CmpE 230 Spring 2021

Project III Report

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1.Problem description

The given problem requires us to develop a QT program that displays conversion rate information about cryptocurrencies. The main purpose is to display the conversion rate between cryptocurrencies and USD/EUR/GBP. The list of cryptocurrencies that will be displayed should be read from a file, the name of which is obtained from the environment variable named MYCRYPTOCONVERT. Then the http request is sent to get the information about the conversion rate of the crypto currencies provided in the file.

2.Problem Solution

To solve the given problem, we created a class called MyClass which inherits from a QTableWidget class. The MyClass class has a public constructor, public replyFinished, replyFinished2 slots and private variables.

Firstly, QApplication instance is created in the main class. And then a MyClass object is created. When the MyClass constructor is invoked, the http request is sent to get the list of coins with their ids, names, and symbols to search for the specific coins' ids by their name or symbol which will be given in the file. When there is a signal that the retrieval of the

data from the web page is completed, the replyFinished slot is invoked. There, firstly, we obtain a path to the file from the MYCRYPTOCONVERT environment variable. Then, the file is read, and all the cryptocurrencies' names or symbols that should be displayed in the table are obtained. Then, using regex and the previously obtained list of all the coins, we find the crypto-currencies' IDs by the given name or symbol. Next, all these IDs are appended to the URL link, which will be used to get the information about the conversion rates. Then, a table variable is initialized to QTableWidget with 4 columns because we need to display conversions between 3 currencies. But the number of rows is determined by the number of crypto-currencies given in the file. Then the http request is sent to get the information about the conversion rate of the crypto currencies provided by the file. When there is a signal that the retrieval of the data from the web page is completed, the replyFinished2 slot is invoked. The replyFinished2 function reads the data that was fetched from the website with the help of QJSonObject. Then the table is built in the nested for loop.

The program should be run with these commands:

- qmake -project "QT+=widgets" "QT+=network"
- qmake project.pro
- make

When contents of input file is:

bitcoin

litecoin

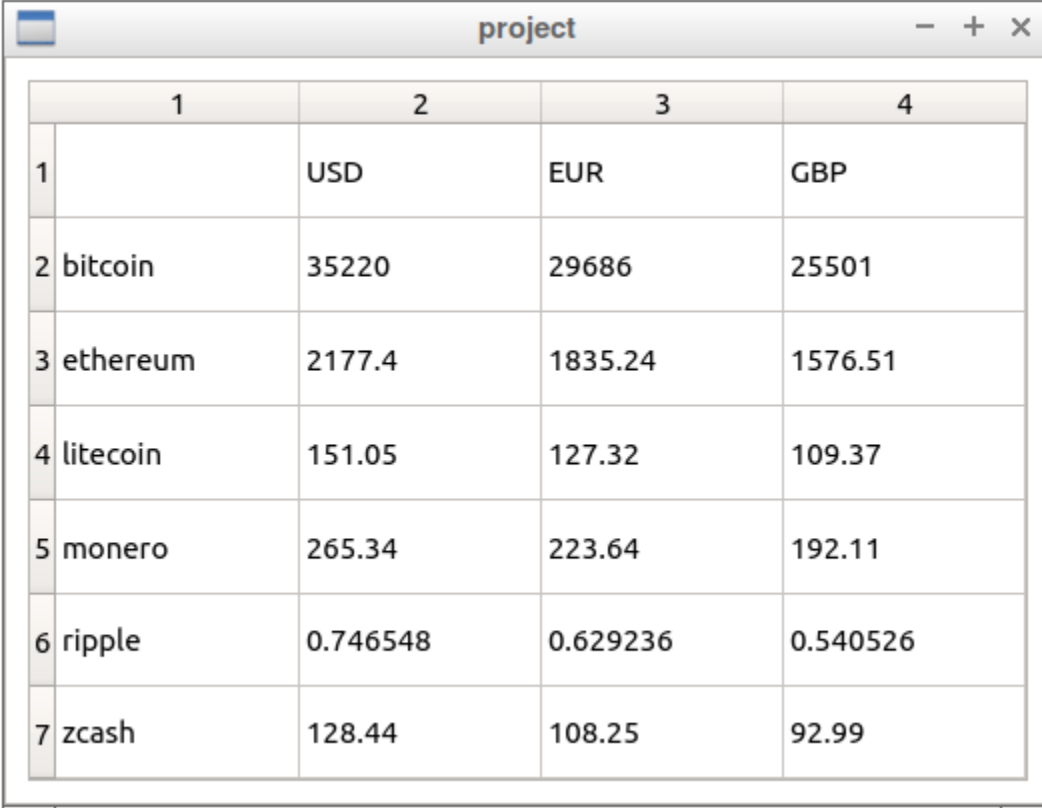ethereum

ripple

monero

zcash

The output of the program:

	1	2	3	4
1		USD	EUR	GBP
2	bitcoin	35220	29686	25501
3	ethereum	2177.4	1835.24	1576.51
4	litecoin	151.05	127.32	109.37
5	monero	265.34	223.64	192.11
6	ripple	0.746548	0.629236	0.540526
7	zcash	128.44	108.25	92.99

3.Conclusion

The program executes and gives the expected output. We successfully display the recent conversion rates between crypto-currencies and USD/EUR/GBP. Overall, the given problem was solved. In the future some other currencies might be included.