COMP 3004 - Deliverable #1 - Project Proposal

`Brackit` - Mobile Tournament Bracket Creation

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Metadata

Team / App Name: `Brackit`

Team member names

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What is our project?

- `Brackit` is a tournament management and attendee platform for mobile.
- Primary focus: tournament organizers and the competitors that attend tournaments.
- `Brackit` is agnostic to the type of competition that is taking place.
- Tournament organizers can seed (rank competitors) and manage their double elimination tournament brackets on their mobile devices.
- Competitors can create their own user profiles to track their tournament history and stats.

Why is it interesting?

- Current tournament management services (e.g. `challonge`) do not offer mobile platforms, and navigating these platforms on mobile is unwieldy.
- `challonge` does not record comprehensive tournament histories:
  - tournament organizers enter competitors as a string corresponding to their team name or tag.
  - as a result, competitors can't enter brackets using a profile that tracks their history and statistics.
- `Brackit` allows competitors to evaluate their performance across tournaments in a new way by gaining access to their track record against past opponents.

As experienced tournament organizers, we've experienced firsthand the frustration stemming from the fact that competitors have limited access to information during a tournament. `Brackit` proposes to fix these problems by enabling players to interact with the tournament bracket on their phones.
As competitors, we've spent countless hours tabulating historical data from tournaments to get an idea of past results. `Brackit` solves this problem by centralizing tournaments' data collection on one platform.

Why does this project make sense in a mobile form factor?

Traditionally the only person with information about the ongoing tournament is the tournament organizer, who usually has a laptop or a tablet that every attendee crowds around to see who they have to play against.
`Brackit` allows players full access to the bracket in the palm of their hands.

Types of Users

1. Tournament organizers (TOs)
2. Tournament competitors
3. Spectators (Registered `Brackit` users that are neither 1. or 2.)
4. Guest Users (Unregistered `Brackit` users that are neither 1. or 2.)

Functional Requirements (FR)

1. ***Bracket Generation/Maintenance***
   - 1.1. TOs can create joinable double elimination brackets
   - 1.2. Entrants can use system to enter joinable double elimination brackets
   - 1.3. Given a seeded list of entrants, output a correct double elimination bracket
   - 1.4. TOs can access a setup screen where they seed (rank) the entrants dynamically and can view a preview of the bracket as seeded, then confirm the final active bracket
     - 1.4.1. If output of system is not accepted, TOs can reseed entrants
2. ***Profile Creation/Maintenance***
   - 2.1. Competitors and Organizers can create profiles which keep a history of:
     - 2.1.1. tournaments entered and created, placement history
     - 2.1.2. number of matches won/lost
     - 2.1.3. overall matchups against opponents
     - 2.1.4. additional user profile information
   - 2.2. The system supports both user profiles and competitors who haven't created a profile (Guest Users)
3. ***Data Input/Processing***
   - 3.1. Tournament organizers can enter tournament results in active brackets
   - 3.2. Use dynamic tournament results to render Losers brackets and subsequent Winners rounds during competitions in real time
4. ***Brackit Visualization***
   - 4.1. Users can access multiple views of brackets:
     - 4.1.1. Winners / Losers brackets
     - 4.1.2. Specific bracket rounds
   - 4.2. Users can click on competitors in rounds to view their profile

Non-Functional Requirements (NFR)

1. ***Useability***: `Brackit's` main selling point - current platforms are simply not usable on mobile devices.
   - 1.1. Users can clearly view and understand bracket structure and competitors' placement within brackets
   - 1.2. Visually coherent mobile representation of a double elimination bracket
   - 1.3. Seamless competitor entry (by TOs) to brackets in the setup phase
2. ***Screen Adaption***
   - 2.1. Users able to visualize brackets in portrait and landscape modes
3. ***Development Environment(s)*** **and Version Control**

3.1. Android Studio
3.2. Visual Studio Code
3.3. GitHub

4. ***Languages/Frameworks***

4.1. React-Native
4.2. Python

5. ***Platform***

5.1. Android

6. ***Development Process***

6.1. Agile

Detailed User Scenarios

1. Tournament organizer is hosting a tournament and wants to enter 14 people into a bracket

1.1. TO presses `Create bracket` Button (FR 1.1.)
1.2. TO specifies number of competitors
1.3. 14 Entrants join newly created bracket (See User Scenario 3) (FR 1.2.)
1.4. TO seeds (ranks) entrants
1.5. TO submits seeded list of entrants
1.6. Valid seeded double-elimination bracket produced and returned for preview (FR 1.3.)
1.7. TO accepts bracket preview, and creates active bracket (FR 1.4.)

