DYP DPU

Assignment No: 01

Tirle: write a program non-recursive and recursive program to calculate Fibonacci number and analyze & Time of space complexity.

Objective: student should be able to perform non-recursive and recursive program to calculate Fibonacii number and analyze time & space complexity.

Theory:

The Fibonacci series is obtained by taking the sum of previous two number inseries given the first and second term are 0 & 1;

$$F_n = F_{n-1} + F_{n-2}$$

with seed value $F_0 = 0$ & $F_1 = 1$

Method (1) Iterative Algo

Start F(n)

↓

read (n)

F(0) = 0

F(1) = 1

i = 2

1) $i <= n-1 \longrightarrow A[i] = A[i-1] + A[i-2]$

i = i+1

return A[i]

Stop

Method 2 : Recursive Algorithm :

In recursive the function call itself until base condition is met to evaluate F(n) for we can reduce our problem into two small problem.

Algorithm :

```
Func tion fibonacci(n)
    if (n <= 1)
    return n;
    else:
        return fibonacci (n-1) + fibonacci (n-2)
```

Time & space complexity space comp

→ 2^n → O(n)

	Method	Time complexity	Space complexity
i)	Using Recurssion	$T_n = T(n-1) + T(n-2)$	O(n)
ii)	Using DP	O(n)	O(1)
iii	space optimization of DP	O(n)	O(1)
iv)	optimized matrix method	O(logn)	O(logn)
v)	Direct formula	O(log(n))	O(1)

Application :

i) It is used in grouping of member and used to study different other special mathematical sequence.

ii It find application in coding.

Conclusion :

In this way explored fibonacci series explored using recurssive & non-recurssive method and also learn time-space complexity.

DYP DPU

Assignment No: 02

Title: write a program to implement Huffman encoding using greedy stratergy.

objectives:

student should be able to understand and solve Huffman encoding and analyze time & space complexity.

Theory:

=) A greedy algorithm is an approach for solving aproblem by selecting the best option available at the moment.

=) The algorithm never reverse the earlier decision even if choice is wrong.

=) It work in top-down approach

Advantages:

=) The algo is easier to describe.

=) This algorithm can perform better than other algorithm.

Disadvantages:

The greedy does not always produce the optimal solution this is major advantages of algorithm

* Greedy Algorithm:

i) It begin with, the solution set is empty.
ii) At each step on item is added to the solution set until solution is reached.
iii) If the solution set is feasible the current item kept.
iv) Else item is rejected.

* Huffman Encoding:

Huffman coding is a lossless data compressing algorithm. The idea is to assign variable length code to input character, length of the assigned code are based on the ~~Experience~~ of corresponding characters.

There are mainly two major part in huffman coding.

i) Build a Huffman Tree from input char
ii) Traverse the Huffman Tree assign code to character.

Hoffman Tree Construction - steps:

1) Create a leaf node for each character and itself into Min-Heap based on frequency

2) Extract two node with smallest Freq from heap.

3) Create a new internal node with Freq
= sum of extracted node
left child = First extracted node
Right child = second extracted node.

4) Ingert the new node back into heap

5) Repeat step 2-4 until only one node remain - root node of Huffman tree.

Algorithm for Huffman code:

Input : No of message with Freq count.
Output : Huffman Merge Tree.

1) Begin
2) Let Q be priority queue
3) Q = { initiallize priority Queue with Freq of all symbols
4) Repeat n-1 times
5) Create new node z
6) x = extract min (Q)
7) y = extract - min (Q)
8) Freq (z) = Freq (x) + Freq (y)
9) Insert (z, x)
10) End Repeat
11) Return (extract - min (Q))
12 End

Time complexity ⟶ O(log (n))

Conclusion :

In this way Huffman Encoding is explored using greedy method.

DYP DPU

Assignment No: 03

Title : write a program to solve fractional knapstack problem using a greedy method.

Objective :

To analyze time and space complexity of fractional knapstack problem using a greedy method

Theory :

Knapsack problem :

you are given following :

- A knapsack with limited weight capacity
- Few item each having same weight and value.

The problem states :

- which item should be placed in the knapsack such that.
- value / past obtained by putting item into knapsack / maximum
- weight limit knapsack does not exceed.

