# Crown and Anchor

# Use-Case: Odds in Game Incorrect

## Brief Description

Problem: Over the course of many games the statistical odds of winning should be in favour of the house with an 8% bias.

This solution will discuss iterating over many games ensuring a correct bias over time.

## Actors

* 1. Gambler
  2. Dealer

## Pre-Conditions

* 1. There is a gambler ready to join.
  2. There is a script that runs the game through many iterations.

## Normal Flow

The use case begins when the game commences

|  |  |
| --- | --- |
| Actor | System |
| 1 The gambler places a bet against a face | 2 The system records the new player |
|  | 3 The system records the player’s bet |
| 4 The dealer closes betting | 5 No more players can be added |
|  | 6 The round commences |
| 7 The dealer rolls the dice | 8 The dice are rolled, randomising the results |
|  | 9 The dice come to a stop showing their results |
|  | 10 The matches are calculated |
|  | 11 The bet is paid |
|  | 12 The round ends |
|  | 13 This is repeated until the game ends |
|  | 14 The odds of winning are calculated |

The use case ends.

The use case repeats to get a statistical average.

## Alternate Flows

* 1. None.

## Subflows

* 1. A single game.

## Key Scenarios

* 1. Successful Completion – The ratio of wins to losses should be approximately 0.42.
  2. Bug Replication – The ratio of wins to losses is not approximately 0.42..

## Post-conditions

* 1. Successful Completion – The ratio of wins to losses should be approximately 0.42.
     + 1. The ratio should report a value of 0.42.
       2. The script completes.

## Special Requirements

* 1. None