Pinball Wizard

Jacob Beasley Jonathan Buck Alex Boots Micah Erb Jeddy Waldon

BORED? MEET THE WIZARD

FIND NEW MACHINES

CONNECT GLOBALLY

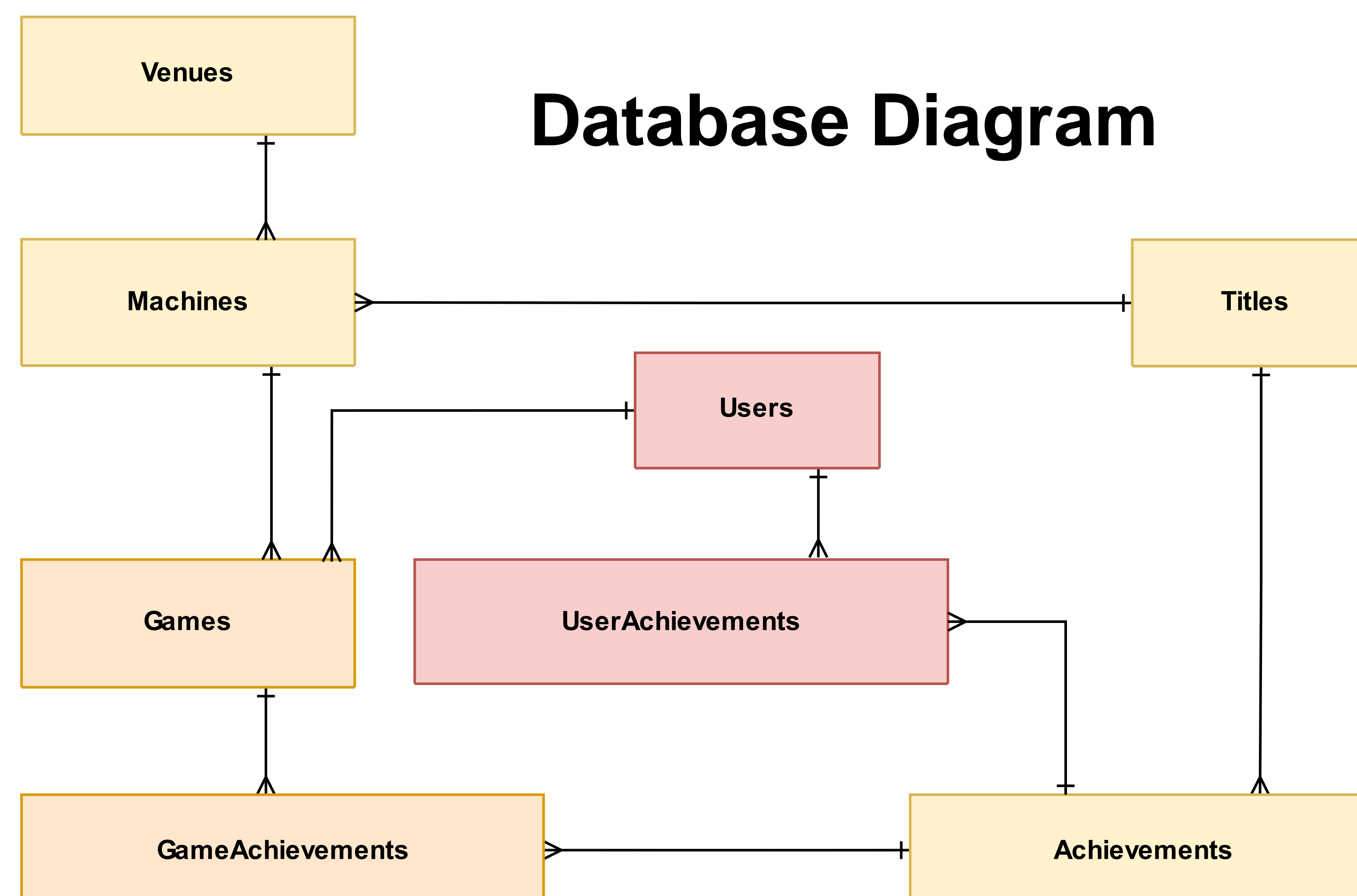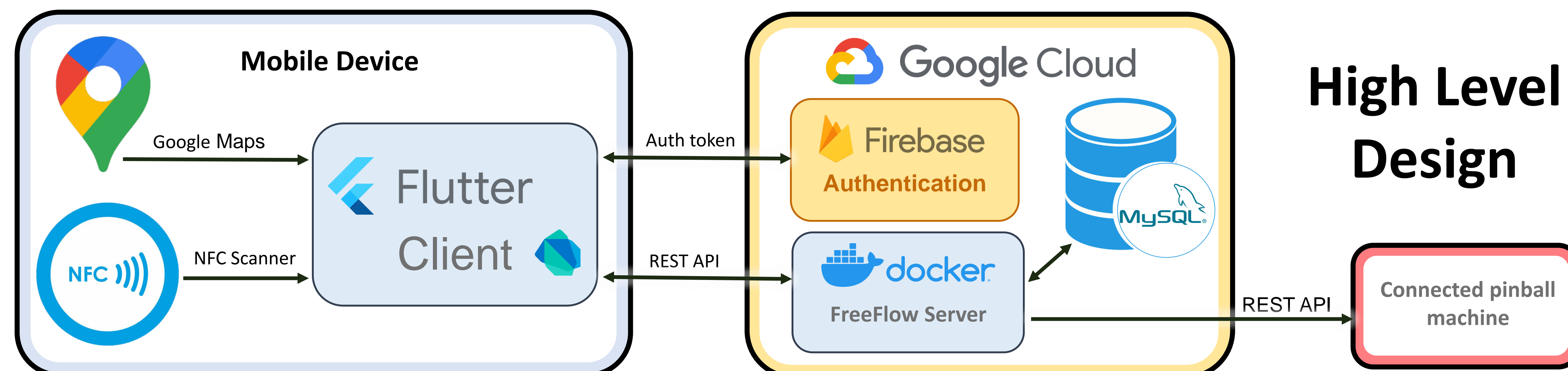PLAY AND SHOW OFF YOUR SKILLS
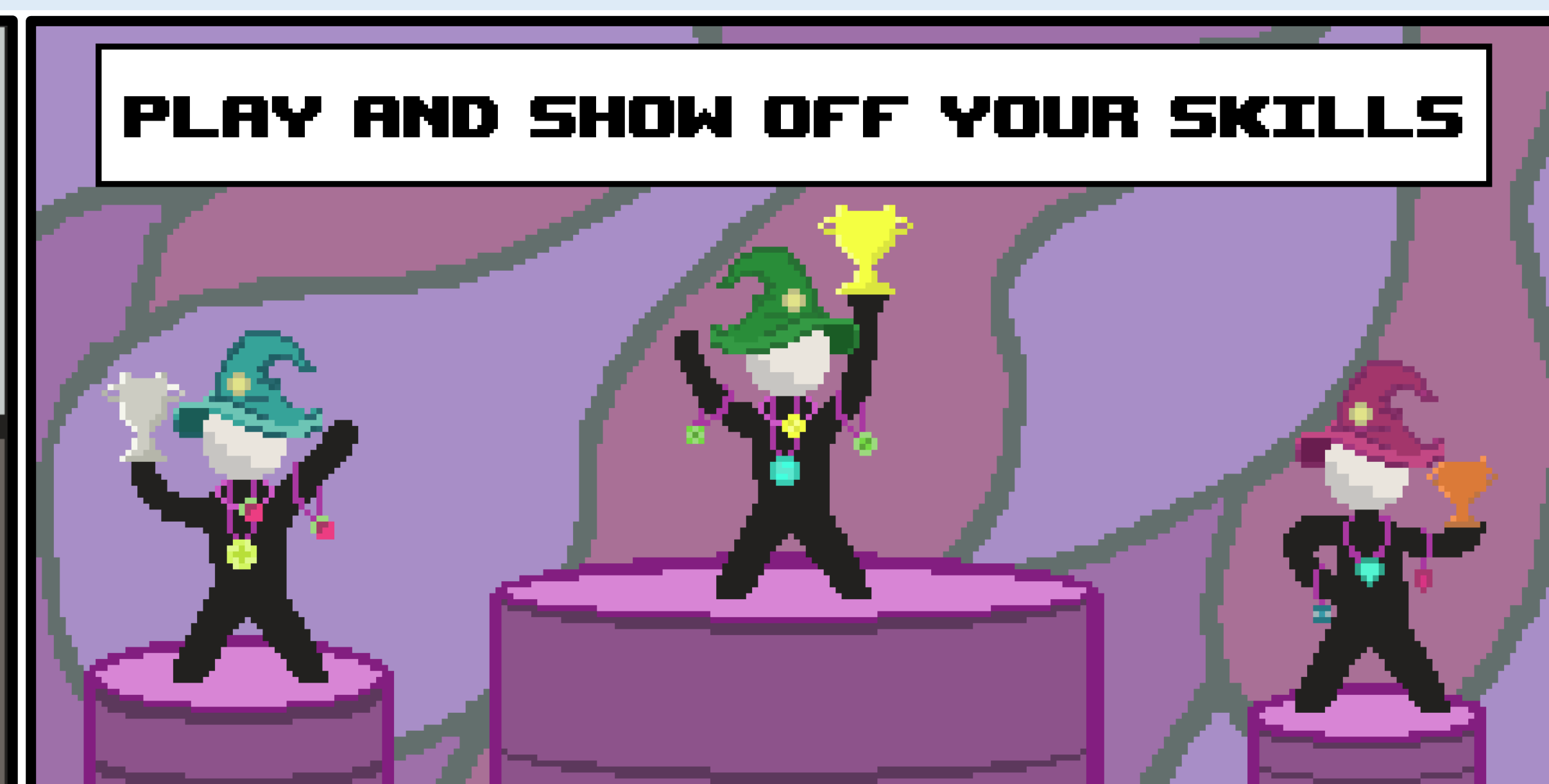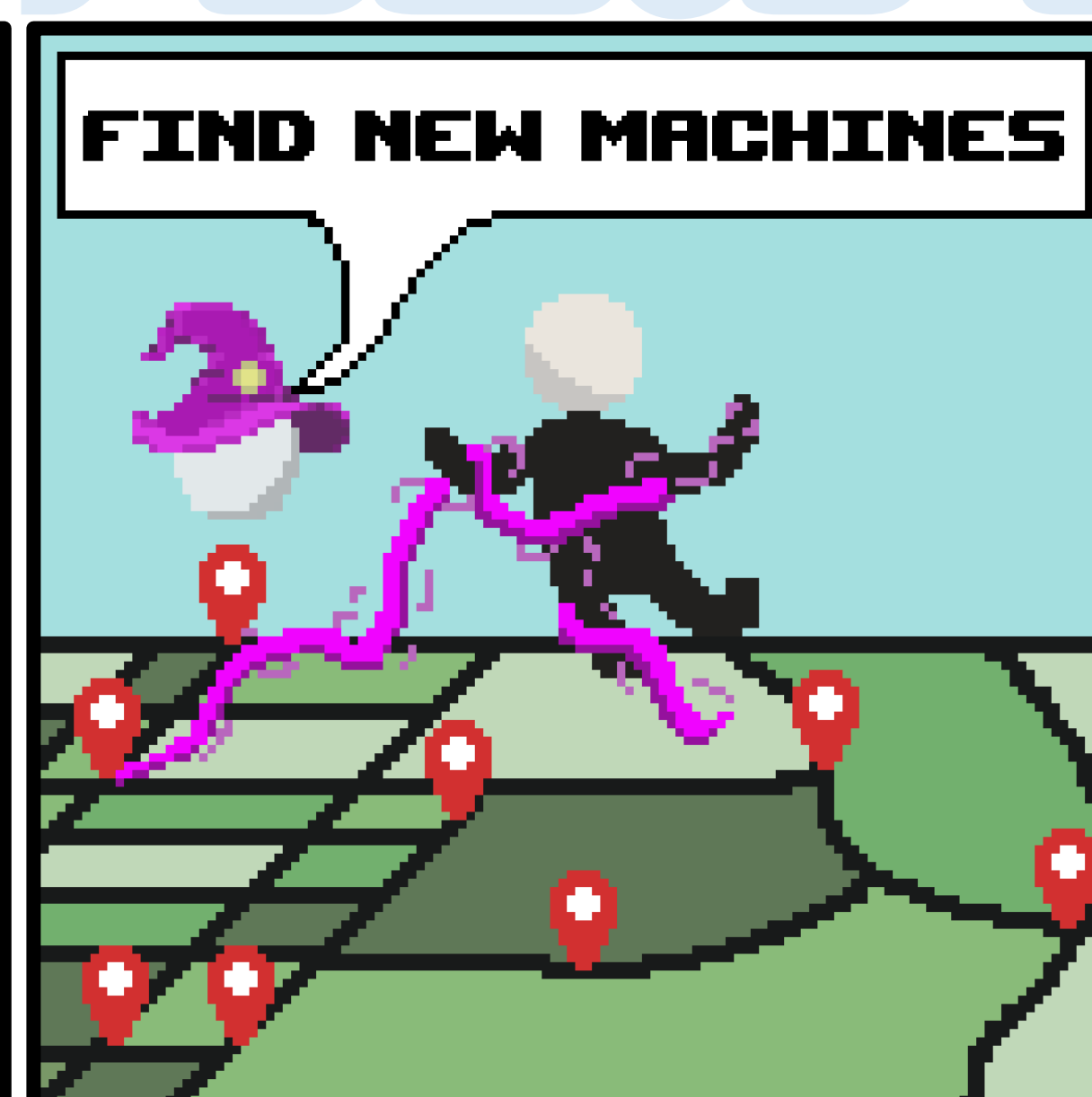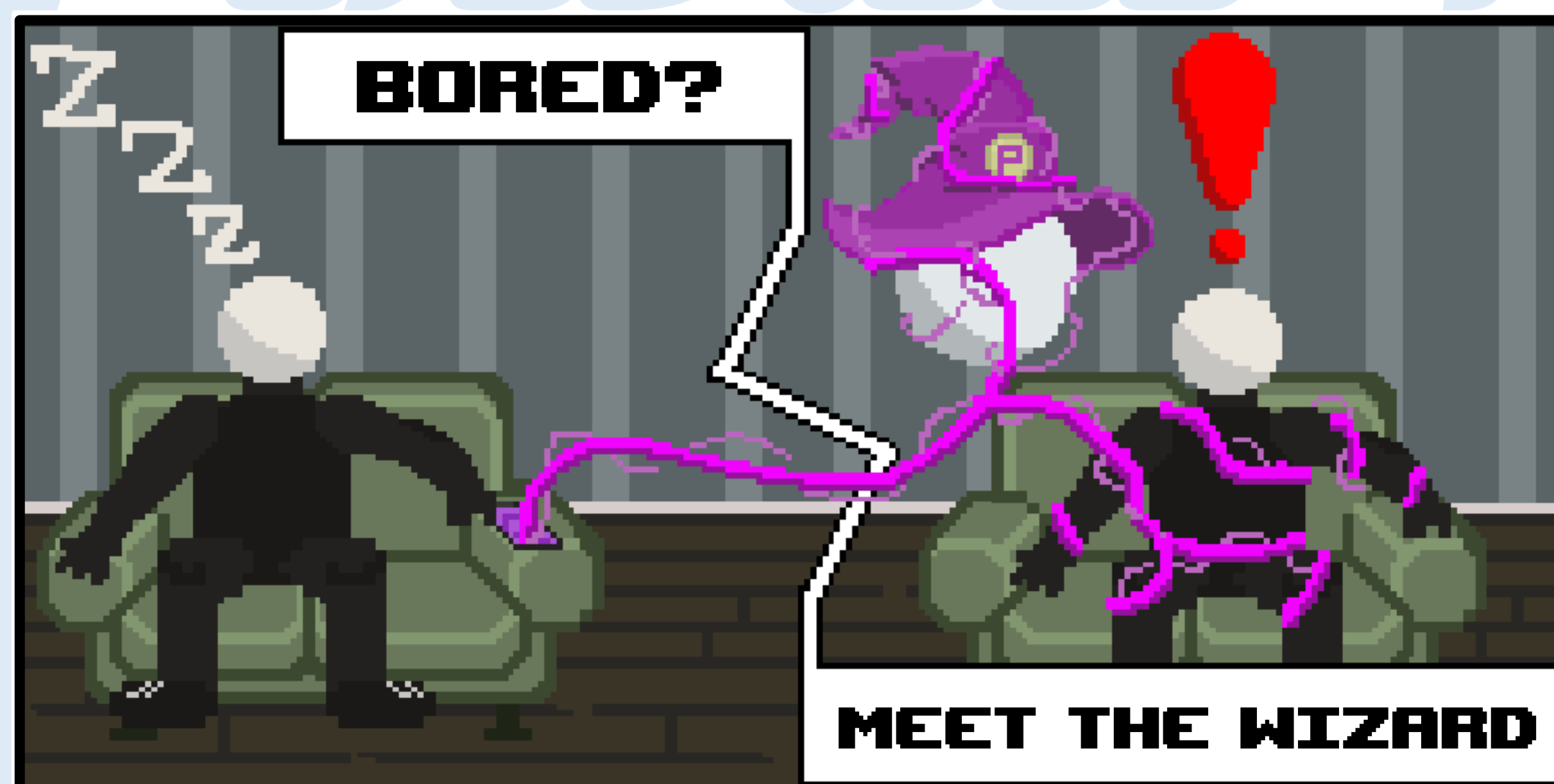
Sponsor: CJ Saretto

- NCSU Alum and Alumni Hall of Famer
- Started FreeFlow Networks to explore passion projects
- Pinball enthusiast

Background

- New machines in breweries and 'barcades'
- Finding specific titles takes local knowledge
- Ecosystem not approachable to newcomers
- Pinball market resurgence means new users
- Machine leaderboards are inherently local

Project Goals

- **Map:** to find pinball machines in a local area
- **Tap:** a machine's NFC chip to connect a game
- **Record:** scores and achievements from a game
- **Profile:** to show user's achievements and levels
- **History:** of users' previous games and scores
- **Leaderboards:** for global and local competition

High Level Design

Mobile Device — Google Maps → Flutter Client ← Auth token — Google Cloud — Firebase Authentication — MySQL — docker FreeFlow Server — REST API → Connected pinball machine — NFC Scanner

Database Diagram

Venues — Machines — Titles — Users — UserAchievements — Games — GameAchievements — Achievements

Testing

JUnit 5
96% Coverage

Flutter
60% Coverage

Integration Tests
20/20 Tests Passed

Black Box Tests
12/12 Tests Passed

Usability (n = 3)
Larger button size
Contextual prompts
Improved headers