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Investment in Cryptocurrencies: A comparative study

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Abstract---Technology has created a significant difference in the lives of the people due to paradigm shift from offline activities to online activities. Cryptocurrency is a digital coin money based on the concept of cryptography encryption and electronic connectivity to function. Cryptocurrency is one of the best inventions in the context of financial sector. Being a decentralised currency, it also opposes the intervention of central banks and digital currencies by them. It transforms the virtual trade market by introducing a free rein trading mechanism that operates without the involvement and regulation of a third party. Digital currencies in today's scenario become need of the hour thus this paper compares the most prevalent cryptocurrencies of India on the basis of market capitalization rate. The paper also aims to study the key characteristics of the digital currencies.

Keywords---Cryptocurrency, Bitcoin, Ethereum, Tether.

Introduction

"The more you dig deeper into crypto the more you will discover you know little about so many things in life."

Olawale Daniel

Cryptocurrency is one of the best inventions in the context of financial sector. It is a digital money that was developed with the aim of controlling and protecting its transactions with the user's identity being hidden (Jani, 2018). Cryptocurrency includes crypto and currency in the word were crypto means cryptography and currency. "Cryptography" is a type of electronic medium technology that is used

to for the sake of privacy, information obfuscation, and authentication. Currency means money that is in circulation and legally acceptable.

Cryptocurrency has evolved with the motive of being the less expensive, trustworthy and quite efficient with comparison to the other currencies prevailing. The essence of Cryptocurrency is that its locus of control lies in no hands, it's a freely moving currency, though these are issued in some definite quantity. It enables the transmission of digital, cost-free cryptocurrency units, often known as coins, between client programmes over a peer-to-peer network (Vejacka, 2014). Cryptocurrency does not need an approval from central bank for its issue unlike the country currency and the most interesting thing is that there are intermediaries in the transactions and the whole control of that virtual currency is within the ambit of one self. People can keep a check on its status and regulate the quantity of it by their own. There is no need for an intermediary in this system, and transactions are usually very cheap and simple and quick (Li & Wang, 2016).

