Name		[illegible] Year	
Subject	Internet of Things (Advance) (2000611C)	Branch ~~Class~~	
Semester	VI th	Roll No.	

I N D E X

Sr. No.	Experiment Description	Experiment Date	Submission Date	Remarks/Signature
1.	Report on python programming language			
2.	Development of IoT Data Analysis Software:			
3.	Creating an ID on free Cloud Storage and Data sharing.			
4.	Creating a Hetrogeneous Network and Connecting Devices.			
5.	Development of an IoT App.			

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Experiment → 1

Aim →

Report on python Programming Language:-

Introduction to python →

python is a high level programming language known for it's simplicity and readability. It was created by Guido Van Rossum and first realsed in 1991. python's popularity has soared due to it's versatility and wide range of applications. including web deveplopment, data analysis, machine learning and more.

Syntax and Basic Concepts →

python is ~~ti~~ easy to understand, making it deal for begineers variables do not need to be declared explicity and data types are dynamically inferred. Contool flow statement such as if-else, loops, and fuctions are stright forward to write and Understand.

Advanced Python →

python supports advanced programming concepts such as fuctions, module packages, and object-oriented programming (OOP). fuctions allow code and modularization, while modules and packages enable organizing code into reusable components.

Python Libraries →

python boasts a vast eco-systeam of libraries for various purpose. Numpy is used for numerical computing, Pandas for data manipulation and analysis, Matplotlib for data visualization, and Tensorflow for machine learing and deep learing tasks. These liabraies enhance python's capabilities and productivity for specific domains.

Applications of Python →

python is widely used across industries for various applications. In web deveplopment, framework like Django and Flask simplify buiding robust web application. python's simplicity and readability make it an excellent choice for rapid prototyping and development.

Conclusion →

python's simplicity, readability and vast ecosysteam of libraries make it a preferred choice for programming across diffrent domains. It's versality and ease of use contribute to it's widespread adoption and continued growth in the software development industry.

Experiment → 2

Aim →

Development of IoT Data Analysis Software.

Problem Statement →

The IoT data analysis software aims to process and analyze data. collected from IoT devices to extract insights and make informed decisions.

Software Design →

The Software will Consist of modules for data collection, preprocessing, analysis, and visualization. it will integrate with IOT platforms to retrive data securely and efficiently.

Implementation →

python will be used to develop the Software due to it's simplicity and rich ecosystem of libraries. Libraries such as MQTT for IoT Communication, Pandas for data manipulation, and Matplotlib. for visualization will be utilized.

Testing :→

The Software will undergo rigorous testing to ensure accuracy, reliability and

Scalability. Unit tests, intregation tests, and performance test will be conducted to validate it's fuctionality.

Conclusion :-

The IoT data analysis software provides a robust solution for processing and analyzing data from IoT devices, enabling stakeholders to derive valuable insights and optimize decision-making processes.

Experiment - 3

Aim -
Creating an ID on free Cloud storage and Data sharing :-

Cloud Storage provider :-
options like Google Drive, Dropbox, or OneDrive offer free cloud storage with easy-to-use interface and ample storage space.

Registration Process:
User can sign up for an ~~acc~~ account on the chosen cloud storage platform by providing basic information such as name, email and password.

Data Uploading:
Once registered, user can upload data to their Cloud storage by dragging and dropping files or using the upload fuctionality within the platform.

Sharing Data:-
Data can be shared with others by genrating a sharable link or inviting collabrators via email. Users can specify permission to control access to shared data.

Conclusion :-

Free Cloud storage platforms provides a convenient and secure a way to store and share data with others, facilitating collaboration and information sharing.

Experiment → 4

Aim →

Creating a Hetrogenous Network and Connecting Devices:

Network Design →

Plan the network topology considering the types of devices to be connected their communication protocols, and the desired network architecture.

Device Configuration →

Configuration of each device to connect to the network, ensuring compatibility and compliance with network protocols and the desired network architecture.

Network Setup

Establish connectivity between devices by configuring IP addresses, subnet masks, and routing protocols. Test connectivity and troubleshoot any issues

Testing.

Conduct through testing to ensure all devices can communicate effectively within the network. Test data transfer speeds, reliability, and security features.

Conclusion :→

Creating a hetrogenous network enables the intregation of devices are diverse and technologis, facilitating seamless communication and collaboration across different platforms and protocols.

Experiment - 5

Aim

Development of an IoT App.

Identify Problem:

Choose a specific problem that the IoT app will address, such as home automation, environmental monitoring, or health tracking.

App Design

Design the user ~~the~~ interface (UI) and fuctionalities of the app to adress the identified problem effectively. consider usability, accessbility and user experience (UX) principals.

Implementation.

Develop the app using python and appropiate framework such as Flask or Django for backend development and framework like kivy or Tkinter for fronted development.

Testing.

Test the app on diffrent devices and environments to ensure compatibility, fuctionality and performance. Conduct user testing to gather feedback and make improvements.

Conclusion

The IOT app provides a user-friendly interface for interacting with IOT devices, adressing the identified problem and enhancing user experience and convience.