Knapsack problem variant :

1) Fractional knapsack problem
2) 0/1 knapsack problem

Fractional knapsack problems.

In Fractional knapsack problems.

- As a name suggest item are divisible
- we can even put the fraction of any item in knaspack.

It is solved using Greedy method

Example :

Find optimal soln for fractional problem making use of knaspack approach.

$n = 5$

$w = 60kg$

$(w_1, w_2, w_3, w_4, w_5) = (5, 10, 15, 22, 25)$

$(b_1, b_2, b_3, b_4, b_5) = (30, 40, 45, 77, 90)$

Step 1 :

	Value	weight	Ratio
1	5	30	6
2	10	40	4
3	15	45	3
4	22	77	3.3
5	25	90	3.6

Step 2 : Sort in decreasing order

1	2	5	4	3
6	4	3.6	3.5	3

Step 3 :

knapsack weight.	(item in knapsack)	Cost
60	0	0
55	1	30
45	1.2	70
20	1.25	160

Now,

Knaspack weight left to filled 1) 20kg but item 4 has weight of 22 kg.

Since in fractional knapsack problem

$\langle 1, 2, 3, \langle 20122), 47$

total cost = 160 + 20/22] × 77

= 230 units

Greedy Knaspack (w, v, w)

for i = 1 to n

do x[i) = 0

weight = 0

while weight < w

do i = best remaining item

if weight + w[i] ≤ w:

then

x[i] = 1

weight = weight + w[i]

else :

x[i] = [w-weight] / w[i]

weight = w

return x

Time complexity :

→ O(nlog(n))

Conclusion:

Thus we have studied concept of fractional knapsack using greedy method

DYP DPU

Assignment No: 4

Title: write a program to solve 0-1 knapsack problem using dynamic programming strategy.

Objectives:

To analyze time and space complexity 0-1 knapsack problem using dynamic programming.

Theory:

What is Dynamic programming:

Dynamic programming is also used in optimization problem like divide-conquer method Dynamic programming solve problem by combining the solution of subproblem.

Two main properties eight problem suggest that given problem can be solved using Dynamic programming.

These properties are overlapping sub-problem and optimal structure:

For Ex:

Binary Search does not have overlapping sub-problem.

* Steps of Dynamic programming Approach:

Dynamic programming is designed using the following Four step:

- characterize the structure of optimal solution
- recurssively define the value of optimal solution
- compute the value of solution, typically in bottom-up fusion.

* Construct on optimal solution from corrupted information

* Application of Dynamic programming Approach
  - → Matrix chain Multiplication
  - → Largest common subsequence
  - → Travelling salesman problem.

0/I knapsack process :-

In all knapsack problem :-

- As the name suggest item are indivisible
- we can not take function of any item
- we have either an item completely or leave it.
- it salve using DP.

0/I knapsack problem using greedy method considers :

- knapsack weight capacity = W
- No. of item each having some weight = n

Step1 ;

Draw table T with (n+1) no of row & (w+1) column ;

0	0	1	2	3	-	-	-	n
1	0	0	0	0				0
2	0							
3	0							
1	0							
1	1							
n	0							

Step 2:

Start Filling table row top to bottom from left to right.

Formula:

$$T(i,j) = \max\{ T(i-j, j), value_i + T(i-1, j-w) \}$$

Step 3:

- To identify the item that must be put into knapsack to obtain maximum profit.
- Consider last column
- Start scanning entries from bottom to top.
- After encountering an entry whose value is not same as value stored in entry immediately above it mark row label of entry.
- After an enteries are scanned the mask label represented the item must put into knapsack.

Time complexity:

$\Rightarrow O(nw)$

Conclusion:

In this way we have explored concept of 0/1 knapsack Dynamic programming.

DYP DPU

Assignment No: 05

Tittle: Write a program for analysis of quick sort by using deterministics & randomized variant.

Objective: To analyze time & space complexity of quick sort by using deterministics & randomized variant.

Theory:

Randomized algorithm:

- An algorithm that uses random no. to decide what to do next anywhere its logic is called Randomized algorithm
- Example: Quicksort we use random no. to pick next pivot.
- Typically this randomness is used to reduced time ~~and space~~ complexity.
- Output or the running times are functions of the I/p & random I/f chosen.

