

CIS3260 (Software Design IV)

Assignment 1 - Use Cases

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# Use Cases

## UC1: Choosing Who Makes the First Move

- **Primary Actors**
  - Players
- **Initiating Event**
  - Two or more players agree to start a match against each other.
- **Main Success Scenario**
  1. Each player takes a coin out of their bag and places it in their cup.
  2. Each player “throws” their cup to flip their coin.
  3. Each player notes the result down.
  4. Players perform Steps 2-3 two more times.
  5. The player with the most H on all coin flips gets to make the first move at the start of the game.
- **Post Conditions**
  - The selected player makes the first move in the game.
- **Alternate Flows**
  - **Flow 5A** (No H)
    - 5A. 1. None of the players’ coin lands with H facing up.
    - 5A. 2. Players take alternating turns flipping their coin until one player lands on H facing up.
  - **Flow 5B** (Players tie)
    - 5B. 1. Two or more players tie on the highest number of H facing up on coin flip.
    - 5B. 2. Players take alternating turns flipping their coin until one player lands on H facing up.

## UC2: Advancing in Spots on a Game Board

- **Primary Actors**
  - Player
  - Opponent Player
- **Initiating Event**
  - Opponent Player's turn has ended and it is now Player's turn.
- **Main Success Scenario**
  1. Player and Opponent place a handful of dice in their bags.
  2. Player takes the dice out of their bag and places them in their cup.
  3. Player "throws" their cup to roll their dice.
  4. Player sums the side-up values of their dice upon roll and advances that many steps on the game board.
- **Post Condition**
  - Player's turn ends and Opponent's turn begins.

### UC3: Getting Two Turns in a Row

- **Primary Actors**
  - Player
  - Opponent Player
- **Goal:**
  - Land on the highest possible side-up value on die roll to get two consecutive turns.
- **Initiating Event**
  - Opponent Player's turn has ended and it is now Player's turn.
- **Main Success Scenario**
  1. Player takes one die out of their bag and places it in their cup
  2. Player "throws" their cup to roll their die
  3. Player shares their result with the opponent.
  4. Player lands on the highest possible side-up value.
  5. Player gets to roll again (resume from *Step 2 of the Main Success Scenario*).
- **Post Conditions**
  - Player drops the die for Opponent Player to use for their turn.
- **Alternate Flows**
  - **Flow 4A** (Player does not land on highest possible side-up value)
    - 4A. 1. Player drops the die and Opponent places it in their cup.
    - 4A. 2. Opponent resumes from *Step 2 of the Main Success Scenario*.

## UC4: Breaking a "Tie"

- **Primary Actors**
  - Player
  - Opponent Player
  - Referee
- **Initiating Event**
  - Player and Opponent are tied in gamescore.
- **Main Success Scenario**
  1. Player places a handful of dice in a shared bag.
  2. Referee chooses a valid die colour and side-up value, which if achieved on die roll by a player, will give them the advantage.
  3. Player picks a die from the bag without looking at which they are picking.
  4. The die colour matches the referee's criteria, so they place it in their cup.
  5. Player "throws" their cup to roll their die.
  6. The side-up value of the die on roll matches the referee's criteria, so the player breaks the tie.
- **Post Conditions**
  - Player breaks the tie and both Player and Opponent continue to the next phase of gameplay.
- **Alternate Flows**
  - **Flow 2A** (invalid criteria selected)
    - 2A. 1. Referee develops criteria based on a die that does not exist in the shared bag.
    - 2A. 2. Referee re-evaluates their criteria to ensure it is possible to achieve given the dice placed in the bag.
    - 2A. 3. Resume from *Step 3 of the Main Success Scenario*.
  - **Flow 4A** (Colour does not match criteria)
    - 4A. 1. Player places the die back into the shared bag and other tied player repeats the process from *Step 3 of the Main Success Scenario*.
    - 4A. 2. The tied players repeat *Steps 1-5 of the Main Success Scenario* until one player breaks the tie.
  - **Flow 6A** (Side-up value does not match criteria)
    - 6A. 1. Refer to Alt Flow 4A.