Otterssey

- A turn-based board game where players connect towns to complete their given routes by buying available paths on the board

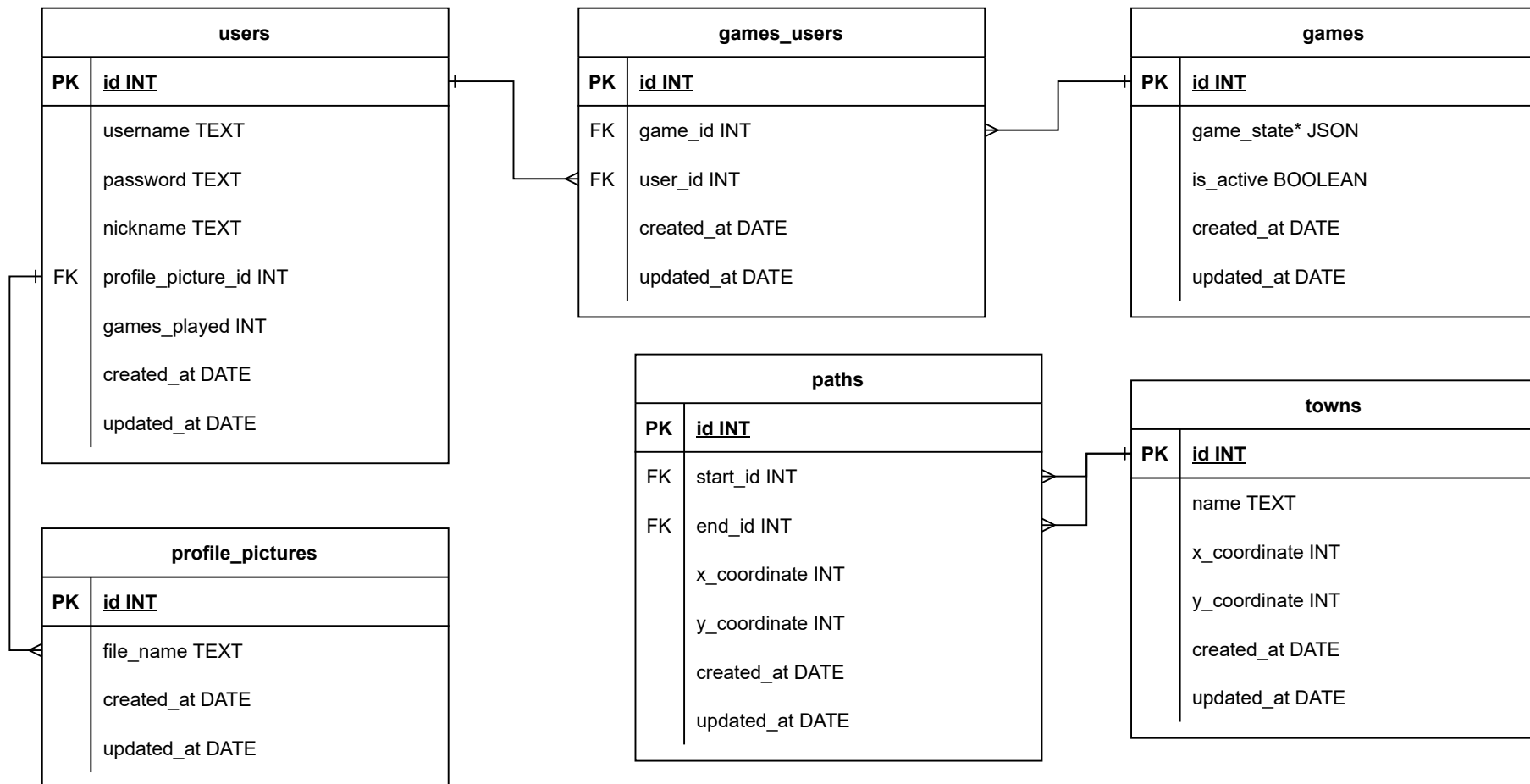- Inspired by board game Ticket to Ride, with a Singapore twist

Routes (for base)

Route	Type	Description	Page to render/redirect to
/	GET	Landing page with log in/sign up form, gameplay page and profile	render home.ejs
/login	POST	Check input fields and create log in cookies	redirect to /
/signup	POST	Create new user	redirect to /
/logout	DELETE	Clear logged in cookies	redirect to /
/profile/:id	GET	Check auth and id, show user profile	render profile.ejs
/profile/:id	PUT	Edit user profile	redirect to /profile/:id
/game	GET	Gameplay page	render game.ejs
/games	POST	Create new game	
/games/:id/draw	PUT	Draw 2 item cards from deck into player hand	
/games/:id/buy/:path	PUT	Buy path	

Features by Milestones

-		Prototype	Base	Comfortable	More Comfortable
# of Players		Single player, no log in	Single player, with log in and user	Multiplayer (up to 6), join with game ID	Same as comfortable; implement game lobby
Board		5 towns, paths have no specific	15 towns, paths of specific type	30 towns, paths of specific type and length	Cities vary slightly every game
Item Cards		3 types (10 of each type), draw from deck (2 each time)	5 types (30 of each type) + Joker (10), draw from deck (2 each time)	Same as base; can draw from deck OR from floor (first 4 cards of deck kept open)	-
Route Cards		Visually present but no function yet	Long route - >3 paths / Short route: 2-3 paths Show when route card is completed	Same as base; can draw more route cards if needed	-
Game Mechanics	Start	Starts with 2 route cards and 5 item cards	Starts with 3 route cards (2 short, 1 long) and 5 item cards	-	-
	Every turn	Draw 2 item cards OR Discard 3 item cards of the same type to buy a path	Draw 2 item cards OR Discard item cards of specific type to buy respective path	Same as base; Number of item cards discarded must tally with length of path to buy	Certain special paths need at least 1 joker to be discarded
	End	No end	Ends if all route cards are fulfilled	Tabulate points after game ends (after a player builds X number of paths)	-
Landing Page		-	Simple page with log in/sign up form, gameplay page and profile	(Work on CSS of landing page)	-
Other Features		-	-	In-game chat, Email confirmation at registration	Lobby chat, add friends

