**Problem Statement :**

Design a smart contract using Solidity for a voting system on a blockchain platform, providing users with the ability to vote for different political parties or choose the "None of the Above" (NOTA) option.

**Objectives :**

Objectives of the Voting System Smart Contract Project:

1. Only eligible voters, represented by their Ethereum addresses, should be able to cast a vote.
2. Each voter should be allowed to vote only once.
3. The available options for voting include BJP, Congress, Others, and NOTA.
4. The contract should maintain a transparent and immutable record of the vote counts for each political party.
5. Ensure that the smart contract is secure against common vulnerabilities and attacks.

**Explanation for the smart contract code :**

**Owner of Contract:**

First things first, in our system there's a person in charge called as **owner**. This person has special powers, like checking the votes. We have different choices for voting. Imagine them like options on a menu, such as **BJP, Congress,** and **Others**.

**hasVoted Mapping:**

This mapping is used to keep track of whether a particular address (representing a voter) has already cast a vote or not. Prevents double voting and ensures the integrity of the voting process by allowing each voter to participate only once.

**voteCounts Mapping:**

This mapping is used to keep track of the number of votes received by each political party.

Provides a transparent and immutable record of the vote distribution, allowing anyone to query the vote counts for each party.

**Voted Event:**

The Voted event shows important information when a user successfully casts a vote. This includes the address of the voter and the political party they voted for.

**Modifier:**

Two of the modifiers are created for defining access of the specific parts of the program. And these two modifier are named as

**Vote Function:**

The function takes a party parameter representing the political party for which the user wants to cast their vote.

It checks if the provided party is one of the valid options (BJP, Congress, Others, or NOTA).

If the provided party is invalid, the function reverts with an error message.

**getVoteCount Function:**

This function returns the count of the votes casted by the users.