



KULLIYAH OF INFORMATION & COMMUNICATION TECHNOLOGY

SEMESTER 1, 2021/2022

CSCI 4312 BLOCKCHAIN AND APPLICATION

SECTION 01

GROUP PROJECT PART 2

TITLE:

“CREATE A SMART CONTRACT FOR A CHARITABLE ORGANIZATION”

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1.0 INTRODUCTION

In project part 2, we have to perform at least 3-unit test on the smart contract that we developed in part 1 which was a smart contract that assumes the fundamental role of a charitable organization. We will also design and develop a web user interface for the users to interact with.

2.0 CONTRIBUTION

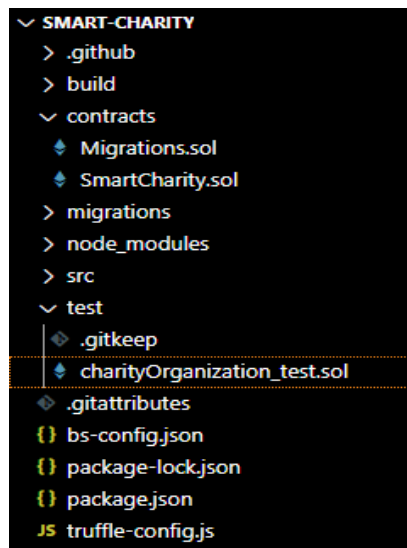
NAME	MATRIC NO.	CONTRIBUTION
MD ABDUR RAHMAN	1639233	Web Interface (withdraw) + 1 unit-test
MD RAKIBUL HASSAN	1720465	Web Interface (Deposit) + 1 unit-test
MD SAJIBUR RAHMAN	1715205	Web Interface (Donation) + Report making

3.0 UNIT TEST PERFORMING

First of all, we need to set up some installation in our visual studio. We have installed as follows:

- ✓ Jsn
- ✓ npm install -g truffle
- ✓ Ganache
- ✓ Metamask

After we run these instructions on our terminal in the Smart-Charity project we got a package.json file in our Smart-Charity folder.



For unit-testing we have used solidity and JavaScript. As a reference we have attached the link <https://trufflesuite.com/docs/truffle/>

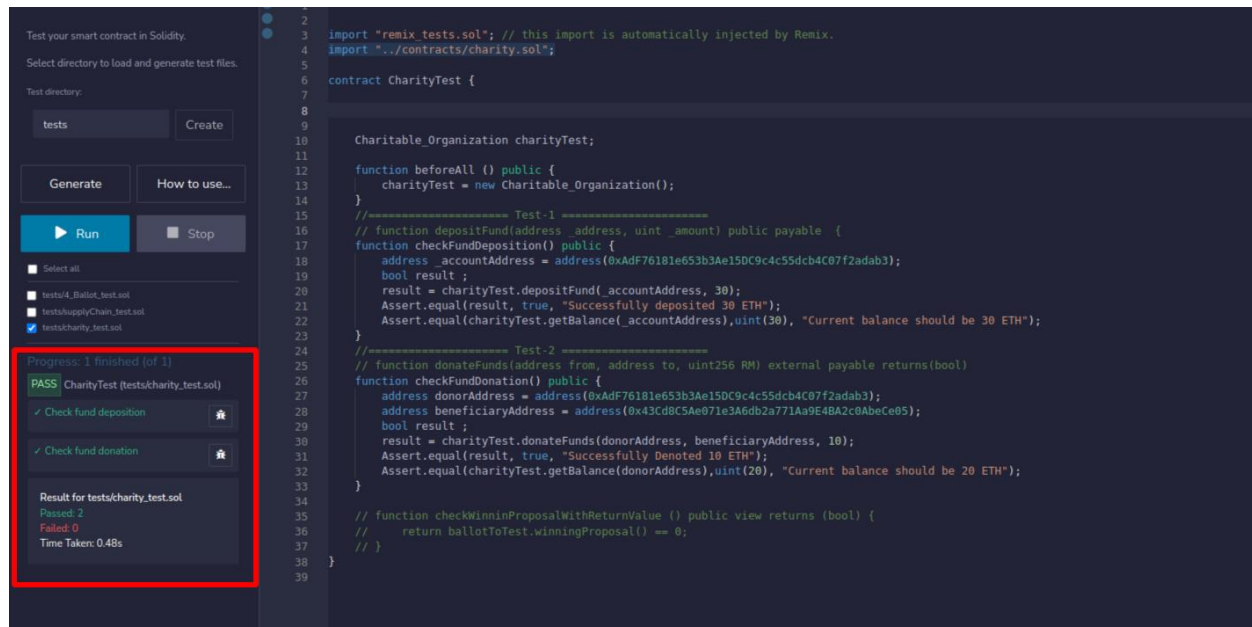


Figure 1: Unit-Test

It successfully deployed once we ran `npm run test` in our terminal. This is how we have done unit test our code.