Types of Randomized algorithm:

1) Las Vegas Algorithm:

- These algorithm always produce correct or optimum result
- Time complexity of these algorithm is varied on a random value & time complexity, evaluated as expected value.
- A Las values algorithm fails with same probability, but we can tell when it fails.

2) Monte Carlo Algorithm :
- produce correct or optimum result with some probability.
- These algorithm have deterministics running time & is generally easier to find out worst case time complexity
- A monte carlo algorithm fails with same probability.

Randomized quick sort algo:
→ Application of Randomized Algo.
→ Randomized algo have huge applications in cryptography
→ Load Balancing :

Number - Theoretic Applications, primary testing

Data structure : Hashing, sorting, searching, codes, statistics & computational Geometry

Number of comparisions :

Since, each pair of element is compared at most once by quick sort, the no of comparisions is given by

$$X = \sum_{i=1}^{n-1} \sum_{j=1}^{n} x_{ij}$$

Expected Number of Comparisons :

$$E[X] = \sum_{i=1}^{n-1} \sum_{j=1}^{n} \frac{2}{j-i+1}$$

$$= \sum_{i=1}^{n-1} \sum_{k=1}^{n-i} \frac{2}{k+1} < \sum_{i=1}^{n-1} \sum_{k=1}^{n} \frac{2}{k}$$

$$= \sum_{i=1}^{n=1} O(\log(n))$$

$$= O(n \log(n))$$

It follows that the expected running time of randomized Quicksort is $(O(n \log n))$. It is unlikely that this algorithm this algorithm will choose terrible unbalanced position each time, so the performance is very good almost all the time.

Conclusion :

In this way we have explained concept of quick sort by using deterministic & randomized variable.

DYP DPU

Assignment No: 01

Title: Predict the price of the Uber ride from a given pickup point to the greed drop off location, perform following tasks.

i) pre-process the dataset
ii) Implement Linear regression & random forest regression models.
iii) Evaluate the models to compose their respective scores like R2, OMSE, etc.

Dataset Description:

The project is about an worlds largest taxi company Uber inc. In this projects, where looking to predict the fare for their future transactional cases.

Objectives:

Students should be able to preprocess datasets & identify outliers to check correlation & implement Linear regression & random latest regression model.

prerequisite:

i) Basic knowledge of python
ii) concept of preprocessing data.
iii) Basic knowledge of OS & Big data analystics.

Theory:

Data processing:

It is a process of preposing the raw data & making it suitable for machine learning model.

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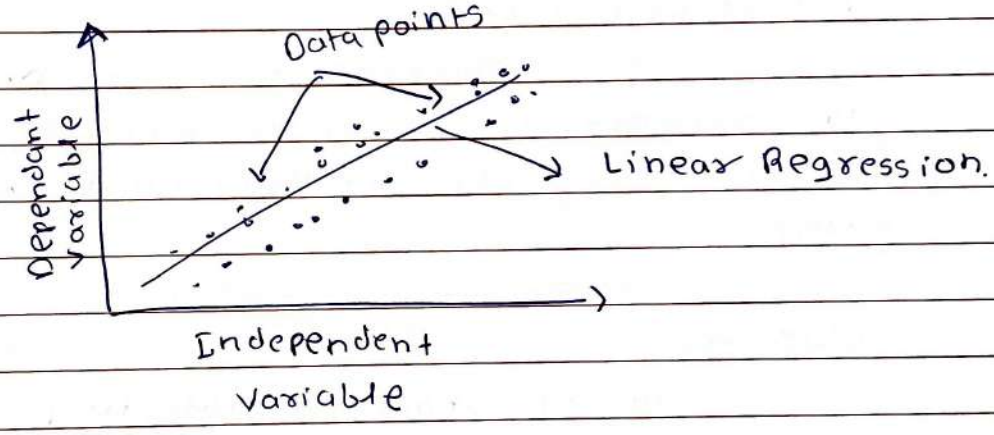
Why do we need data processing ?

A real-word data generally contains noises missing values Data preprocessing is required for cleaning datasets.