2. A user wants to create a user profile (FR 2.1.)

2.1. User presses `Create profile` button
2.2. User provides Username, password, email address, and additional information
2.3. User submits profile
2.4. Profile attributes are validated
2.5. User profile is created

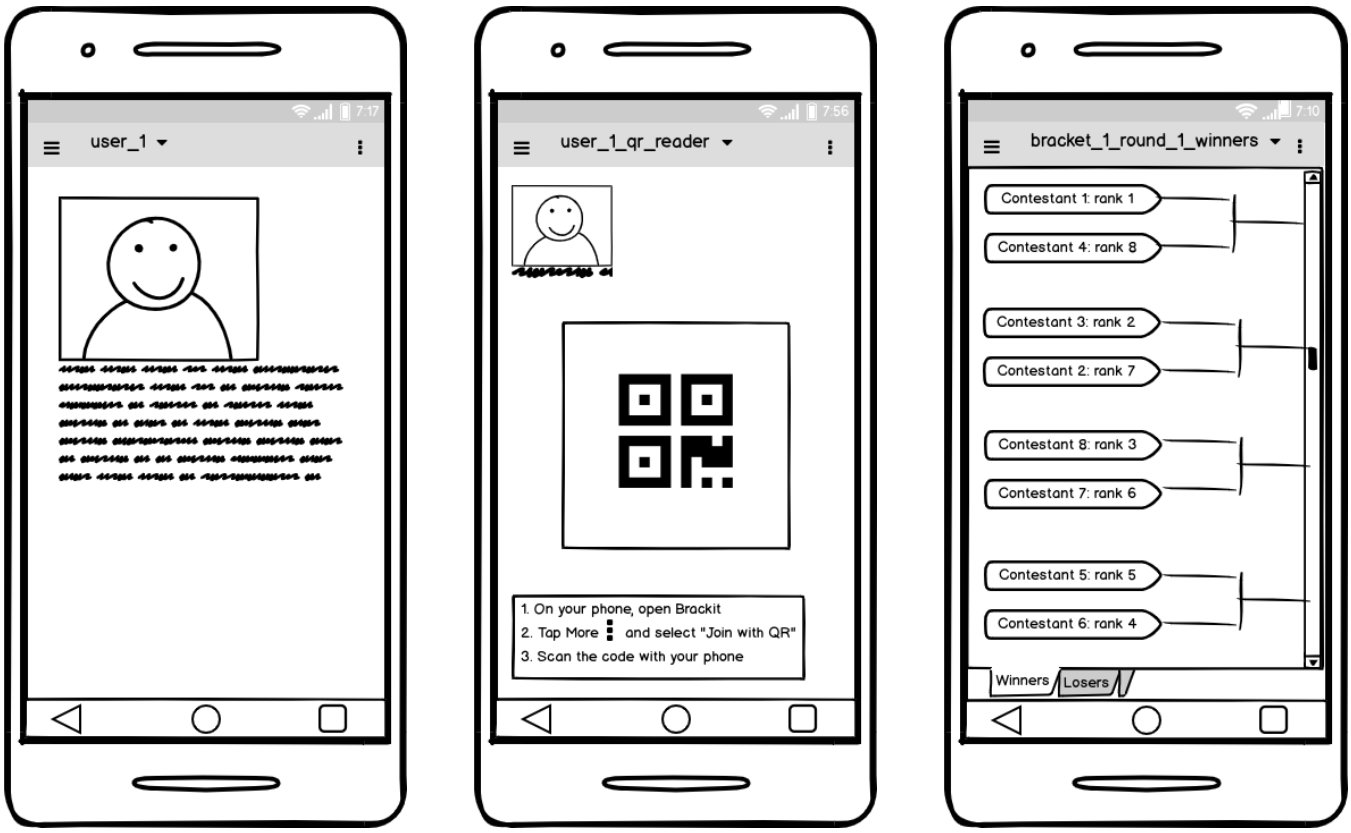
3. A competitor enters a setup-phase bracket (FR 1.2.)