4.0 DESIGNING & DEVELOPING A WEB INTERFACE

For designing and developing a web user interface we have used visual studio [Visual Studio Code - Code Editing. Redefined.](#) We opened a new folder for our work named as “Charity Organization”

- To connect remix with our local server, we used JavaScript functions to take values from remix website and show values to our local http server.
- We began designing the web interface using html and inline CSS after ensuring that all of our features were operating properly.
- Dashboard will be the first web interface of charity organization. Where admin can see the overview of total transaction, suspicious transaction, and money laundering. As a reference (**figure: 2**) we have attached the interface bellow.

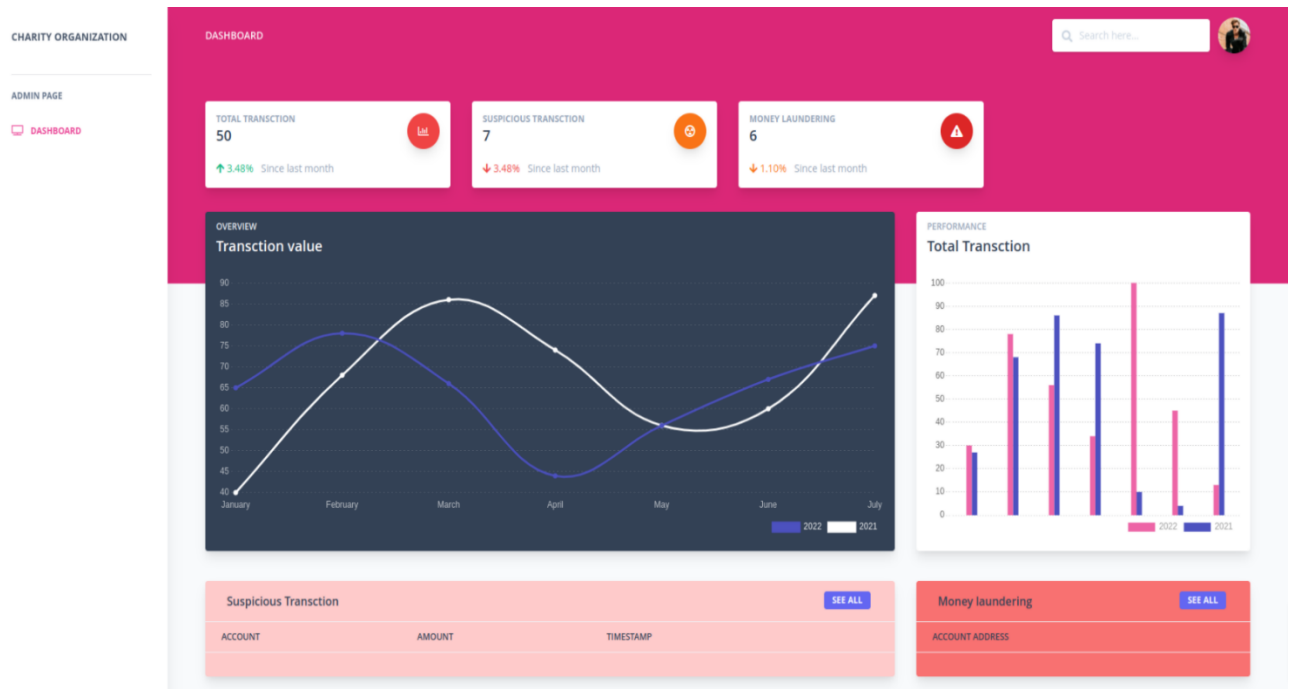


Figure 2: Admin page

- Our website allows users to deposit, donation and withdraw funds.
 - We are giving some screen short of our web interface during deposit. Before deposit the balance was 42 ETH (**figure: 3**) after depositing 5 ETH, the total amount is 47 ETH (**figure: 4**).