Linear Regressions :

It is one of the easiest & most popular ML -algorithm, It is statistical method that is used for predictive analysis.



Random Forest Regressions Models :

Random Forest is a popular machine learning algorithm that belongs to supervised learning

The greater no. of trees in the forest leads to the higher accuracy & prevents the problem of over fitting

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Outlier :

- The major thing around the outliers in what your do with them.
- If you are going to analyze any task to analyze data sets.
- The data mining process involves the analysis to predictions of data.

Types of Outliers :

1) Global outliers :

- Global Outliers are also called point outliers.
- Global outliers are taken as the simplest form of outliers.

2) Collective Outliers :

In a given set of data, when a group of data points deviates from the rest of the data set is called collective outliers.

- For example, in an Instruction Detection System

3) Contextual Outliers :

- As the name suggests, contextual means this outliers introduced within a context.

- For example : In the speech recognition technique.

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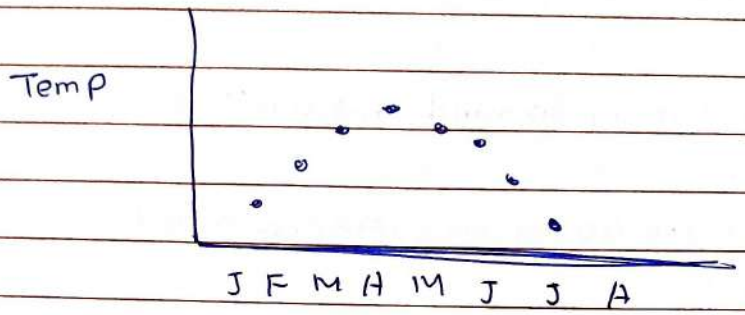

Haversine:

The Haversine formula calculate the shortest distance between two points on a sphere using their latitudes & longitudes measured along the surface.

Matplotlib:

- Matplotlib is an amazing visualization library in python for 2D-plots of array
- In was introduced by John Hunter in year 2002

Mean squared Error:

The mean squared error of an estimates measures the average of error squares i.e the avg squared diff between the estimated values & the value.

Conclusion:

In this way we have explored concepts correlation & implement linear regression and random forest regression model.

DYP DPU

Assignment NO: 02

Title : classify the email using the binary - classification method. Email Ispam detection has two states.

a) Normal State - not spam

b) Abnormal State - spam

Use K-Nearest Neighbour & Support Vector machine for classification.

Dataset Description :

The csv file containg 5172 rows each row for each email. These are 3003 columns.

Objective :

Student should be able to classify email using the binary classification & implement email spam detection technique by using K-nearest Neighbour & support vector machine algo

prerequisite :

1) Basic knowledge of Python

2) concept of K-nearest neighbours & support vector machine for classification.

Theory :

Data preprocessing is a process of preparing the raw data & making it suitable for machine learning model.

Why do we need Data preprocessing

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A real world data generally contain noises, missing values & maybe in an unusable form at which can not be directly used for ML models,

It involves below steps.

- Getting Dataset
- Importing Libraries
- Importing datasets
- Finding missing Data
- Feature Scaling

Conclusion :

In this way have explored concept neural network based classifier.

DYP DPU

Assignment No: 03

Title: Given a bank customers, build a neural network based classifies that can determine whether they will leave or not in the next 6 months.

Datasets Descriptions:

The case study from an open source dataset from Kaggle.

perform the following steps:

i) Read the dataset
ii) Distinguish features & target set & divide the data set into training & test set.
iii) Initialize & build model
iv) print accuracy score.

Objective:

Students should be able to distinguish the feature & target set & divide the dataset.

prerequisite:

1) Basic knowledge of python
2) concept of confusion Matrix

Theory:

Artificial Neural Network:

The term ANN is derived from biological neural networks that develop the structure of human brain.

