



# AlgoBet: a decentralized betting system

International school on Algorand Smart Contract, Group 5

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# Project definition

- Decentralized simple betting system powered by Algorand smart contracts
- Users can place bets on events according to a sport-like odd system (1X2), winners get a payout
  - Bet stake is fixed
- Event results are set by an *oracle account*
- PyTest suite and sandbox/testnet deployment

# Technical key points

- New Beaker use case
  - Adding documentation/use cases to a novel tool in Algorand ecosystem
- Oracle implementation
- Sandbox issues exploited
  - Proposing workarounds
- Standard methodology for testing and report generation
  - Adapting Beaker tests to standard PyTest tool

# Development stack

PyTeAL



Smart contract  
development



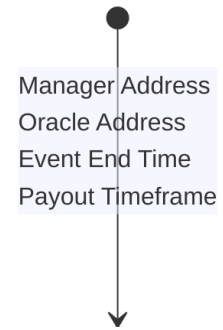
pytest

Testing and  
reports

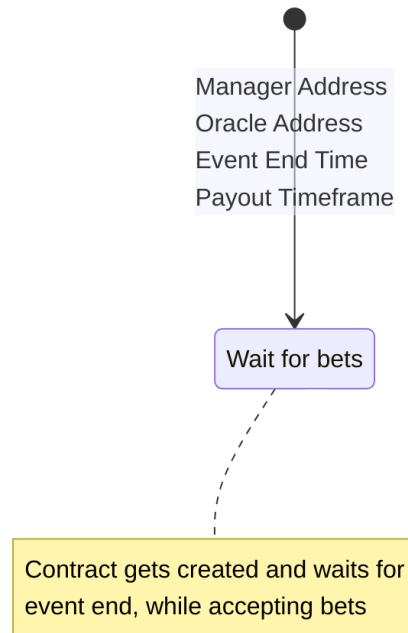
Algorand

Deployment

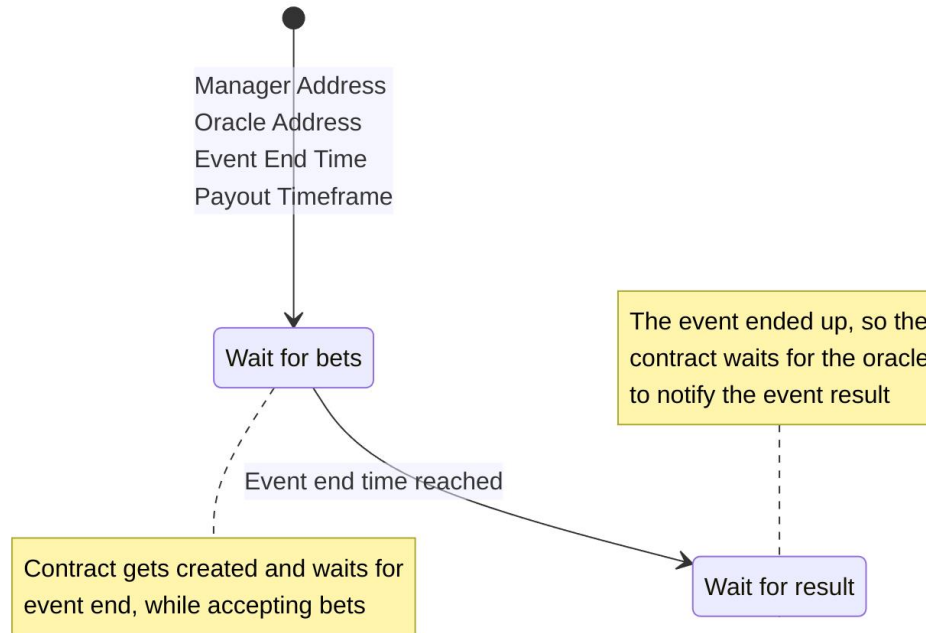
# Workflow



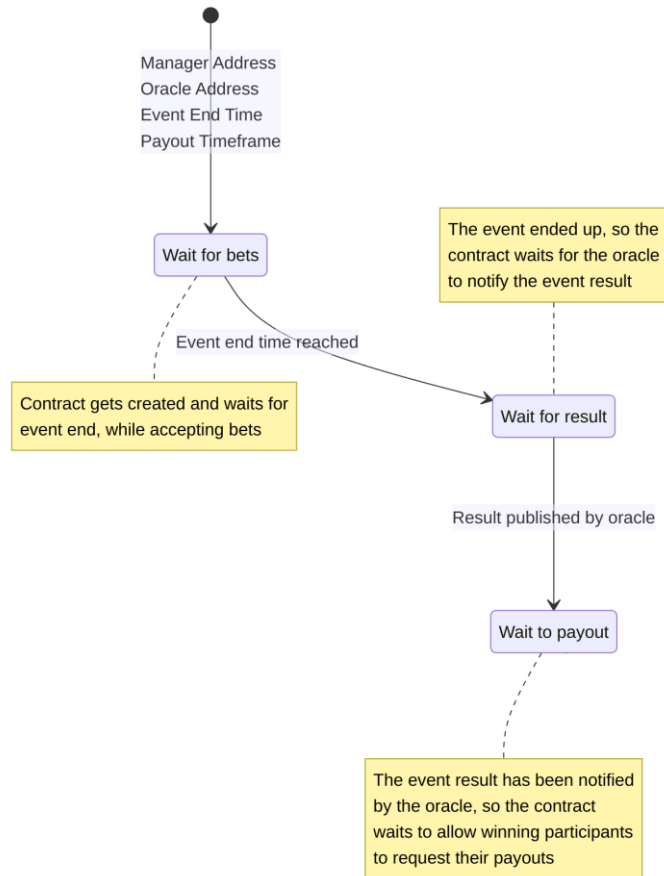
# Workflow



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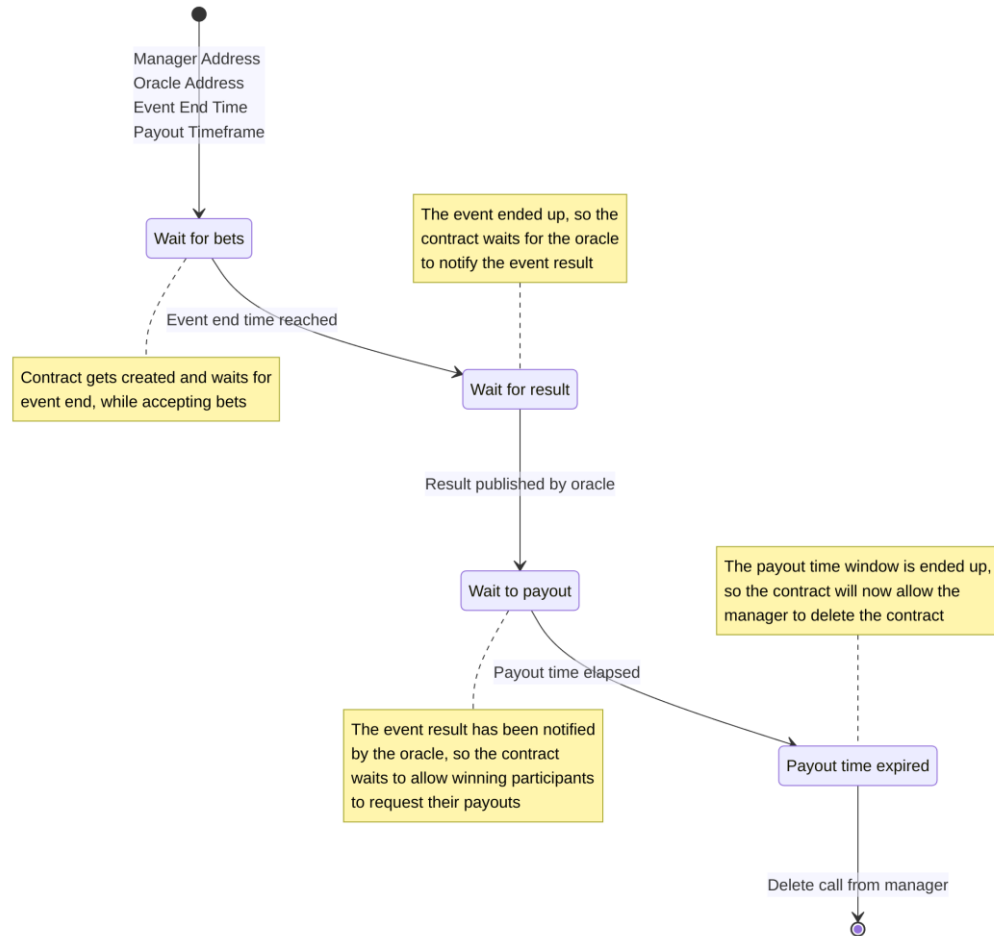


