to expect the prices to move**. These machine learning models predict the future of Bitcoin by coding them out in Python.**

Machine learning and AI-assisted trading have attracted growing interest for the past few years. this approach is to test the hypothesis that the inefficiency of the cryptocurrency market can be exploited to generate abnormal profits. the application of machine learning algorithms to the cryptocurrency market has been limited so far to the analysis of Bitcoin prices, using random forests , Bayesian neural network , long short-term memory neural network , and other algorithms.

**2**. Applications/Scope of **AI and Machine Learning :-**

**a) Sentiment Analysis :-** It is the classification of subjective opinions or emotions (positive, negative, and neutral) within text data using natural language processing.

**b)** It is Characterized as a use of computerized reasoning where accessible data is utilized through calculations to process or help the handling of factual information**.**

**BITCOIN PRICE PREDICTION USING AI AND MACHINE LEARNING: -**

**The main aim of this is to find the actual Bitcoin price in US dollars can be predicted**. The chance to make a model equipped for anticipating digital currencies fundamentally Bitcoin.

**#** It works the prediction by taking the coinMarkup cap.

**# CoinMarketCap provides with historical data for Bitcoin price changes**,

keep a record of all the transactions by recording the amount of coins in circulation and the volume of coins traded in the last 24-hours.

**# Quandl is used to filter the dataset by using the MAT Lab properties.**

**3. Problem statement: -**

**Some AI and Machine Learning problem statements are: -**

**a) Data Privacy and Security:** Once a company has dug up the data, privacy and security is eye-catching aspect that needs to be taken care of.

**b) Data Scarcity:** The data is a very important aspect of AI, and labeled data is used to train machines to learn and make predictions.

**c) Data acquisition:** In the process of machine learning, a large amount of data is used in the process of training and learning.

**d) High error susceptibility:** In the process of artificial intelligence and machine learning, the high amount of data is used.

**Some problem statements of Bitcoin Price Prediction using AI and Machine Learning: -** **a) Experimental Phase Risk:** It is less experimental than other counterparts. In addition, relative to traditional assets, its level can be assessed as high because this asset is not intended for conservative investors.

**b) Technology Risks:** There is a technological risk to other cryptocurrencies in the form of the potential appearance of a more advanced cryptocurrency. Investors may simply not notice the moment when their virtual assets lose their real value.

**c) Price Variability:** The variability of the value of cryptocurrency are the large volumes of exchange trading, the integration of Bitcoin with various companies, legislative initiatives of regulatory bodies and many other, sometimes disregarded phenomena.

**d) Consumer Protection:** The property of the irreversibility of transactions in itself has little effect on the risks of investing in Bitcoin as an asset.

**e) Price Fluctuation Prediction:** Since many investors care more about whether the sudden rise or fall is worth following. Bitcoin price often fluctuates by more than 10% (or even more than 30%) at some times.

**f) Lacks Government Regulation**: Regulators in traditional financial markets are basically missing in the field of cryptocurrencies. For instance, fake news frequently affects the decisions of individual investors.

**g) It is difficult to use large interval data (e.g., day-level, and month-level data) .**

**h) The change time of mining difficulties is much longer. Moreover, do not consider the news information since it is hard to determine the authenticity of a news or predict the occurrence of emergencies.**