LAB 08-08-2023

TASK: “Student Registration System ”

You are building a student registration system for your institute on the Ethereum blockchain. Create a smart contract that allows the following functionalities:

1) Create an enum named **‘Department’** with options: ‘Artificial_Intelligence’, ‘Blockchain’, ‘E_Commerce’ and ‘Arts’.
2) Create an enum named **‘Status’** with options: ‘Enrolled’, ‘NotEnrolled’, ‘Graduated ’and ‘Expelled’.
3) Define a struct named **‘Student’** with properties: ‘name’, ‘age’, ‘registrationDate’, ‘Department’, ‘Status’ and ‘ObtainedMarks’.

   (ObtainedMarks would be 0 in case of ‘NotEnrolled’ and ‘Expelled’.)

4) Use a **mapping** to store student RollNo and their corresponding Student struct.
5) Implement a function to **register** a student by providing their necessary attributes.
6) Implement a function to **update** the student’s details by providing RollNo and other necessary information.
7) Implement a function to **retrieve** the details of a registered student using their RollNo.
8) Implement a function to retrieve the **count of students** registered in ‘each department’.
9) Implement a function to retrieve the details of **Top 3 Achievers** currently enrolled in Blockchain.

NOTE:

- ➔ Ensure that the contract is properly organized with appropriate data locations for storage variables.
- ➔ Ensure that the contract is gas-efficient and handles potential edge cases gracefully.