

Online Casino





Baccarat



Baccarat 101



The dealer then deals out the cards face up—two each for the player and banker—and whichever hand totals closest to nine wins. If you've bet on the player hand and it has the closest to nine, the winnings are simply double what you bet.

In this case

Banker - 9

Player - 8

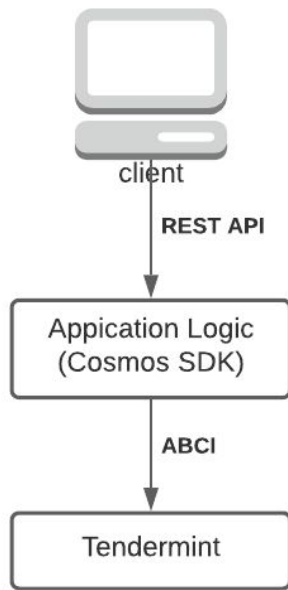
Player wins and users who bet on the banker's side get double of their bets!



Design & Implementation

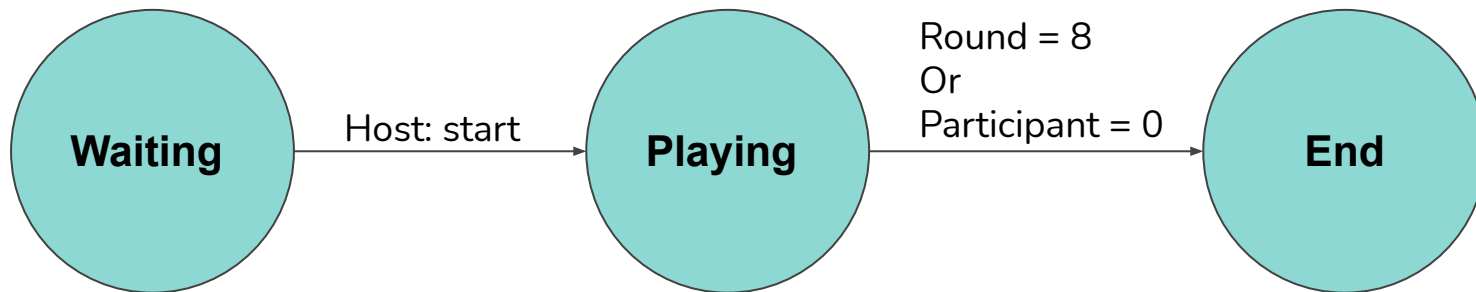


Architecture





GameState





Type Game

```
type Game struct {  
    Creator    sdk.AccAddress    `json:"creator" yaml:"creator"`  
    ID         string                `json:"id" yaml:"id"`  
    State      StateType          `json:"state" yaml:"state"`  
    Participant []sdk.AccAddress    `json:"participant"  
    yaml:"participant"`  
    ResultHash []string              `json:"resultHash" yaml:"resultHash"`  
    Bet         [][]Bet                `json:"bet" yaml:"bet"`  
    Result      []string              `json:"result" yaml:"result"`  
}
```



Type Game

```
type Game struct {  
    Creator    sdk.AccAddress    `json:"creator" yaml:"creator"`  
    ID         string                `json:"id" yaml:"id"`  
    State      StateType           `json:"state" yaml:"state"`  
    Participant []sdk.AccAddress    `json:"participant" yaml:"participant"`  
    Result      []string                 `json:"result" yaml:"result"`  
    ResultHash  []string                 `json:"resultHash" yaml:"resultHash"`  
    Bet         [][]Bet                  `json:"bet" yaml:"bet"`  
}
```

```
type Bet struct {  
    Creator sdk.AccAddress    `json:"creator" yaml:"creator"`  
    Side    BetSide              `json:"side" yaml:"side"`  
    Amount  sdk.Coins             `json:"amount" yaml:"amount"`  
}
```




Type User

```
type User struct {  
    Creator sdk.AccAddress `json:"creator" yaml:"creator"`  
    ID      string      `json:"id" yaml:"id"`  
    Name    string      `json:"name" yaml:"name"`  
    Addr    sdk.AccAddress `json:"addr" yaml:"addr"`  
}
```



Msg

MsgCreateGame - สร้างห้องใหม่

```
creator:      cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7
id:           dbf52458-9226-40b3-839b-f23e4dc7d8c1
state:        Waiting
participant:  [ "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7" ]
result:
resultHash:
bet:          [ null, null, null, null, null, null, null, null ]
```



Msg

MsgEditParticipant - เมื่อมีคน เข้า/ออก ห้อง

```
creator:      cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7
id:           dbf52458-9226-40b3-839b-f23e4dc7d8c1
state:        Waiting
participant:  [ "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7", "cosmos18x53thp24u5y9z7unfmdlgdj32p0th0kv5u8l5" ]
result:
resultHash:
bet:          [ null, null, null, null, null, null, null, null ]
```



Msg

MsgStartGame - Host กดเริ่มเกม

```
creator:      cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7
id:           dbf52458-9226-40b3-839b-f23e4dc7d8c1
state:        Playing
participant:   [ "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7", "cosmos18x53thp24u5y9z7unfmdlgdj
                 32p0th0kv5u8l5" ]
result:
resultHash:    [ "e8118afc1020f48ccfe5d3ebccf54f10e39d053caa15ebaf16e4dd5024ec2752" ]
bet:          [ null, null, null, null, null, null, null, null ]
```