Need for confusion matrix in ML:

- It evaluates the performance of the classification models
- It not only tells the error made by classifier but also the type of error

Calculating using confusion Matrix:

i) Classification Accuracy:

It is one on important parameter to determine the accuracy of classification problem

$$\text{Accuracy} = \frac{TP + TN}{TP + FP + FN + TN}$$

ii) Mis classification rate:

It is also termed as error state

$$\text{Error Rate} = \frac{FP + FN}{TP + FP + FN + TN}$$

iii) precision:

It can be denoted as no. of correct output provided by model

$$\text{precision} = \frac{TP}{TP + FP}$$

iv) Recall:

It is denoted as out of total tve observation

$$\text{Recall} = \frac{TP}{TP + FN}$$

F-measure :

If two models have low precision & high recall of vice versa.

$$\text{F-measure} = \frac{2 \text{ Recall} \times \text{precision}}{\text{Recall} + \text{precision}}$$

Conclusion :

In this way we build a neural network caused classifrer that can be determined whether the will leave or not in the next 6 months.

DYP DPU

Assignment No: 04

Title: Implement K-Nearest Neighbors Algorithm on diabetes .csv datasets compute confusion matrix, accuracy, error-rate, precision & recall on the given dataset.

Datasets: we will try to build a ML model to accurately predicts whether or not the patients in the datasets have diabetes or not?

Objective:

Students should be able to preprocess datasets & identify outliers to check correlations & implement KNN algo & random forest classification models.

prerequiste:

i) Basic knowledge of python
ii) Concept of confusion Matrix
iii) Concept of Eel. are curv

KNN is supervised ML Model

Supervised learning is when model learns from datasets it already labeled.

KNN Model work by taking a data points & looking at the check labeled datapoints for KNN model, the first step is to read in the data we will use or ilp

we can see that we have 768 rows of data & 9 columns

Build and training the model :

First we will create a new KNN classifier & set N neighbor to 3.

to recap this means that if at least 2 of ~~recap~~ this 3 nearest points to the new data points are patients with datasets.

we need to train the model in In codes to train our new model we will use the 'Fit function'

Testing the model :

Once the model is trained, we can use the predict functions ~~our~~ model make prediction on our test data.

we can see the model predicted the diabetes for the first 4 patients in test set.

K- Fold cross validation :

Cross validation is when the dataset randomly split up into 'K' groups

One of the groups is used as the testset & rest are used as the training set

Cross validation is when the dataset is randomly split up into 'k' groups

Conclusion :

In this way we build a neural network-based classifier that can determine whether they leave or not in next 6 months.

DYP DPU

Assignment No : 05

Title : Implement K-Means clustering thier as chical clustering on scales data sample.csv datasets Determine the no. of clusters using the elbow method.

Dataset Description :

The data includes the following features

i) Customer - ID
ii) Customer Grender
iii) Customer Age
iv) Annual Income of the customer
v) spending s case of the customer

Objective :

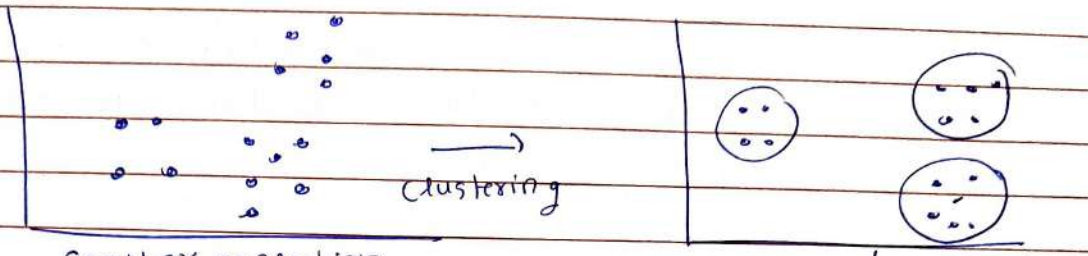
students should albe to understand now to use unsupervised learning to segment different cluster or groups & used to them to train your model to predict future things.

prerequisite :

i) Knowledge of python
ii) Unsupervised learning
iii) clustering
iv) Elbow method.

Theory :

Clustering algo try to wind natural cluster in data the various aspects of how the algo to cluster data can be turned & modified.



Use of clustering :

In the freed of marketing clustering can used to identify various customers groups with existing customer's data.

clustering can be used to understand & divide various properly location based on value importance

K- Means clustering :

K-Means clustering is an unsupervised algo that divides the given data into given no. of clusters.

The algorithm takes raw unlabelled data as an i/p & divides the datasets into clusters.

