Name the PET(s) you would use for each of the following scenarios along with the justification to select it/them. Assume that in each scenario, the organisations applying the PET(s) have sufficient resources to integrate them into their applications.

Question 1

VoiceMe is a speech recognition model that uses voice recordings of Android mobile users to train a personal mobile assistant to recognise mobile users' voice. However, since the inherent noisy nature of the voice recordings, the developers of VoiceMe decide to clean voice data as much as possible before training the machine learning model.

Question 2

Ethereum, a blockchain platform, seeks to implement a functionality that enables the verification of transactions without revealing any details of the transactions themselves. Specifically, the platform needs a solution where the validity of a transaction can be confirmed without disclosing the sender, recipient, or the transaction amount. This includes ensuring that the total amount sent matches the total amount received, and that the sender has sufficient balance, all while maintaining complete confidentiality of the transaction details.

Question 3

A fintech startup, SecurePay, is developing a new AI-driven fraud detection system to identify and prevent fraudulent transactions in real-time. The system needs to be trained on a large dataset of historical financial transactions, which include both legitimate and fraudulent activities. The dataset should capture various transaction attributes such as amounts, locations, merchant categories, user behaviors, and transaction timestamps. But due to the sensitivity of financial data the process of acquiring a dataset is time consuming and expensive.