3.1. QR Code associated with setup-phase bracket generated by system (Unique QR Code per bracket)
3.2. TO presses `Display QR code`
3.3. QR Code associated with setup-phase bracket retrieved by system
3.4. TO displays QR code associated with newly created bracket
3.5. Competitor presses `Join bracket`
3.6. Competitor scans TO's QR code
3.7. QR Code validated against system
3.8. Competitor is entered into setup-phase bracket

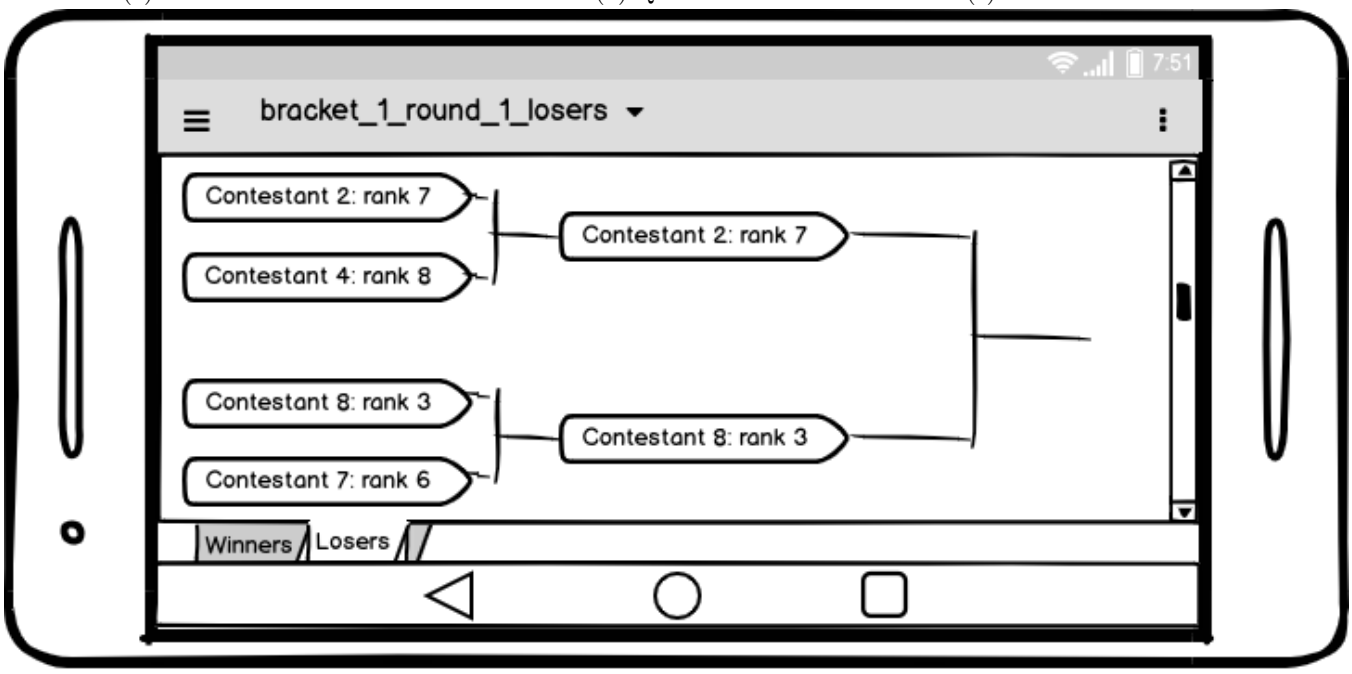
4. A spectator wants to view an active bracket (FR 4.1.)

4.1. QR Code associated with active bracket generated by system (Unique QR Code per bracket)
4.2. TO presses `Display QR code`
4.3. QR Code associated with active bracket retrieved by system
4.4. TO displays QR code associated with active bracket
4.5. Spectator presses `View bracket`
4.6. QR Code validated against system
4.7. Spectator is able to view active bracket

Mockups



(a) User Profile (b) QR Reader (c) Vertical Bracket Visualization



(d) Horizontal Bracket Visualization