K-Means is very easy & simple to implement It is highly & capable can be applied to both small & large datasets.

Also with the increase in dimensions, stability decreases but overall K Means is a simple & robust algo.

Conclusion:

In this way we implemented K-Nearest Neighbour algorithm.

DYP DPU

Assignment No : 01

Title : Installation of MetalMask & study spending either per transaction

Objectives : students should be able to learn new technology such as meta mask . Its application & implementation.

prerequisite :

i) Basic knowledge of cryptocurrency
ii) Basic knowledge of clustured computing concept
iii) working of blockchain

Introduction to Blockchain :

Blockchain can be described as a data structure that holds transactional records & writes ensuring security transparency & decentralization

=) A blockchain is a distributed ledges that is completely open to any & every one onto network once an information is stored on a blockchain it is extremely difficult to change or altey it.

=) Each transaction on blockchain is secured within a digital signature that proves its authenticity.

=) Blockchain technology allows all the network participants to reach an agreement, commonly known as consensus.

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Blockchain in Features:

1) Decentralized:

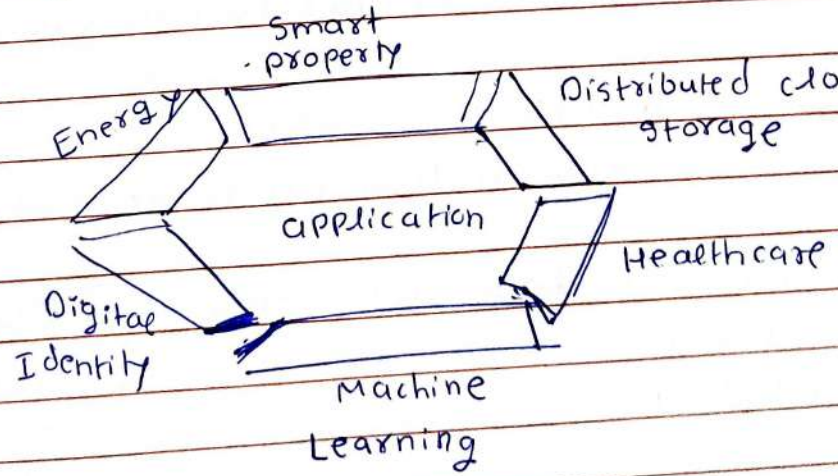
Blockchain are Decentralized in nature meaning that no single person or group holds the authorization of the overall network. while everybody in the network has the copy of the distributed ledges with them one can modify it as his or her own.

2) Immutable:

The immutability properly of a blockchain refer to the fact that any data once written on the blockchain cannot be changed. To understand immutability consider sending email as an example.

3) Tamper-proof:

with the properly of immutability embedded in blockchain, it becomes easier to detect ~~entering~~ tampering of any data. These are two key ways of detecting improving namely hashes & blocks.



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Benefits of Blockchain technology :
i) Time saving
ii) Cost-saving
iii) Tighter security

How to use Metamask : A step by step guide metamask is one of the most popular browsers extensions that serves as a way of storing yours ethereum & other ERC-20 Tokens.

Step 1 : Install Metamask on yours browser :
- To create a new wallet you have to install the extension first.

Step 2 : Create an account :
- click on the extension icon in the upper right corner to open metamask

Step 3 : Depositing Funds :

Advantages of Metamask have :
: popular : It is commonly used by user, only need one plugin to access a wide range of apps

- Simpler : Insteads of managing private keys uses just need to remember a list of words & transactions are signed on their behalf

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Conclusion:

In this way we have explored concept blockchain & metamask wallet for transaction of digital currency.

DYP DPU

Assignment No: 2

Title: Create your own wallet using metamask for crypto transactions.

Objectives: Students should be able to learn about crypto currencies & learn how transaction takes place by using different digital currency.

Prerequisite:
i) Basic knowledge of cryptocurrency
ii) Basic knowledge of distributed computing concept.
iii) working of Blockchain

Theory:
i) Crypto Currency
ii) Transaction wallet
iii) Ether Transactions.

