-Overview of the Organization

*TechifyIndia is a start-up for providing IT solutions, building innovative IoT products providing systems integration solutions and technology provider

*Since 2017, the company have been providing service like:(website development, design services, IoT, application development and technical support) to clients in various industries

*Our creative team brings business to the next level of digitalization with mobile apps and internet marketing to improve branding and lead generation to succeed.

-VISION AND MISSION OF THE ORGANIZATION
*To produce excellent services in the field of IT Services

*The company's vision and mission is creating a positive impact on the industry and society

*TECHIFYINDIA is one stop partner where you can outsource all your support services with complete peace of mind about quality and reliability

-Organization structure

*The executive team consists of 12 members, with the CEO being the highest-ranking member of the organization.

*The organization's structure ensures that each department operates efficiently and while working towards the company's goals

-Roles and Responsibilities of personnel in the organization

*The roles and responsibilities of personnel within the organization vary depending on their job functions and departmental affiliations.

*The common roles within the organization include CEO, Marketing management, Developers, H-R management, etc,

-Products and market performance

*TECHIFYINDIA Software Solution's strength lies in understanding the client's business processes, culture, vision and goals across the industry segments and offering client oriented solutions which are highly reliable, creating customer comfort. Few of our products are listed below.

*Cashew Soft ERP

*TAX-E(GST Billing)

*CNC Monitoring

*IOT Based Smart Bell

2. On Job Training - I

-PYTHON PROGRAMMING WITH OOP's

* Python is an high-level, interpreted programming language that emphasize code readability and simplicity.

* Python is known for its elegant syntax and easy-to-understand code, making it a popular choice for beginners and experienced developers.

* It supports various programming paradigms, including procedural, functional, and object – oriented programming (OOP)

* Python programming with an emphasis on OOP principles, concepts, and implementation.

OBJECT ORIENTED PROGRAMMING (OOP)

- Object oriented programming is a programming paradigm that provide a structure way to design and build software.

- Classes and object : In oop, class represent a real-world entity. It defines the structure and behavior that objects of that class will possess. Object is an instance of class representing a specific entity

- Encapsulation

- Inheritance

- Polymorphism

IMPLEMENTATION OF OOP IN PYTHON

- Classes: Define classes to encapsulate data and behavior.

- Objects: Create objects (instances) of classes to represent specific instances of the data.

- Inheritance: Use inheritance to create subclasses that inherit properties and methods from a parent class.

- Polymorphism: Utilize polymorphism to create multiple methods with the same name but different implementations in different classes.

- Encapsulation: Use encapsulation to hide the internal details of a class and provide public interfaces for interacting with the object.

BENEFITS OF OOP IN PYTHON

- Code reusability

- Encapsulation and data hiding

- Abstraction and simplified complexity

- Inheritance and code reuse

- Polymorphism and flexibility

IMPORTANT FUNCTION OF PYTHON

- Map: The map() function in Python is used to apply a given function to each item in an iterable

- Filter: The filter() function in Python is used to filter out elements from an iterable based on a specified condition.

- Reduce: The reduce() function is part of the functools module in Python. It is used to apply a specified function to the elements of an iterable in a cumulative way.

- Lambda Functions: A lambda function is a small, anonymous function in Python. It is defined using the lambda keyword and can take any number of arguments but can only have one expression.

3. Use Case – I

BANKING APPLICATION

- They enable users to perform various financial transactions and access banking services conveniently from their mobile devices or computers.

- **Account Management:** Banking applications allow users to create and manage their bank accounts, including checking, savings, and investment accounts.

- **Bill Payments:** Banking apps provide the functionality to pay bills directly from the application, eliminating the need for manual payments.

PROBLEM STATEMENT

- You are tasked with creating a simple banking application. Implement a Python class called BankAccount that represents a bank account. The BankAccount class should have the following attributes and methods

- Attributes:

- account_number (integer): A unique identifier for the bank account.

- balance (float): The current balance in the account.

- Methods:

- _init_(self, account_number): Initializes a new bank account with the given account number and a balance of 0.