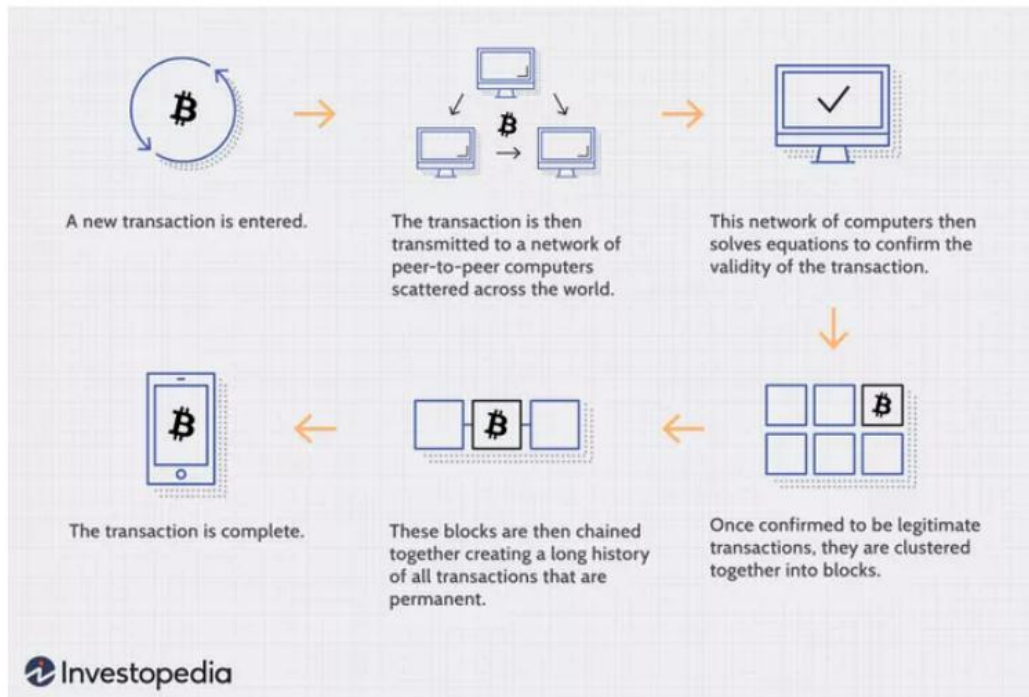
Background of Cryptocurrency

Satoshi Nakamoto, a pseudonym used by a creator, revolutionised the world of online payments in 2009 by launching the very first decentralised peer-to-peer payment method to the internet with the name Bitcoin. The technology that is used is referred to blockchain technology and this digital currency works in a decentralised way as compared to normal currencies which implies that no competent authority will be able to regulate and control its volume and frequency of being transacted. Many attempts to generate digital money were made in the nineteenth century, but they all failed (Mukhopadhyay et.al. 2016). Satoshi attempted to create a decentralised digital cash system after witnessing all of the failures. File sharing through a network, similar to peer-to-peer.

Blockchain technology

Cryptocurrencies are founded on the basis of blockchain technology. Blockchain is a type of shared database that differs from traditional databases in the manner it is stored: data is stored in blocks, which are then connected together via cryptography. Blockchains are distributed without a central body control and usually decentralised digital ledgers that are fraud proof and resistant to tampering. They allow a group of users to record transactions in a shared ledger within that group, with the result that no transaction can be modified once it has been published, as long as the blockchain network is operational. Information and history of cryptocurrency transactions are irreversible. A blockchain can store a range of information, including legal contracts, state identifications, and a company's goods inventory, in addition these transactions.

A blockchain is the foundation of the Bitcoin network. It is important to consider here that Bitcoin only uses blockchain to create a transparent ledger of payments; however, blockchain can theoretically be used to immutably record any amount of data items. This can be used for various transactions, election votes, goods inventories, state identifications, home deeds, and much more.



Source: Investopedia

Introduction of cryptocurrency in India

India being a striving country to achieve global targets in economy is enough capable to hold digital currencies. It was 2012 when cryptocurrency started flourishing in India. The attention on it increases with the passing years. After an unexpected move of demonetisation by the Indian government, people were very much insecure and investing in cryptocurrency became a smart move for them amidst the chaos. The crash occurred in 2017 after the government raised concerns against the use of the technology and ruled out the possibility of 'Ponzi scheme' fraud (Swetha & Meghashilpa, 2019). But in 2018, there was a drastic change. In the budget speech of 2018-19, Nirmala Sitaraman, the Finance Minister of India, announced that the government does not consider cryptocurrencies as legal tender. The government also mentioned that they will take all the necessary measures to make sure that the use of cryptocurrencies is eliminated from all activities. Then, a ban was imposed on the use of the same by RBI considering its unregulated setup and risks. On April 2018, the RBI issues a circular suggesting commercial and co-operative banks, payments banks, small finance banks, NBFCs and payment system providers to prevent from virtual currency transaction and giving services to the institutions dealing with them. This way cryptocurrency crash took place in India (Shakya et al., 2021).

It was on March 2020, the honourable Supreme Court declared the government ban on cryptocurrencies as unlawful as well as emphasised on the April 2018 circular as unconstitutional. The Supreme Court cited the fact that

cryptocurrencies are unregulated but not illegal in India which is one of the most important reasons for reversing the ban. In this way the stagnant cryptocurrency market gets revived.

At present, the central government is likely to propose "The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021". The bill aims to outlaw all private cryptocurrencies in India, but it makes some exclusions in order to promote cryptocurrency's technology platform and users. The law attempts to create a mechanism that will make it easier for the Reserve Bank of India to develop an official digital currency. It is one of 26 new bills set to be introduced in the upcoming Parliament session.

According to the Indian government, persons dealing with cryptocurrencies should be cautious and vigilant because there is no legal protection for this type of currency, and the government cannot assist people if they are victims of fraud (Singh & Singh, 2018).

Literature Review

(Swetha and Meghashilpa 2019) studies the future of cryptocurrencies with the reference to client perspective and looks into clients' confidence in managing digital money when they aren't totally controlled. The study reveals that digital money is quite likely to be the next currency stage and the absence of legality is regarded as the most serious worry for trading in digital currency. The study concluded that clients should be cautious using cryptocurrencies until it is more tightly regulated and monitored.

(Shakya et.al. 2021) performed a comparative study between China and India and evaluate the present position as well as the scope of cryptocurrency in India. The study found that cryptocurrency users express more trust in digital payment system in comparison to traditional payment methods. The study concluded that people investing in cryptocurrencies should be careful because they are prone to its negative effects until suitable regulations and legal protection are provided to users.

(Ahamed & Hussain, 2020) studies the features of top five cryptocurrencies selected on the bases of market capitalization and their comparative analysis for 6 Months. The study concluded how different cryptocurrencies fluctuates and got influenced by COVID-19. The absence of knowledge regarding trading parties is a fundamental issue that all Cryptocurrencies confront, exposing investors to unforeseen hazards like as anti-money laundering and terrorism funding.

(DeVries 2016) studies the concept of a cryptocurrency. The SWOT analysis of Bitcoin is done in the research work and some of the recent events and movements that impact the status of cryptocurrency. The study concluded that cryptocurrency appears to have progressed beyond the early adaption phase that new technologies go through. Bitcoin has begun to carve out a specialised market for itself, which may either help cryptocurrencies grow further into the mainstream, or be the primary cause of its decline. Cryptocurrencies are still in

their infancy, and it's hard to say whether they'll ever become a true main stream presence in the global market.

Objective of the study:

- 1) To study the features of top cryptocurrencies selected on the basis of market capitalization.
- 2) To study the comparative analysis of top three cryptocurrencies for 6 Months.

Research Methodology

The study is Descriptive type of research. The data is collected on the basis of secondary data. The samples are collected on the basis of availability of information on different websites hence convenience sampling is used.

Table 1
Ranking of the Cryptocurrencies Based on Market Capitalization

Sr. No.	Cryptocurrencies	Supply	Price	Market Capitalization in dollars	Market Capitalization In rupees
1	Bitcoin	21 million	\$40,431.13	\$768,848,803,274	Rs. 58687459311989.66
2	Ethereum	120 million	\$3,040.54	\$366,100,198,509	Rs. 27945013912509.59
3	Tether	82.7 billion	\$1.00	\$82,725,912,913	Rs. 6314601294109.95

Source: www.coingecko.com US \$ 1= Rs.76.33

Comparative Analysis of Cryptocurrencies

The top three cryptocurrencies have been selected for the study on the basis of their market capitalization rate. These are Bitcoin at first, Ethereum at second and Tether at third position. The data is collected for six months that is from October 2022 to March 2022. Following are the analysis of particular securities on the basis of their price fluctuations. The data has been taken from coingecko website retrieved on 16 April 2022.

Table 2
Price Bitcoin from October 2022 to March 2022

Months	October	November	December	January	February	March
Price	\$61837.26	57848.77	47191.87	37983.15	37803.59	47063.37

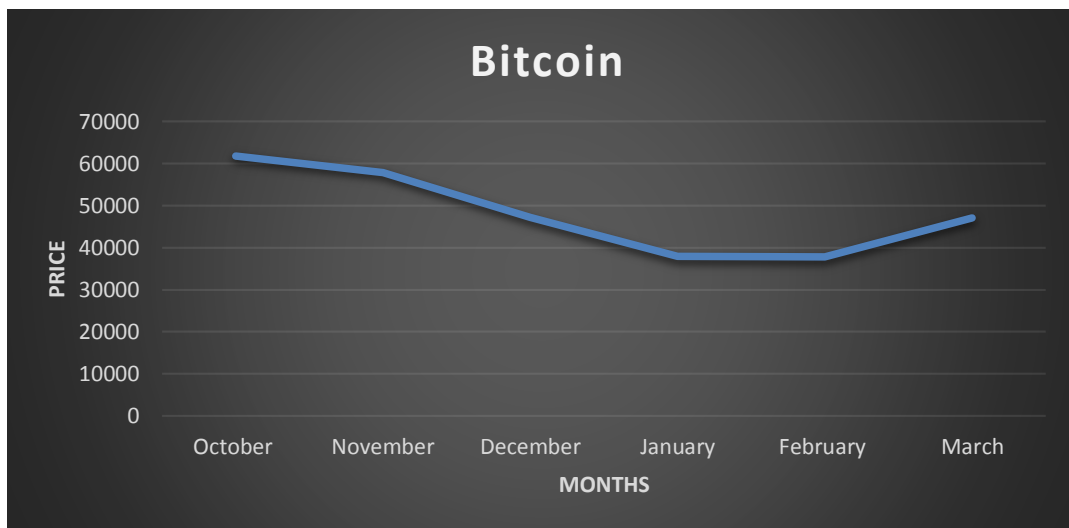


Figure 1: Price Fluctuation in BITCOIN

Bitcoin

Bitcoin is a digital money that functions as a global payment system. It is a decentralised digital currency that does not use the central bank system and has no single administrator. There is peer-to-peer networking, and all digital currency transfers were completed without the use of a middleman. The transactions are properly confirmed by network protocols that use a particular type of cryptography, and a blockchain record has been created for the public distribution ledger. In the year 2009, an unknown person or group of people released Bitcoin and produced the open-source software. The Bitcoin cryptocurrency is employed in the mining process, which is a method of remunerating users. Bitcoin was one of the first digital currencies to make use of peer-to-peer technology to allow for instant transactions. Individuals and businesses who hold the governing computational power and participate in the Bitcoin network are known as miners. Bitcoin miners are responsible for processing transactions on the blockchain and are rewarded with fresh Bitcoin and transaction fees paid in Bitcoin.

Table 3
Price of Ethereum from October 2022 to March 2022

Months	October	November	December	January	February	March
Price	4324.61	4444.53	3714.95	2610.18	2629.48	3383.79

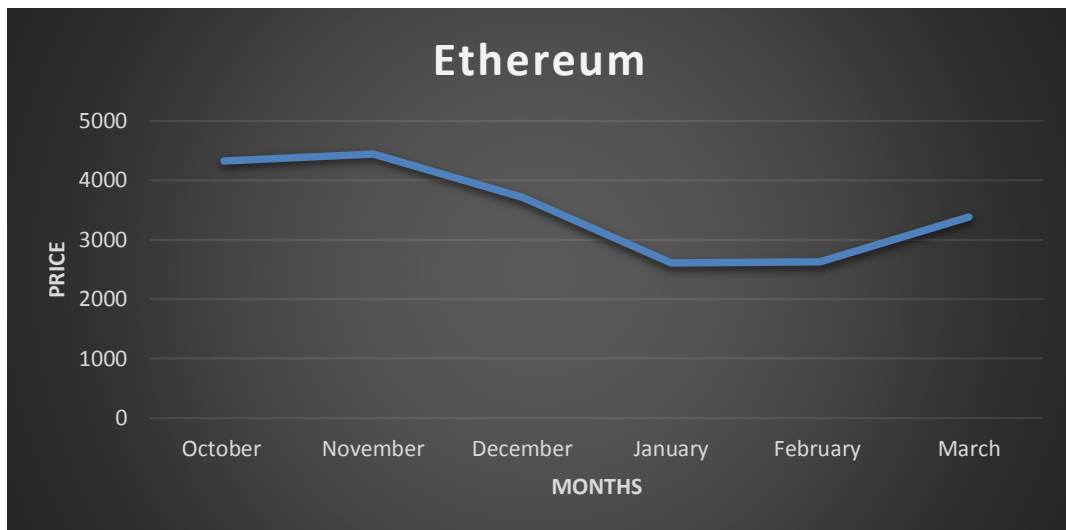


Figure 2: Price Fluctuation in Ethereum

Ethereum

Ethereum is a platform that supports ether as well as a network of decentralised apps, or dApps. Smart contracts, which emerged on the Ethereum platform, are an integral part of the network's functionality. Smart contracts and blockchain technology are used in many decentralised finance (DeFi) and other applications. In 2013, Vitalik Buterin, who is credited with inventing the Ethereum concept, released a white paper introducing Ethereum. Buterin and Joe Lubin, the founder of the blockchain software start-up ConsenSys, established the Ethereum platform in 2015. Beyond enabling safe virtual currency trade, Ethereum's founders were among the first to contemplate the entire potential of blockchain technology. Blockchain technology is being utilised to develop applications that go beyond just facilitating the use of a digital currency. Ethereum is the largest and most well-known open-ended decentralised software platform, having been launched in July 2015. Ethereum proposed that blockchain technology be used not only to maintain a decentralised payment network, but also to store computer code that could be utilised to power tamper-proof decentralised financial contracts and apps. The Ethereum network's currency, ether, powers Ethereum apps and contracts. Ethereum is a programmable blockchain that may be used for a variety of things, such as DeFi, smart contracts, and NFTs.

Table 4
Price of Tether from October 2022 to March 2022

Months	October	November	December	January	February	March
Price	1.00	0.999671	1.00	0.998582	0.999390	0.999742

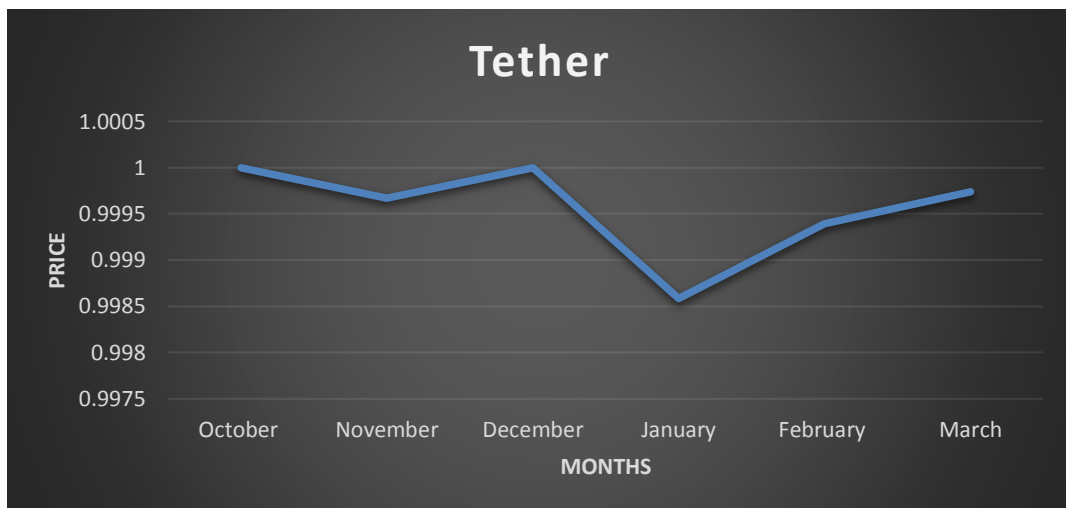


Figure 3: Price Fluctuation in Ethereum

Tether

Tether (USDT) is a stable coin with a price tied to \$1.00. It is a blockchain-based cryptocurrency whose tokens in circulation are backed by an equivalent quantity of US dollars. Tether was created with the goal of providing consumers with stability, transparency, and low transaction fees by bridging the gap between fiat currencies and cryptocurrencies. It is tied to the US dollar and maintains a value-to-value ratio of one-to-one with the US dollar. Tether began as RealCoin in July 2014 and was rebranded as Tether in November by Tether Ltd., the firm in charge of maintaining fiat currency reserve quantities. In February of 2015, it began trading. Tether is beneficial to cryptocurrency investors since it allows them to escape the high volatility of other cryptocurrencies. Additionally, using USDT (rather than the US dollar) eliminates transaction charges and delays that stymie trade execution in the crypto market.

Table 5
Comparative Prices Cryptocurrencies and the Fluctuations from October 2022 to March 2022

Months	October	November	December	January	February	March
Bitcoin	\$61837.26	57848.77	47191.87	37983.15	37803.59	47063.37
Ethereum	4324.61	4444.53	3714.95	2610.18	2629.48	3383.79
Tether	1.00	0.999671	1.00	0.998582	0.999390	0.999742

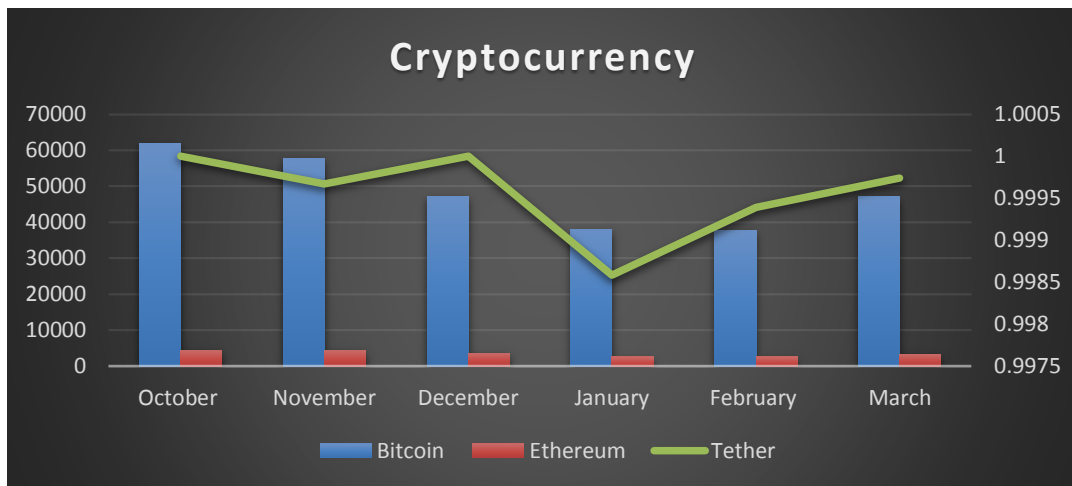


Figure 4: Comparative 6-Month Price Analysis

The figure 4 shows the fluctuations in the price of top three cryptocurrencies during considered six months. In comparison to bitcoin and Ethereum, tether has less fluctuations as can be seen from graphs. Two major phenomena have impacted cryptocurrencies which is reflected through the price fluctuations. An announcement made by the CEO of Tesla, Elon Musk of no further acceptance of Bitcoin as payment for its products. The reason put forwarded were the environmental worries over Bitcoin's mining process. This news has a profound impact on whole cryptocurrency market and Bitcoin and Ethereum were the most affected cryptocurrencies. The second one is blow from China. All of China's banks and financial institutions are prohibited from providing clients with any cryptocurrency-related services, including coin offerings and transactions. This has significant influence on the investment decisions of people in cryptocurrencies not only in India but in all over the world. New information in any market brings changes in the prices and volume of transactions. Crypto market is not untouched of that.

The slow rise in prices of the top three cryptocurrencies can be seen in a positive way. Jump Crypto Partner and DeFi Alliance Founding Partner Peter Johnson said that there will be favourable drivers for cryptocurrency in 2022. He believes that the macro inflationary backdrop is beneficial, and that the billions of dollars in cash poised to be deployed into crypto hedge funds will also help the crypto ecosystem move forward.

Table 6
Feature Comparison of Bitcoin vs Ethereum vs Tether

Basis	Bitcoin	Ethereum	Tether
Origin and Originator	2009, Satoshi Nakamoto	2013, Vitalik Buterin	2014, Brock Pierce, Reeve Collins and Craig Sellars
Symbols	₿, 	(Ξ)	₮

	BTC	ETH	USDT
Transaction Speed	The transaction speed of Bitcoin is 10 Minutes per transaction	The transaction speed of Ethereum is 5 Minutes per transaction	The transaction speed of Tether is 1 Minutes per transaction
Scalability	Bitcoin is able to generate a maximum of 4.6 transactions per second	Ethereum is capable of delivering double as that of Bitcoin, an approximate of 15 transactions per second	Tether is able to generate a maximum 10 transaction 1 minute
Circulating Supply	18,925,000	119 million	83 billion
Maximum Supply	21 million	No Upper Limit	82.73 billion

Source: (Ahmad and Hussain 2018)

Conclusion

As quoted by founder of Swedish pirate party Rick Falkvinge “Bitcoin will do to banks what email did to the postal industry” is the new view of crypto market. The inclination towards the investment in cryptocurrencies has been increased and people are more influenced with the blockchain mechanism with no regulating authority. It has experienced a setback due to COVID-19 which was as expected. The 2021 news crisis also impacted the crypto market with vivid fluctuations as shown in the study. Along with that the absence of regulating authority is concern for investors because their money is at stake with no single entity or person taking guarantee to pay back their money if things would not work. The tesla decision is also had a tacit aspect for not accepting bitcoin because there is no surety that they will be able to convert it in cash or not. Rising trend of investment in cryptocurrencies should not overlook the limitations imbibed in it. It can be concluded that investing decisions in cryptocurrencies should incorporate the risks involved and the security of the investors.

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