=) Introduction to Cryptocurrency:

- Cryptocurrency is a digital payment system that doesn't rely on banks to verify transactions, it peer-to-peer system that can enable everyone anywhere to send & receive payment.
- Instead of being physical money carried around and exchanged in the real world.
- Cryptocurrency received its name because it uses encryption to verify transactions. This means advance coding is involved in storing & transfering cryptocurrency data between wallets & to public leaders

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The first cryptocurrency was Bitcoin which was founded in 2009 & remains best known today. Interest in cryptocurrency is to trade for profit, with speculators times driving prices sky word.

How does Crypto currency work:

Cryptocurrencies run on a distributed public ledges called blockchain, a record of all transactional updates held by currency holders.

=) Units of cryptocurrencies are created through a process called mining, which involves using computer power to solve complicated mathematical problems that generate coins.

=) If you own cryptocurrency, you don't own anything tangible what own is a key that allows you to move a record or a unit of measures from one person to another without a trusted third party.

=) Although bitcoin has been around since 2009, crypto-currencies & applications of blockchain technology can still emerging in financial term & more uses are expected in future.

Crypto currencies Example:

Bitcoin: Founded in 2009, bitcoin was the first cryptocurrency & is still the most community traded The currency was developed by Satoshi Nakamoto

ethereum Developed in 2015, ethereum is a blockchain platform with its own cryptocurrency called ether or ethereum.

Lite coin:

The currency is most similar to bitcoin but has moved more quickly to developed new innovations including faster payment & process to allow more transactions.

Ripple:

Ripple is a distributed ledges system that was found in 2012

Ripple can be used to track different kinds of transactions.

Hot wallet storage: hot wallet refers to crypto storage that uses online software to protect private keys to yours assets.

Cold wallet storage: Unlike hot wallet, cold wallet rely on offline electronic devices to recursively state your private keys.

Conclusion:

In this way we have explored concept Cryptocurrency & learn how transactions are done using digital currency.

DYP DPU

Assignment No : 03

Title : Write a smart contract on a test network for bank account of a outcomes for following operations.

i) Deposit Money
ii) Withdraw Money
iii) Show balance

Objective : Student should be able to learn new technology such as metamask. Its application & implementations.

Prerequisite :

i) Basic knowledge of Crypto Currency.
ii) Basic knowledge of distributed computing concepts
iii) Working of blockchain.

Theory :

The Contract will allow deposits from any account & can be trusted to allow withdrawls only by accounts that have sufficient funds to cover the requested withdrawal
This part consumes that you are comfortable with either - handling concepts
The past demonstrated how to restrict either withdrawals to an "Owners account
It did this by persistently storing the owner accounts address & then comparing it to the msg

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```
Contract TipJar {
  address owner;
  function TipJar() Public {
    owner = msg.sender; }
  function withdrawn () {
    require (owner == msg.sender);
    msg.sender.transfer (address(this).balance);
  }
function deposit (unit 256 amount) public payable
  require (msg.value == amount) ; }
function getBalance () public view returns (unit256)
  {
    return address (this) Balance }
```

I am going to generalize their contract to keep track of either deposit based on the account address of the deposites & then only all that same account to make withdrawable of that either.

Code to accept deposit & track account balance

```
program solidity ^0.4.19;
  Contract Bank {

mapping (address => unit (256) public balance
```

```
Function deposit (unit 256 amount ) Public payable{
    require (msg.value == amount);
        balance of [msg. sender) += amount; }
}
```

mapping (address => unit 256) public balance of
declare a persistent public variable,
balance of that is mapping from account
address to 256- unit unsigned integers
=> mapping can be indexed just like arrays
with in most modern programming Language

Function bank contract is pretty small, It will simply add a withdrawal function bank sol

