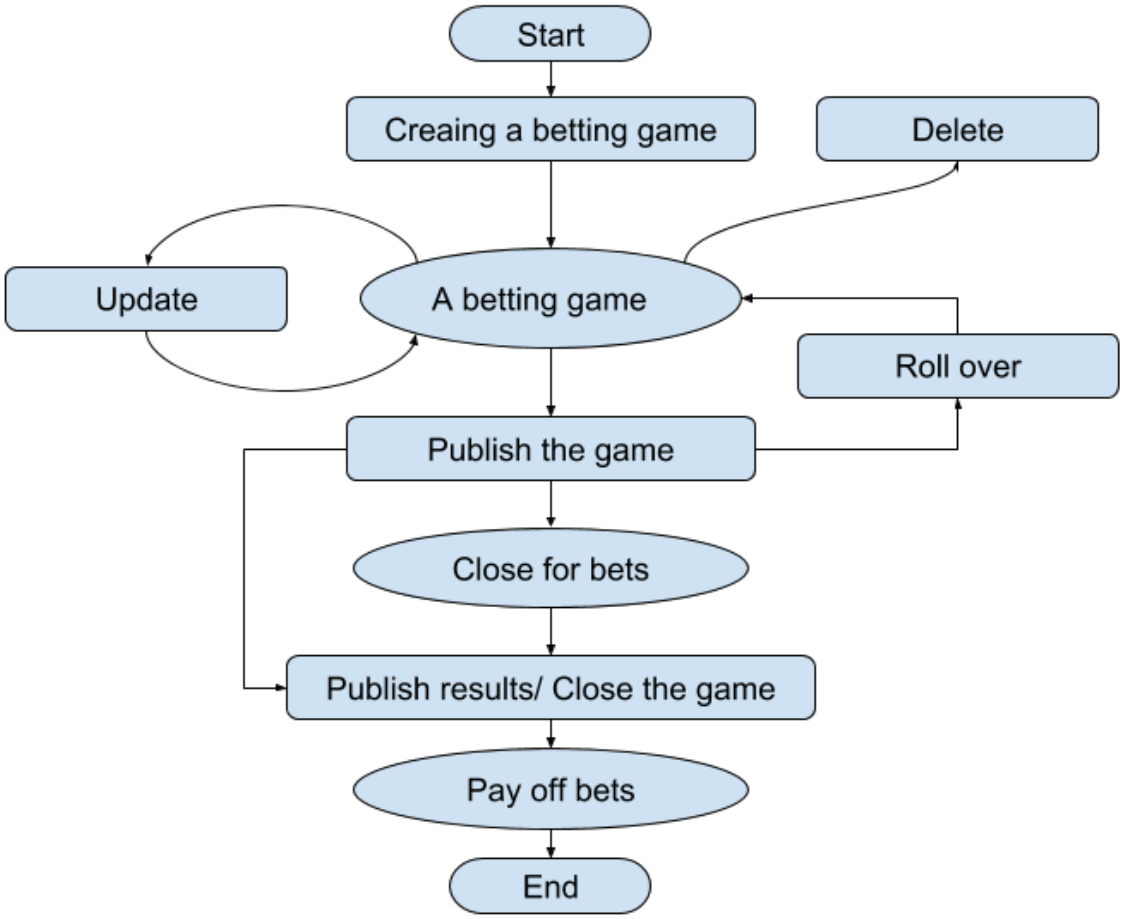
Business Logic

Disclaimer: The business logic described here has a loop hole. It assumes that the site has infinite credits;

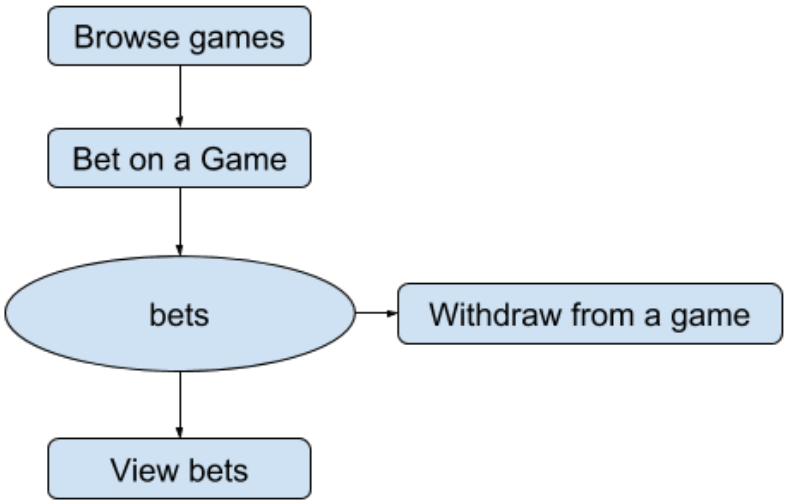
Disclaimer: The business logic described here is not complete;

Single Game Flow

For Administrators



For Common Users



Use-Case Based Flow

Current Design

Server Resonsibilities

The current design is that we only use `GET` and `POST`. If something is wrong, the server will respond with `“400 Bad Request”`. Otherwise the server will respond with `“200 OK”`. The detailed status is determined by the response body.

All API end points are started with *api/*. This document will omit this.

