Tutorial 3
Introduction to Blockchain (Class:60769)
Institute of Business Administration

Perform the following below task on Remix

Remix IDE is **an open-source web and desktop application.** You can visit remix at https://remix.ethereum.org/

Disclaimer: Use only the Testnet and Fake ETH. Working with cryptocurrencies involves lots of risks and any decision regarding cryptocurrency usage, legal matters, investments, taxes, cryptocurrency mining, exchange usage, wallet usage, and so on is at your own risk and responsibility.

Task #1

- Consider this Smart Contract [https://drive.google.com/file/d/1LIB69Nd5VbyUBzw6YQ4ZEYTc_C60fADF/view?usp=sharing]
- Change the state variable **name** to be declared as a **public constant.**
- Declare a setter and a getter function for the **supply** state variable.

Task #2

- Consider the solution from the previous challenge.
- Add a public state variable of type address called the **owner**.
- Declare the **constructor** and initialize all the state variables in the constructor. The **owner** should be initialized with the address of the account that deploys the contract.

Task #3

- Consider this Smart Contract [https://drive.google.com/file/d/1LQDLYlzceWWHQDnmkVCjBySLKFEpklp3/view?usp=sharing]
- Modify the **changeTokens()** function in such a way that it changes the state variable called **tokens**.

Task # 4

- Consider the exercise in the class and create a student grade report app.
- The contract should be able to save student, name, ERP ID, and grades of 3 subjects [1,2,3]
- The contract should return the grade of the student given ERP ID
- The contract should also return the average grade of the student.

Task # 5

- Consider the file global.sol about the use of global variables.
- Develop a function that will do some operation and output the amount of gas used during that operation.
- Hint: you can use the global function “gasLeft()” to find the difference.

Task # 6

- Consider the file visibility.sol
- Change the visibility specifier of **f()** so that it can be called from derived contracts as well. Do not set it as being public.
- Create a new contract that derives from **A** and call **f()** from the new contract.