

Background Assignment:

Hello, this is my submission for the background assignment of ZKU.

Part 1:

The commit adding the Hello World smart contract and a screenshot of the contract deployed is [here](#).

More specifically, [here](#) is the contract source code, and [here](#) is the screenshot.

Part 2:

The commit adding the improved Ballot contract with description of the changes made is [here](#), and [here](#) is the contract source file.

The function added to improve the original behavior is called *giveMultipleRightsToVote* and takes an array of voter addresses to operate on them instead of taking a single address.

Part 3:

The commit adding the screenshots of the gas fees associated to giving 10 voters the right to vote is [here](#).

In fact, [here](#) is the screenshot of the gas fees of one call to the old *giveRightToVote* (48 657 gas). So, to give rights to 10 voters we need to call it 10 times, resulting in **486 570** gas used.

On the contrary, [here](#) is the screenshot of the gas fees of a call to the improved version (*giveMultipleRightsToVote*), which lets us call it only once to give voting rights to 10 voters, resulting in only **279 274** gas being used.

So, with our improved version we use **486 570 - 279 274 = 207 296** less gas than what we used to!