# Workflow





# Workflow



# Exposed transactions: *Create*

**create** Create an AlgoBet contract instance, bound to a particular event. ^

Method signature :

**create(address,address,uint64,uint64)void**

Txn count : 1

Method selector :

HEX

BASE64

**79bca08b**

## Arguments

Name	Type	Description
manager_addr	address	Address of the account to be set as manager.
oracle_addr	address	Address of the account to be set as oracle.
event_end_unix_timestamp	uint64	Unix timestamp of event end.
payout_time_window_s	uint64	Payout time interval, expressed in seconds.

# Exposed transactions: *Place\_bet*

**bet** Place a bet. ^

Method signature :  
**bet(uint64,pay)void**

Txn count : **2**

Method selector : HEX BASE64  
**524b57ce**

Arguments

Name	Type	Description
opt	uint64	Chosen option.
bet_deposit_tx	pay	Payment transaction of the bet deposit.

Returns: void

# Exposed transactions: *Set\_event\_result*

**set\_event\_result** Set the event result. Only the oracle account is authorized to request this transaction. ^

Method signature :

**set\_event\_result(uint64)void**

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Txn count : 1

---

Method selector : HEX BASE64

**fabd6f88**

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Arguments

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Name	Type	Description
opt	uint64	Winning option.

---

Returns: void

# Exposed transactions: *Payout*

**payout** Request the payout. Only works for winning participants. ^

Method signature :

**payout()void**

---

Txn count : **1**

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Method selector :

HEX BASE64

**ce706dd1**

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Arguments

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Name	Type	Description
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Returns: void

# Future works and improvements

- Parent contract implementation
- Customize bet stake
- Adding event beginning timestamp
- Real world oracle integration
- Refund mechanisms
- Hidden Bets

# Try it!



Dappflow

☰ Explorer

ABI Studio

Developer API

ARC Portal

Dispenser

Node Status

Settings

connected to : testnet-v1.0

HomeAccountsTransactionsAssetsApplications

Address / Transaction / Asset / Application

Account overview

View Raw JSON

R73SCK5BKU3TEP3ZBHV3LFWG56HPWGLDToFATAR75BHIXS256Y7OTHJ4EI

Offline

Balance1

Minimum balance0.1

Holding assets0

Created assets0

Created applications0

Opted applications0

TransactionsAssetsCreated assetsCreated applicationsOpted applications

Txn ID	Block	Age	From	To	Amount	Fee	Type
<a href="#">MQDBOYVMJETEL5...</a>	<a href="#">24878...</a>	18 seconds ago	<a href="#">OKDCQ7FEQP6VZBIPSU...</a>	<a href="#">R73SCK5BKU3TEP...</a>	1	0.001	Payment

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Thank you for your  
attention

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