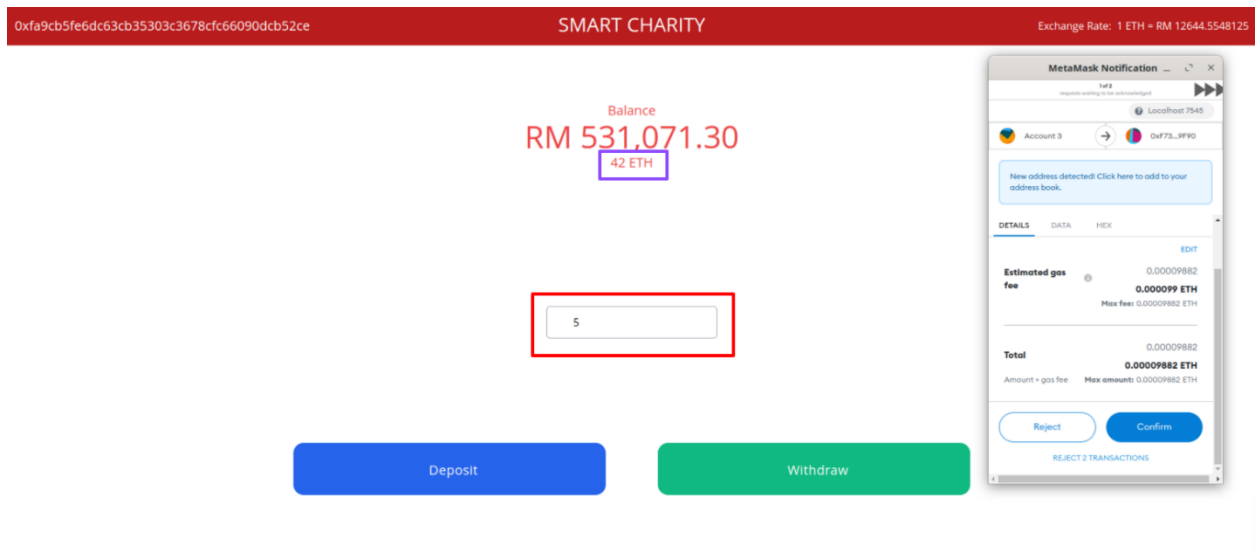


Figure 3: Deposit

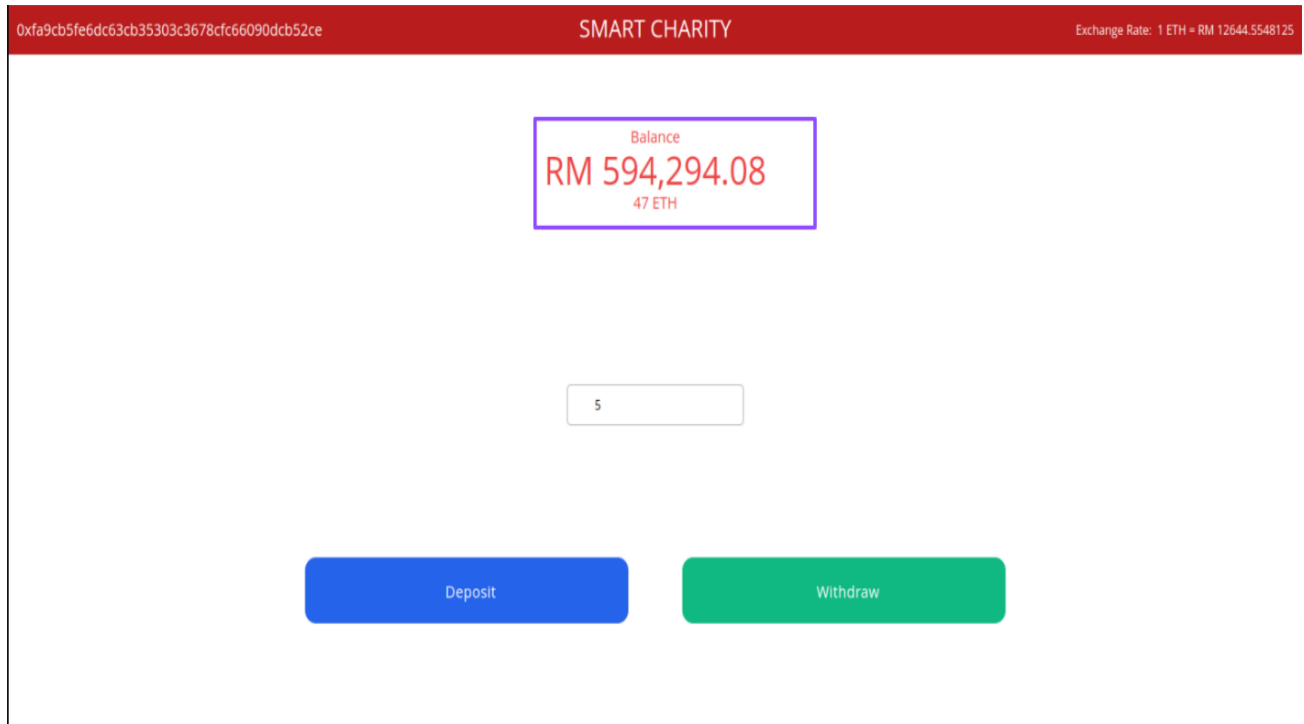


Figure 4: Balance After Deposit

- These interfaces are showing that, before donation the amount was 12 ETH (**figure: 5**) after donating 2 ETH, the total amount is 10 ETH (**figure: 6**).

