Blockchain - Take Home

As a take home exercise you will implement smart contracts for three scenarios described below. You do not have a time limit, but be advised that expectations are higher the longer you take to turn in your solution. Keep in mind that the solution needs to be gas efficient. Please make your submission with an etherscan link to the deployed version of the contract to any of the valid testnets (*Goerli / Rinkeby / Kovan*). Please reply to us with a gzipped tarball version (described below) of the codebase as your submission. It must include deployment instructions, tests of the functionality and description of any potential issues with current implementation.

Submission instructions:

> *git init eth-bank*

> *cd eth-bank/*

Implement solution

git add/commit your changes

> *git bundle create eth-bank-repo.bundle --all | gzip > eth-bank-repo-repo.tar.gz*

Reply to the email with the tarball attachment

Scenario 1: We are launching a decentralized bank that supports basic account operations Initial version of Smart contract must support the following operations. Smart contract must also offer optionality to add new business logic after deployment:

1. Account Creation
2. Deposit Amount
3. Withdraw amount
4. Get Account Balance

Scenario 2: Our banking customers are asking for more functionality so we need to support additional features. However since the version 1 of smart contract is deployed, we need to upgrade from version 1 to version 2 to support below requirements:

1. Ability to Transfer Amount from one registered account to another within the bank
2. Ability to Send Amount to any external wallet address

Scenario 3: Our bank is has been acquired by larger firm and we need to provide ability to pause transactions until change of ownership is finalized, so we need to support below requirements:

1. Ability to pause all transactions except withdrawal
2. Ability to change ownership of contract from *Owner A* to *Owner B*