

Bitmunt - Task 6 (optional)

1 Mining Blocks

In this exercise, you will finally mine your own blocks.

1. Collect transactions in your mempool into a block.
2. Create the logic to build a block template
 - “miner”: includes the name of your group
 - “studentids”: contains the student IDs of your team members
3. Mine on the candidate block to discover proof-of-work.
4. Benchmark and optimize your miner. What hashrate can you achieve?
5. Optional: In the event of receiving conflicting transactions, optimize the set of transactions that you include in the block to maximize the fees you can collect. (Note that there is no block size limit in Bitmunt. So if there are no double spending transactions, you are expected to include all valid transactions that you have seen.)

Importantly:

- You will get half of the points for this task if the longest valid chain contains a block mined by your node.
- The block must be k -deep with $k = 6$ in the longest valid chain (as seen by the grader) at the time of the hard deadline, in order to be accepted. Note down the blockid of the block you have mined in `submission.txt`

2 Send Transactions

To earn the remaining half of the points for this task, you must send a transaction that pays 50 bm to the target address.

7cb057a09fb1c0b38b430e3c9deae5607c32665d526ee75724cb0615319a87d7.

Note down the txid and the blockid that includes this transaction in `submission.txt`

The transaction must have a valid signature, spend rightfully created money, be broadcast to the network and make it to the longest chain. We will consider the payment received when the transaction is confirmed to a block that is buried under $k = 6$ blocks. It must also be

money sent from a public key for which you control the private key (to prove that it is you). For this part, we do not care if you mined the money or if you received it from someone else.

The **soft deadline** for this task is **15th May, 2025, 11.59pm**.

The **hard deadline** for this task is **15th May, 2025, 11.59pm**.

We will not accept any submissions after the hard deadline. Please ensure you correctly tag your commit and push it to the main branch.