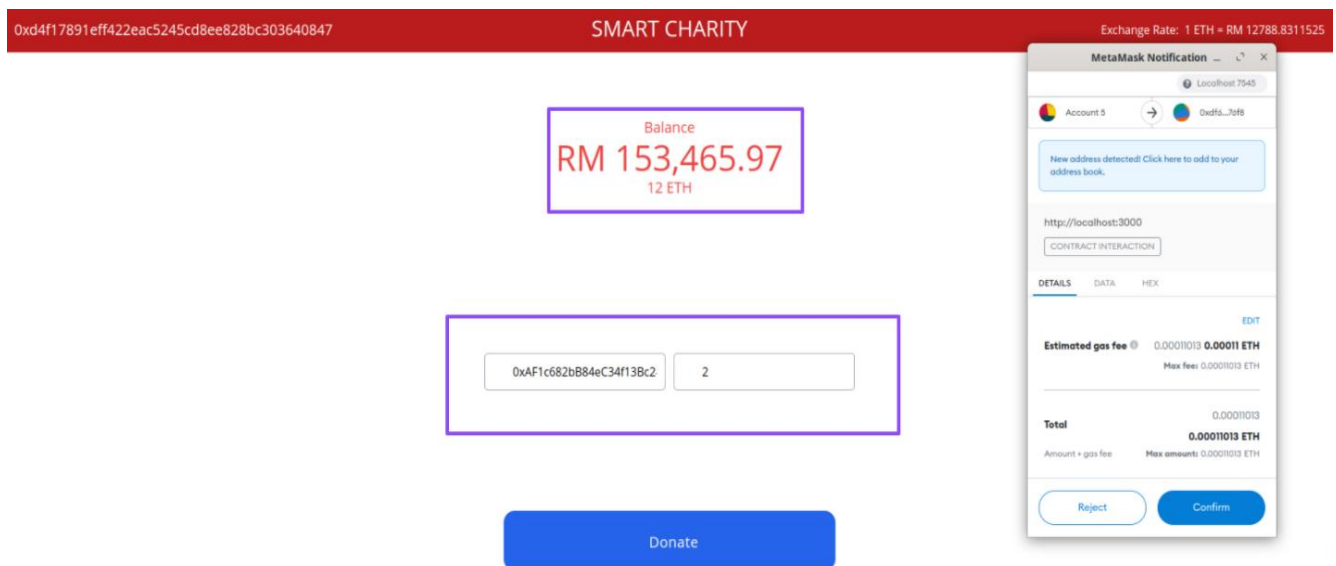


Figure 5: Donation

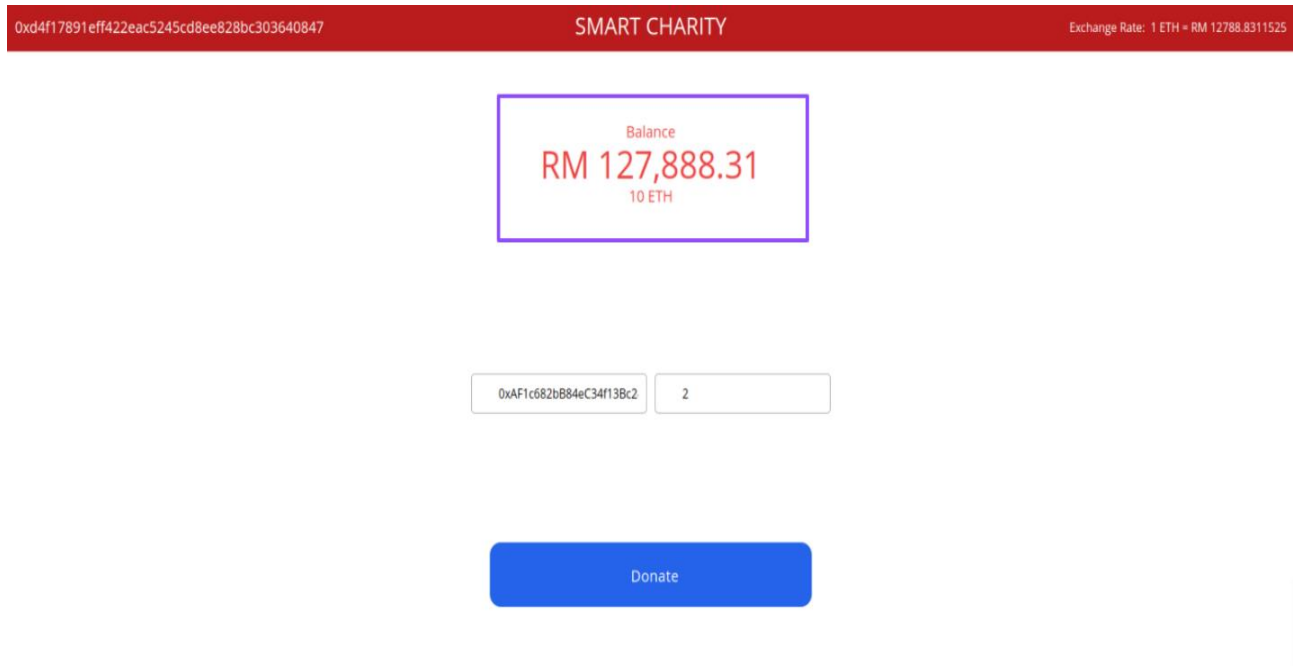


Figure 6: Balance After Donation

- These interfaces are showing that, before withdrawing the amount was 47 ETH (**figure: 7**) after withdrawing 5 ETH, the total amount is 42 ETH (**figure: 8**).