```
program solidity ^ 0.4.18
    Contract Bank {
        mapping (address -> unit 256) public balance of
    function deposit (unit 256 amount+2 {
        require (amount <= balance of (msg. sender));
    balance [msg. sender] == amount;
        msg. sender transfer (amount) ;
    }
}
```

The code about demonstrate the following
-> The require () checks to make sure the Sender has sufficient funds to cover the requested withdrawal

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The balance of mapping must be updated to reflect the lowered residual amount of the withdrawal.

The funds must be sends to the sender requesting the withdrawal.

The reason is specific to smart contracts & the fact to transfer to a smart contract executes the codes in the smart contract.

DYP DPU

Assignment No: 04

Title: Write a servey report on types of Blockchain & its realtime use cases

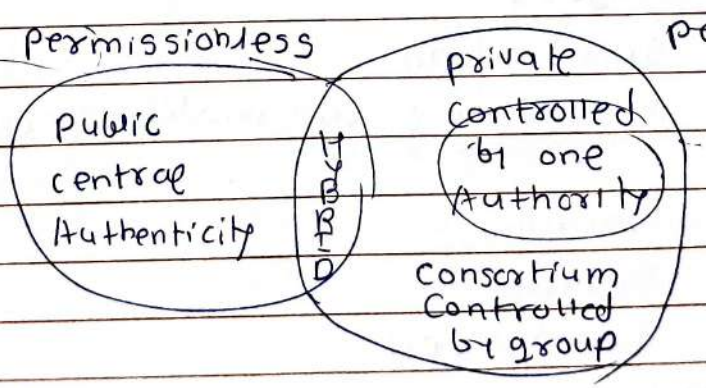
objectives: students should be able to learn new technology such as metamask. Its application & implementations.

prerequisite:

i) Basic knowledge of cryptocurrency
ii) Basic knowledge of distributed corrupting concept
iii) Working of blockchain

Theory:

There are 4types of blockchain
public Blockchain
private Blockchain
Hybrid Blockchain
Consortium Blockchain



i) Public chain:

These blockchain are completely open to following the idea of decentralization

The don't have any restrictions, anyone having a computer & internet can participate in the network

Trustable : These are algorithm to detect no fraud

Secure : This blockchain is large in size as ID is open to the public

Decentralized : These is no single platform that maintains the network.

Disadvantages :

1) processing
2) Acceptance
3) Use Cases.

2) private cloud :

The blockchain are not as decentralized as public blockchain only selected hc ore can participate in process.

Advantages :

1) speed ÷ high
2) Scalability :- Can modify Scalibility

Disadvantages :

Security
centralized

3) Hybrid Blockchain : It is the mixed contat of the private & public blockchain where some part is controlled by same

Organizations & other makers are made visible as public blockchain

Advantages

i) Ecosystem

ii) Architecture is highly customizable

Disadvantages :

i) efficiency

ii) Transparency

4. Consortium Blockchain :

It is a native approach that solves the need of organizations.

This blockchain validates the transaction and also initiates as recursive transactions,

Also known as Federated Blockchain, This is an innovative method to solve the organizations needs.

Advantages :

=> speed

=> Authority

Disadvantages

Approval

Vulnerability.

Conclusion :

In this way we have explored type of blockchain & its application in real time.

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Assignment No: 05

Title: Write a program to create a business Network using Hyperledges

Prerequisite:

i) Basic knowledge of Cryptocurrency
ii) Basic knowledge of distributed computing concept.
iii) Working of blockchain.

Theory:

Hyperledges composes as an extensive, open development toolset & framework to make developing blockchain application easier.

The primary goal is to accelerate time to value & make it easier to integrate your blockchain application with the existing business system

you can compare to rapidly develop use cases & deploy a blockchain with the existing business system.

you can compare to rapidly develop use cases & deploy a blockchain solution in days.

Hyperledges compare support the existing Hyperledges Fablic blockchain infrastructure & runtime.

Key concepts of Hyper ledges Composes

1) Blockchain state storage
2) Connection profiles
3) Assets
4) practical pants.
5) Identifies & ID cards.

lets create first Hyper ledges composes applications

step 1 : start Hyper ledges composes online version of local.

step 2 : select empty business network.

step 3 : Fill basic information, select empty busines network. & click 'deploy' button from right pannel.

step 4 : Connect to "hardware assests"

step 5 : click on "add a file"
step 6 : click on "+ add a file"
step 7 : permissions act file sample
step 8 : Test our hardware assests business network

step 9 : Create Assets

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Step 10 : Lets Create participants click 'Employee' & click

Step 11 : To do transaction

Step 12 : click on " All Transaction"

Step 13 : Deploy " hardware Assests

Step 14 : Start Docker & run Cmds

Conclusion:

In this way we have learnt about hyper ledges & its use case in business world.