- deposit(self, amount): Deposits the specified amount into the account and updates the balance accordingly.

- withdraw(self, amount): Withdraws the specified amount from the account, if the account has sufficient funds, and updates the balance accordingly.

- get_balance(self): Returns the current balance in the account.

- Write the BankAccount class implementation and provide a sample code snippet that demonstrates the usage of the class by creating instances of BankAccount and performing various operations on them.

AI IMPLEMENTATION

- NLP is used to enable natural language interaction with the system, allowing users to input account numbers through an input function.

- Decision-making is implemented using conditional statements to process and respond to user input.

♦ Automation is achieved by automating banking operations like depositing, withdrawing, and checking account balances, reducing manual intervention

4. On Job Training - II

-ARTIFICIAL INTELLIGENCE

*AI application include advanced web search, recommendation systems, understanding human speech, self driving cars, automated decision making, and competing at the highest level in strategic game system.

*The various sub field of AI research are centered around particular goals and the use of particular tools.

*The traditional goals of AI research include reasoning, knowledge representation, planning learning, natural

language processing, perception, and ability to move and manipulate objects.

-TYPES OF AI

*NLP is used to enable natural language interaction with the system, allowing users to input account numbers through an input function.

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-MACHINE LEARNING

- Machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy.

- Machine learning is an important component of the growing field of data science.

- These insights subsequently drive decision making within applications and businesses, ideally impacting key growth metrics.

- Machine learning algorithms are typically created using frameworks that accelerate solution development, such as TensorFlow and PyTorch.

-MACHINE LEARNING METHODS

- Supervised machine learning: Supervised learning, also known as supervised machine learning, is defined by its use of labeled datasets to train algorithms to classify data or predict outcomes accurately.

- Unsupervised machine learning: Unsupervised learning, also known as unsupervised machine learning, uses machine learning algorithm to analyze and cluster unlabeled datasets.

- Reinforcement machine learning Reinforcement machine learning is a machine learning model that is similar to supervised learning, but the algorithm isn't trained using sample data

-OpenCV

*OpenCV open source computer vision library is an open source computer vision and machine learning software library

*OpenCV was built to provide a common infrastructure for computer vision application and to accelerate the use of machine perception in the commercial product.

*OpenCV is an open-source software library for computer vision and machine learning.

*The OpenCV full form is Open Source Computer Vision Library. It was created to provide a shared infrastructure for applications for computer vision and to speed up the use of machine perception in consumer products

-HAAR   CASCADE   DATASET

*OpenCV open source computer vision library is an open source computer vision and machine learning software library

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5. Use Case - II

SMART CITY MISSION

- National Smart Cities Mission is an urban renewal and retrofitting program by the Government of India with the mission to develop smart cities across the country, making them citizen friendly and sustainable

- The Union Ministry of Urban Development is responsible for implementing the mission in collaboration with the state governments of the respective cities.

- Smart Cities Mission envisions developing an area within the cities in the country as model areas based on an area development plan, which is expected to have a ruboff effect on other parts of the city, and nearby citoes and towns.

- The Smart Cities Mission is an initiative by the Government of India to improve the lifestyle of citizens living in that particular city or town.

Task – Face Detection

- Face detection is a computer vision technique that involves locating and identifying human faces within images or video frames.

- The goal of face detection is to automatically detect the presence and location of faces in a given image or video.

- Face detection algorithms typically work by analysing the visual patterns and features that are characteristic of human faces.

- These algorithms can be based on different approaches, including traditional image processing techniques or more advanced machine learning methods.

PROBLEM STATEMENT

- Face Detection: Threshold the input image in the HSV colour space using predefined colour ranges for skin colour to accurately detect Face.

- Contour Extraction: Utilize contour detection techniques to identify the contours of the Face in the binary masks obtained from color thresholding.

- Filtering and Size-based Selection: Filter out small and irrelevant contours based on their area, using a

minimum contour area threshold, to eliminate noise and improve detection accuracy.

- Bounding Box Visualization: Draw bounding rectangles around the detected Face contours and annotate them with the corresponding Face for visual representation and interpretation.