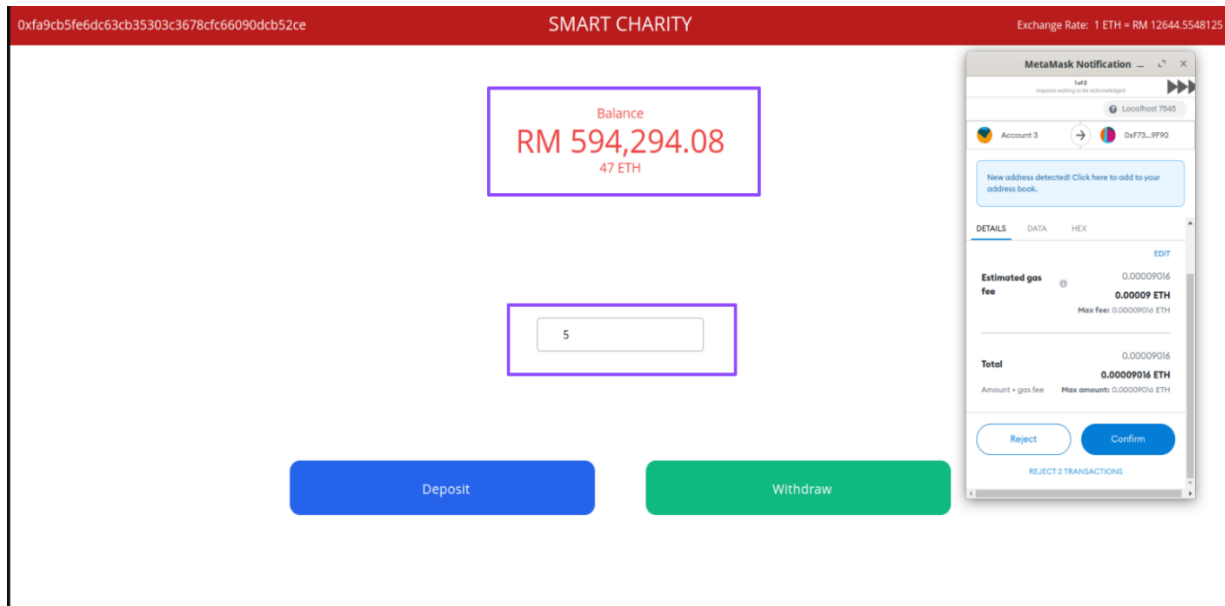


Figure 7: Withdraw

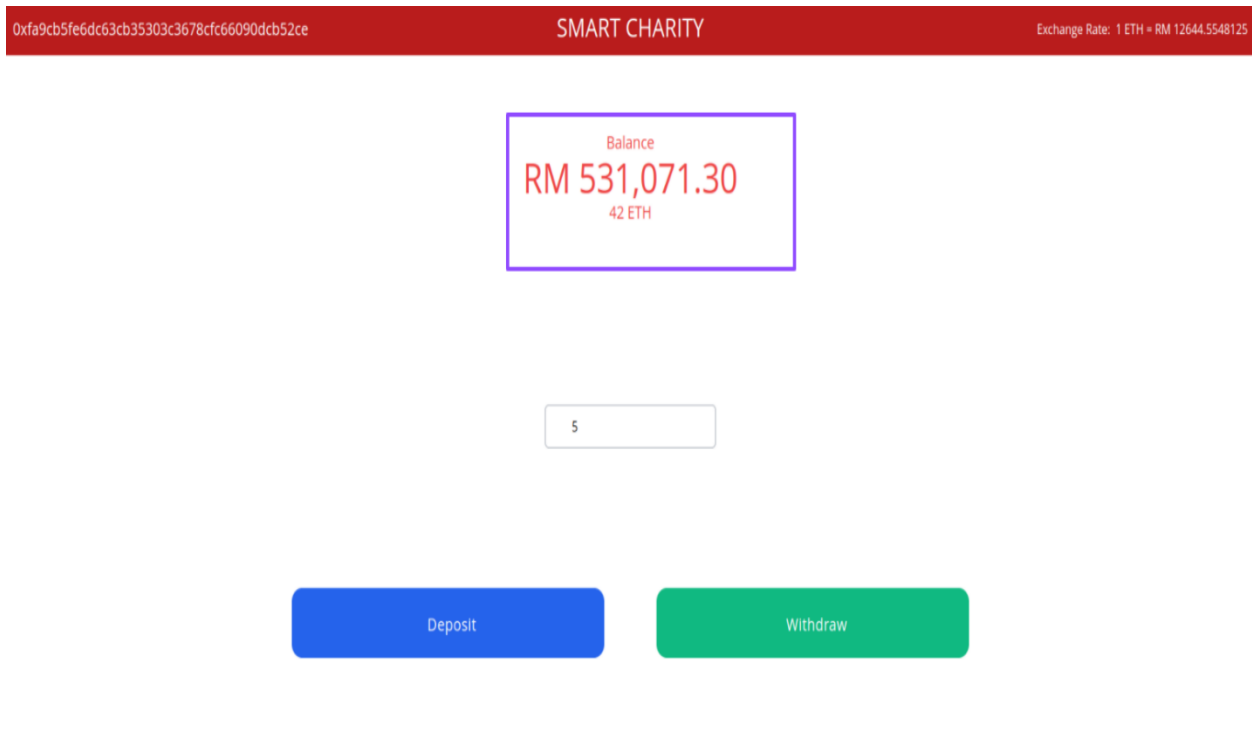


Figure 8: Balance After Withdraw

- These interfaces are showing that, after successful transaction, if the balance of funds in the smart contract is **more than 50 Ether**, the charitable organization will get a message that the smart contract may have been used as a **MoneyLaundering**.