Msg

MsgCreateBet - ผู้เล่นลงพนัน

```
creator:      cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7
id:           dbf52458-9226-40b3-839b-f23e4dc7d8c1
state:        Playing
participant:  [ "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7", "cosmos18x53thp24u5y9z7unfmdlgdj
32p0th0kv5u8l5" ]
result:
resultHash:   [ "e8118afc1020f48ccfe5d3ebccf54f10e39d053caa15ebaf16e4dd5024ec2752" ]
bet:          [ [ { "creator": "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7", "side": "Player", "amoun
t": [ { "denom": "token", "amount": "100" } ] } ] ], null, null, null, null, null, null ]
```



Msg

RevealResult - เมื่อ participant ทุกคน bet แล้ว (backend ทำอัตโนมัติ)

```
creator:      cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7
id:           dbf52458-9226-40b3-839b-f23e4dc7d8c1
state:        Playing
participant:   [ "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7", "cosmos18x53thp24u5y9z7unfmdlgdj
32p0th0kv5u8l5" ]
result:        [ "5C,4S;10D,2H" ]
resultHash:    [ "e8118afc1020f48ccfe5d3ebccf54f10e39d053caa15ebaf16e4dd5024ec2752", "38a76dc412
e47be9c5a01d76a36266ae14bd4eda6fb3ad3e08f62560bec09ad0" ]
bet:           [ [ { "creator": "cosmos1ng2805sczdqyz3c9enypllcryqx2jw5aczldv7", "side": "Player", "amoun
t": [ { "denom": "token", "amount": "100" } ] }, { "creator": "cosmos18x53thp24u5y9z7unfmdlgdj
32p0th0kv5u8l5", "side": "Banker", "amount": [ { "denom": "token", "amount": "123" } ] } ], null,
null, null, null, null, null ]
```



Verify result

Result

Winning Side: Player

Your Bet: Banker

Reward: -100

Random String: 332858400

Result Hash:

e34e475553cb3034c0aeacb48b9fac3f4d1fe4a6a19c2a34446e8c38f

participant: ["cosmos1jgre4f3tzv64

result: ["QC,10D;JC,1C"]

resultHash: ["e34e475553cb3034c

SHA256

SHA256 online hash function

QC,10D;JC,1C332858400

Input type

Hash

☒ Auto Update

e34e475553cb3034c0aeacb48b9fac3f4d1fe4a6a19c2a34446e8c38f5ee730f



Event based

Tendermint
Node

```
ctx.EventManager().EmitEvent(  
    sdk.NewEvent(  
        types.EventTypeUpdateGame,  
        sdk.NewAttribute(types.AttributeKeyGameID, msg.ID),  
    ),  
)
```

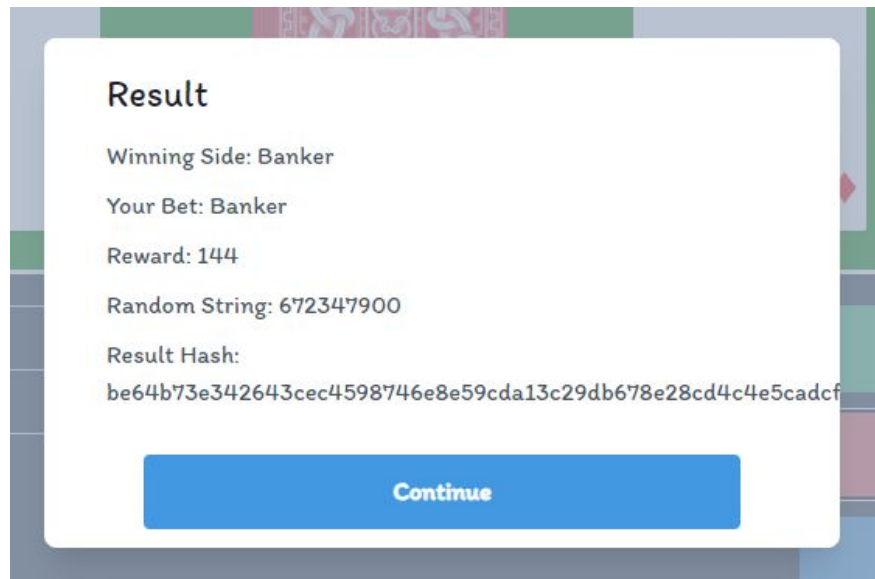
Frontend

```
this.rpcClient = RpcClient(process.env.VUE_APP_TENDERMINT_NODE);  
this.rpcClient.subscribe(  
    [`tm.event='Tx' AND updateGame.gameID =  
    '${this.$route.params.id}'`],  
    () => {  
        this.fetchGame();  
    }  
);
```




Event based

- **Update Game**
 - Game ID
- **Reveal Result**
 - Game ID
 - Winner
 - Address
 - Reward
 - Bet Side
 - Card
 - Random String
 - Result Hash





Demo