Server responses

The server should always respond with `ServerResponse`. the requested data is stored to data.

```
import "google/protobuf/any.proto";
message Error {
    enum ErrorCode {
        OK = 0;
        FOBBIDDEN = 1;
        UNAUTHORIZED = 2;
        NOT_FOUND = 3
        INVALID_DATA = 4;
    }
```

```
    ErrorCode error_code = 1;
    string error_message = 2;
}

message ServerResponse {
    Error error = 1;
    repeated google.protobuf.Any data = 2;
}
```

Things in Common

1. If a non-admin user tries to do admin's actions, the server should reject it and the `error_code` should be set to `FORBIDDEN`;
2. If an unauthorized user tries to do sensitive operation, the server should reject it and the `error_code` should be set to `UNAUTHORIZED`;
3. if a resource can not be found, the `error_code` should be set to `Not_FOUND`;
4. If the request data is invalid, the `error_code` should be set to `INVALID_DATA`;

Administrators

Creating/Updating Games

URL: games/create_or_update

HTTP Verb: POST

Protobuf:

```
// common
message BettingOption {
    int32 id = 1;
    float odds = 2;
    string name = 3;
}

// request
message GameRequest {
    int32 id = 1;
    string name = 2;
    string description = 3;
    uint32 max_bet_options = 4;
    int32 bet_min = 5;
    int32 bet_max = 6;
    string endtime_for_bet = 7;
    repeated BettingOption betting_options = 8;
}

// response
message Game {
```

```
    int32 id = 1;
    string name = 2;
    string description = 3;
    uint32 max_bet_options = 4;

    enum Status {
        DRAFT = 0;
        PUBLISHED = 1;
    }

    Status status = 5;
    int32 bet_min = 6;
    int32 bet_max = 7;
    string endtime_for_bet = 8;
    repeated BettingOption betting_options = 9;
    int32 winningoption_id = 10;
    uint32 enrolled = 11;
}
```

Details:

1. Set `id` field of `GameRequest` to `-1` to create a game. Otherwise the server will modify existing games;
2. All fields of the `GameRequest` are required;
3. `name` and `odds` of `BettingOption` must come in pairs;
4. When creating a `Game`, `BettingOption` of the `GameRequest` must not contain the `id` field;
5. `max_bet_options` must be smaller than the number of `BettingOption`
6. When updating a `BettingOption` of an existing `Game`, the `id` field must be supplied with other fields;
7. When adding a `BettingOption` to an existing `Game`, the `id` field must not be set to -1;
8. When removing a `BettingOption` from an existing `Game`, the `id` field must be supplied and the `odds` must be set to `0`;
9. Only `DRAFT` `Game` can be updated. The `error_code` should be set to `FORBIDDEN` when admin tries to update `Game` with `PUBLISHED` status;

Reading Games

URL: games/

HTTP Verb: GET

Details:

1. Current implementation get all games at one request;

Deleting Games

URL: games/delete/

HTTP Verb: POST

Protobuf:

```
message SingleEntryRequest {
    int32 id = 1;
}
```

Details:

1. The server should delete related `BettingOption`;
2. Only `DRAFT` `Game` can be deleted. The `error_code` should be set to `FORBIDDEN` when admin tries to delete `Game` with `PUBLISHED` status;

Publishing Games

URL: games/publish/

HTTP Verb: POST

Protobuf: the same as deleting games

Rolling Back Games

URL: games/rollback/

HTTP Verb: POST

Protobuf: the same as deleting games

Details:

1. The server should immediately change the `Game` status to `DRAFT` and notify the background worker to rollback all bets;

Publishing Result/ Closing Games

URL: games/settle

HTTP Verb: POST

Protobuf:

```
message GameSettleRequest {
    int32 id = 1;
    int32 winning_option_id = 2;
}

// Response: the same as creating the game
```

Details:

1. The server should notify the background worker to pay off all bets;

2. Set the `winning_option_id` to `-1` to close the game. Otherwise the `winning_option_id` must be valid;

Reading Bets

URL: bets/

HTTP Verb: GET

Protobuf:

```
// response
message BetAdmin {
    int32 id = 1;
    int32 user_id = 2;
    int32 betting_option_id = 3;
    int32 betted = 4;
    string created = 5;
    int32 earning = 6;
}
```

Details:

1. the mechanism is the same as reading the games

Common Users

Reading Games

URL: games/

HTTP Verb: GET

Details:

1. The server should reject common users accessing `DRAFT` games;

Betting on Games

URL: bets/bet

HTTP Verb: POST

Protobuf:

```
// request
message BetRequest {
    int32 betting_option_id = 1;
    int32 betted = 2;
}

// response
message Bet {
    int32 id = 1;
    int32 betting_option_id = 2;
    int32 betted = 3;
    string created = 4;
}
```

1. Server should first check the `endtime_for_bet`. If the time has passed, the server should reject bets;
2. Users must have sufficient credits;
3. betted credits must be in the range from `bet_min` and `bet_max`;
4. Server should update related counters;

Reading All unsettled Bets

URL: bets/unsettled

HTTP Verb: GET

Protobuf: the same as betting on games

Details:

1. Users can only accessing their own bets;
2. Current implementation returns all bets of the user;