# Assignment 1

You can work in a team of 4 to 6 people.

# Task 0 - Assemble a Team

Fill out this document: https://docs.google.com/spreadsheets/d/1AGZWpTNDpR4bW1- 584091rosLPzs3TVAZT1iJXvC3us/edit?gid=0#gid=0

Team number and name: 6 Capybara

# Task 1 - Time Capsule

Each team member must write a message to their future self (message to themselves after the program ends (5-150 words)).

Encrypt this message using AES (256 bit). Use one key for the entire team as a key.

Write the encryption results in base64:

# Task 2 - Mining

Find the input value for the SHA256 hashing algorithm that would give a result with 2 leading zeros.

The input value should be students+

Input value: studentscapybara371

Resulting hash: 00ac0db030f333fc377cf45ed2a150e63063ae49090c7efd748bd2aa550c5820

Write the difference between hashing and encryption (40-200 words): Answer:

Hashing's purpose is to transform data into fixed-size string to check data integrity or to later check if data was changed, so basically hash is a unique identifier of some data. Hashing is irreversible.

Encryption's purpose is to convert data into format that can't be easily understood without decryption. This is used for protection of data from unwanted eyes while hashing is used for protection of data from modification or damage. Encryption is reversible with decryption key.

EXTRA: find the input value that gives a hash with 5 leading zeros

studentsbabycapybara1173621 00000180e1b5d235ec9ae092493c8a9ba66dcfabcee776ea2f4ccec13d837a60

# Task 3 - Working with blockchain

1. Create a metamask wallet. Write your metamask addresses:
2. Create a second account in metamask and send 0.01 tBNB there. Leave a link to the transaction where you make the transfer: https://testnet.bscscan.com/

Transaction link:

1. Working with the block explorer. Write which block your transaction ended up in, send a link to this block in the block explorer. example: https://testnet.bscscan.com/block/27801311 describe this block (20-100 words)

Block URL:

Block Description:

1. Swap tBNB for BUSD at https://pancakeswap.finance/?chain=bscTestnet (leave transaction URL) Transaction URL:
2. Add liquidity to tBNB and BUSD at: https://pancakeswap.finance/liquidity?chain=bscTestnet (leave transaction URL)

Transaction URL:

1. Describe what liquidity is needed for (20-100 words) Answer: