



# Bet on Blockchain

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## Motivation

Sports betting is a flourishing industry nowadays. All bets are controlled by some organizations, and so are the odds.

Not only do we need to pay them, but also they may be able to manipulate the bets. As a consequence, we propose a new, decentralized way of implementing the betting system by deploying it on blockchain.

## Implementation

Our project consists of a frontend, a backend, a database, and a contract on blockchain. The implementation and workflow are described in the figures on the figures below.

## Packages



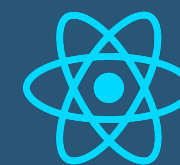
MetaMask

An add-on that allows developers run Ethereum DApp on browsers



Web3

A javascript module that can interact with smart contract



React

A powerful front-end framework



Ganache & Truffle

Softwares allowing us to run our own Ethereum blockchain

System Time: 2019-6-24 00:34:56

ID	Type	Team 1	Team 2	Score	Start Time	End Time	Result	Status
0	LoL	IG	TPA	19:130	2019-6-23 23:33:43	Not Ended Yet	Unknown	Ongoing
1	LoL	IG	TPA	16:176	2019-6-23 23:33:43	Not Ended Yet	Unknown	Ongoing
2	LoL	IG	TPA	18:186	2019-6-23 23:33:43	Not Ended Yet	Unknown	Ongoing
3	LoL	IG	TPA	17:161	2019-6-23 23:33:43	Not Ended Yet	Unknown	Ongoing
4	LoL	IG	TPA	19:195	2019-6-23 23:33:43	Not Ended Yet	Unknown	Ongoing
5	test	a	b	16:156	2019-6-23 23:37:59	Not Ended Yet	Unknown	Ongoing
6	test	a	b	2:23	2019-6-23 23:51:00	2019-6-23 23:51:31	b wins	End
7	test	a	b	2:22	2019-6-23 23:56:50	2019-6-23 23:57:14	a wins	End
8	test	a	b	2:26	2019-6-24 00:00:00	2019-6-24 00:00:40	b wins	End
9	test	A	B	2:25	2019-6-24 00:08:20	2019-6-24 00:08:48	B wins	End

add test tA tB 2019-6-25 00:00:00

Server listening on port 3001

Cli interface

Holdable Matches	Bettable Games	Ongoing Games	Ended Games
test	tA vs. tB		
LoL	IG vs. TPA		
Bet			
LoL	IG vs. TPA		

Choose a game to bet

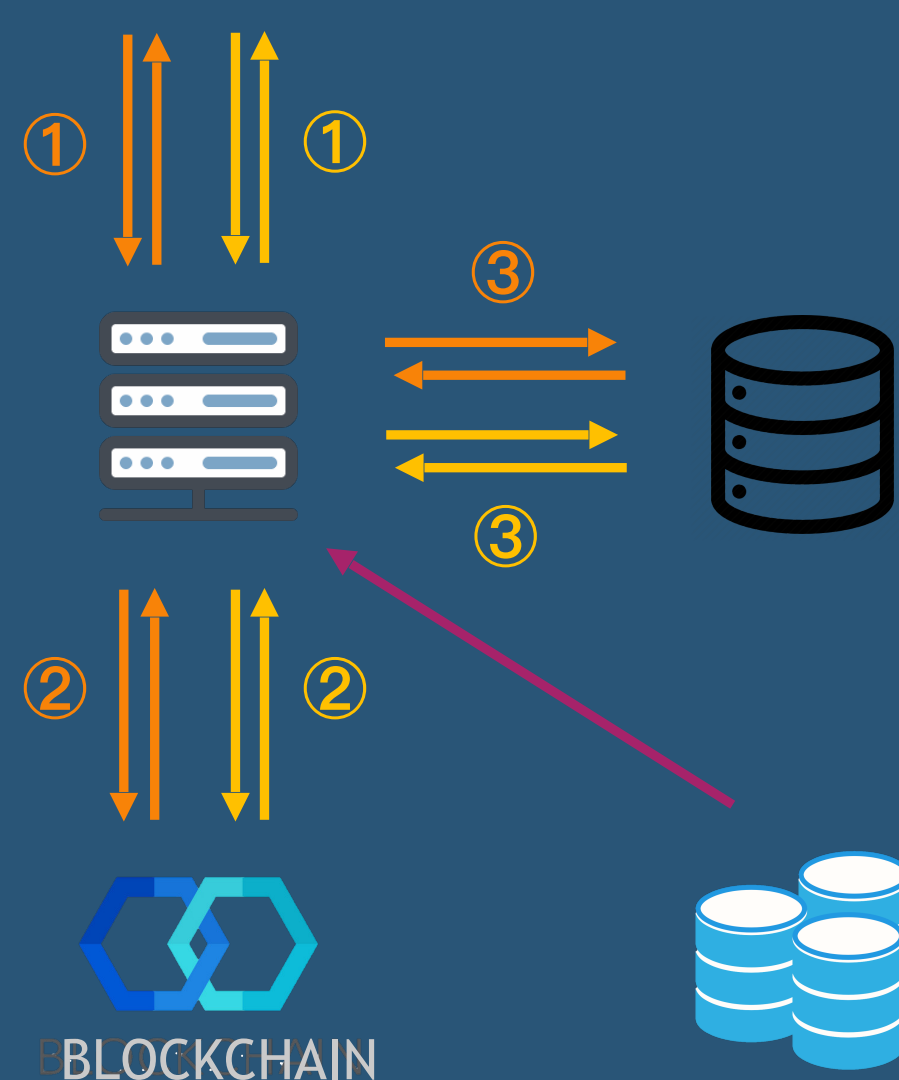
Holdable Matches	Bettable Games	Ongoing Games	Ended Games
LoL			
IG	TPA		
BET	14	I	

You bet!

- ① hold game request
- ② pass matchID to bc
- ③ store (matchID, gameId)

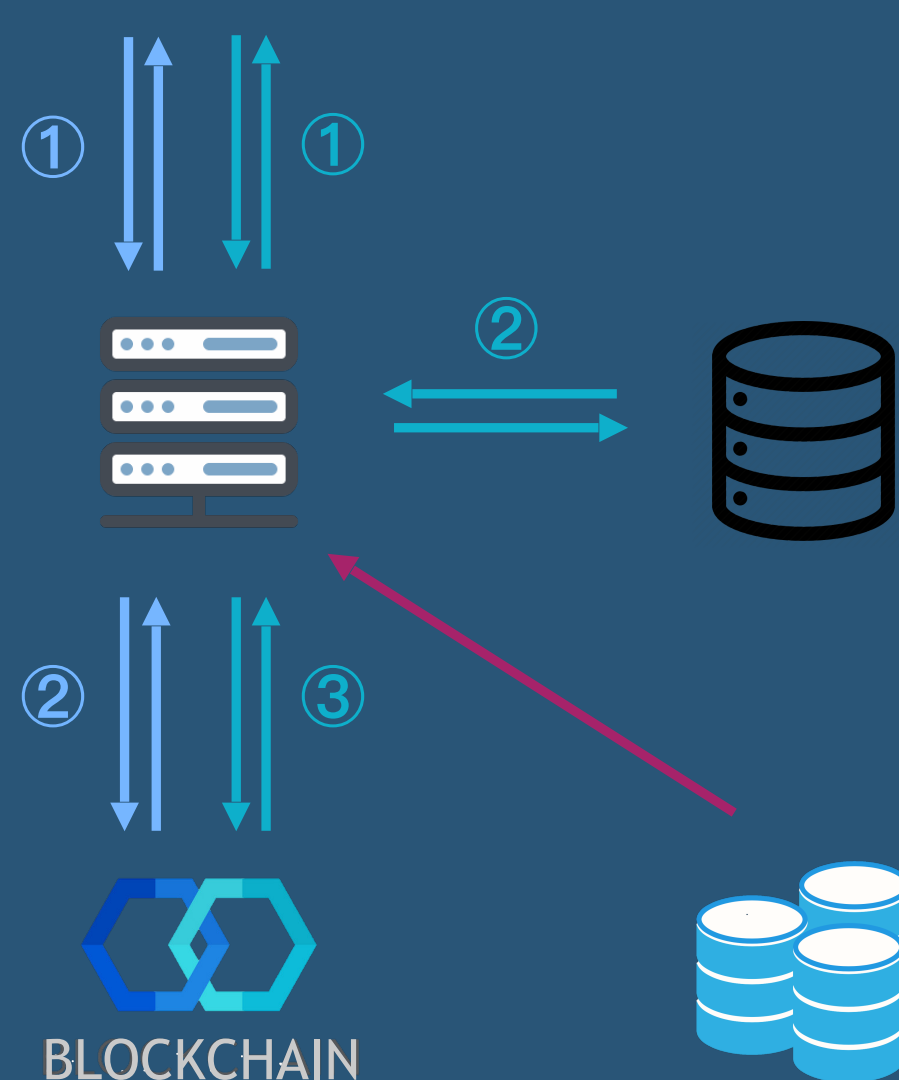


→ retrieve match data



- ① new bet
- ② pass bet info
- ③ store (gameID, betIdx)

- ① claim reward
- ② pass match info & pay reward



- ① request bet info
- ② get (gameID, betIdx)
- ③ view & return value in bc

Holdable Matches	Bettable Games	Ongoing Games	Ended Games
Hold			
LoL	IG vs. TPA		

Click to hold a bet

Holdable Matches	Bettable Games	Ongoing Games	Ended Games
LoL			
IG	TPA		
0	3		

Display real time game info

MetaMask Notification	
Account 2 → 0x7Ccf...4889	
合約互動	
10	
DETAILS DATA	
GAS FEE	0.002064 尚未有匯率比較值
AMOUNT + GAS FEE	
TOTAL	10.002064 尚未有匯率比較值
拒絕	確認

Confirm payment via MetaMask

## Future Works

There is still space for improvement for UI and web security. In addition, optimizing the contract is crucial to lower the cost. Also, aside from the original bet in this project, there are various types of bets waiting for implementation. We hope that they may be done in the future.