ERD (for base).

users

PK	id INT
	username TEXT
	password TEXT
	nickname TEXT
FK	profile_picture_id INT
	games_played INT
	created_at DATE
	updated_at DATE

games_users

PK	id INT
FK	game_id INT
FK	user_id INT
	created_at DATE
	updated_at DATE

games

PK	id INT
	game_state* JSON
	is_active BOOLEAN
	created_at DATE
	updated_at DATE

profile_pictures

PK	id INT
	file_name TEXT
	created_at DATE
	updated_at DATE

paths

PK	id INT
FK	start_id INT
FK	end_id INT
	x_coordinate INT
	y_coordinate INT
	created_at DATE
	updated_at DATE

towns

PK	id INT
	name TEXT
	x_coordinate INT
	y_coordinate INT
	created_at DATE
	updated_at DATE

*game_state will include the following:
 - **mapBoard**: instance of Map class (Graph data structure containing adjacency list of all towns on board)
 - **playerBoard**: instance of Map class (Graph data structure with empty adjacency list, will be filled up as player buys paths)
 - **itemDeck**: array of item card objects[#]
 - **shortRouteDeck**: array of short route card objects[^]
 - **longRouteDeck**: array of long route card objects[^]
 - **playerItems**: array of item card objects[#]
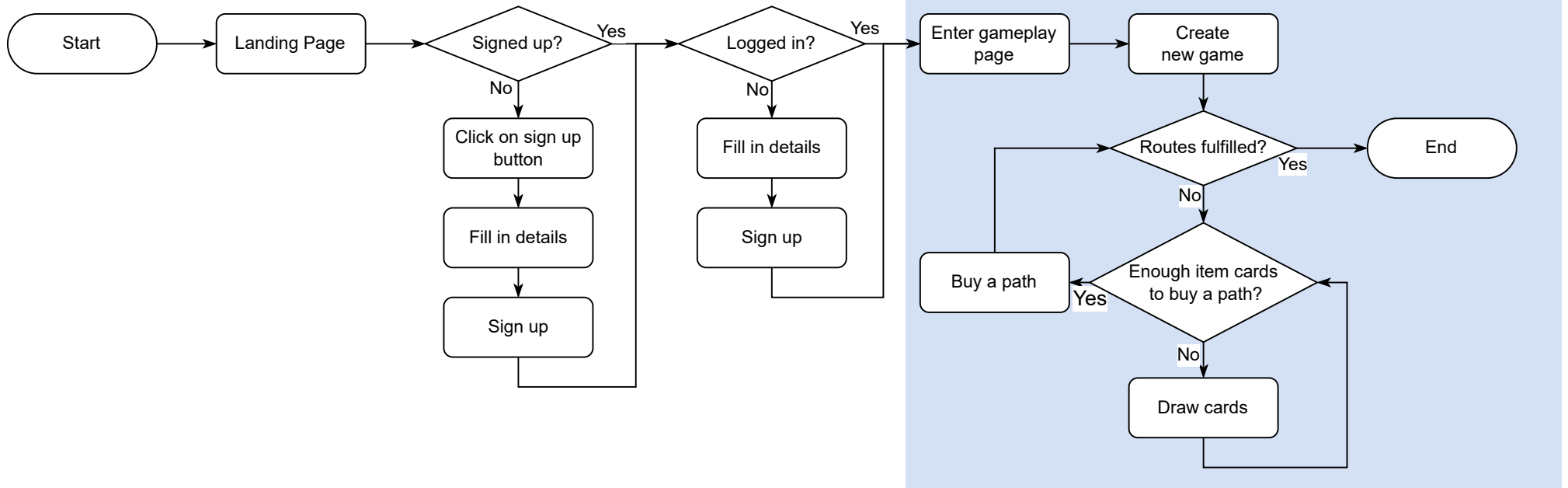 - **playerRoutes**: array of short and long card objects[^]

[#]Item card object:
 - **id**: unique id of card
 - **type**: colour of card/corresponding path

[^]Route card object:
 - **start**: name of town where route starts
 - **end**: name of town where route ends

User Flow Diagram

```
Start → Landing Page → Signed up? --Yes--> Logged in? --Yes--> Enter gameplay page → Create new game
                          |No                   |No
                          ↓                     ↓
                    Click on sign up       Fill in details
                        button                  ↓
                          ↓                   Sign up
                    Fill in details
                          ↓
                        Sign up
```

Main Gameplay

```
Create new game → Routes fulfilled? --Yes--> End
                        |No
                        ↓
Buy a path <--Yes-- Enough item cards to buy a path?
                        |No
                        ↓
                    Draw cards
```

Wireframes

home.ejs

○○◯

Otterssey   About Sign Up Log In [Play]

Welcome to Otterssey!

(Description of game)

Sign Up

Username

Password

Sign Up

Footer

game.ejs

○○◯

Exit

Draw

Board

Town A -> Town B
Town B -> Town C
Town C -> Town D