If the fund transaction is greater than the threshold, the charitable organization will get an alert message like a huge transaction. Also, the alert message will provide the address and the amount who is involved with this.

As a reference we have attached two screenshots (**figure 9 & 10**) from our web user interface below:



TOTAL TRANSACTION

50

↑ 3.48% Since last month



SUSPICIOUS TRANSACTION

7

↓ 3.48% Since last month

MONEY LAUNDERING

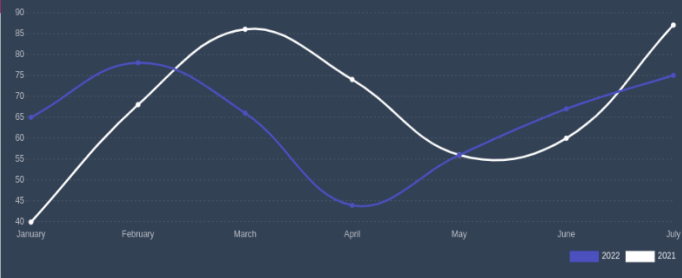
6

↓ 1.10% Since last month



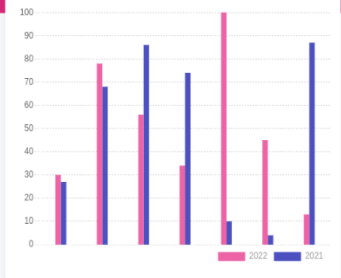
OVERVIEW

Transaction value



PERFORMANCE

Total Transaction



Suspicious Transaction

SEE ALL

ACCOUNT

AMOUNT

TIMESTAMP

0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	25 ETH	06/02/2022, 01:22:17 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	50 ETH	06/02/2022, 01:02:23 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	100 ETH	06/02/2022, 01:05:51 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	200 ETH	06/02/2022, 01:08:25 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	500 ETH	06/02/2022, 01:11:27 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	70 ETH	06/02/2022, 01:11:59 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	100 ETH	06/02/2022, 01:13:10 AM

Money laundering

SEE ALL

ACCOUNT ADDRESS

Figure 9: Suspicious Transaction



TOTAL TRANSACTION

50

↑ 3.48% Since last month



SUSPICIOUS TRANSACTION

7

↓ 3.48% Since last month



MONEY LAUNDERING

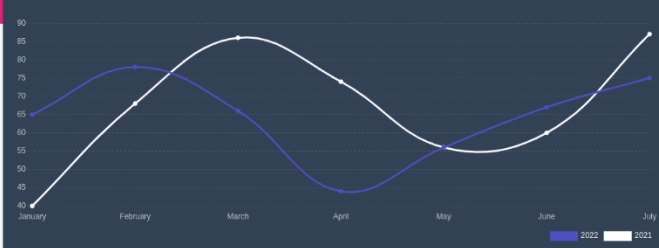
6

↓ 1.10% Since last month



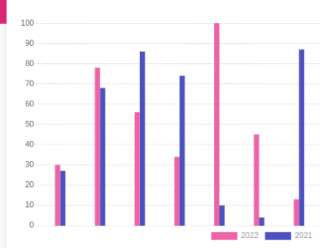
OVERVIEW

Transaction value



PERFORMANCE

Total Transaction



Suspicious Transaction

SEE ALL

ACCOUNT	AMOUNT	TIMESTAMP
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	25 ETH	06/02/2022, 03:59:13 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	50 ETH	06/02/2022, 01:03:25 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	100 ETH	06/02/2022, 01:08:25 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	200 ETH	06/02/2022, 01:08:25 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	50 ETH	06/02/2022, 03:58:32 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	100 ETH	06/02/2022, 01:11:27 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	100 ETH	06/02/2022, 01:11:59 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	100 ETH	06/02/2022, 03:58:59 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	80 ETH	06/02/2022, 01:13:10 AM
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8	70 ETH	06/02/2022, 01:22:17 AM

Money laundering

SEE ALL

ACCOUNT ADDRESS
0x0c9eeb2c944b4d397172cb7b84047c6e0704c2b8
0x7493372e0331ab5143a20d6cae6dd9b203e8c9c5
0x6b6e25368d0c4a48bce430acff987437a29c78a
0xad7f6181e653b3ae15dc9c4c55dcb4c07f2adab3

Figure 10: Money Laundering