

# Cocharge Doc - Rock Paper Scissors Implementation

## Requirements Met

- Random vs Rock player implementation ✓
- 100 rounds of gameplay ✓
- Game logic evaluation ✓
- Win/loss/draw tracking ✓
- Test coverage ✓
- Clean code principles ✓

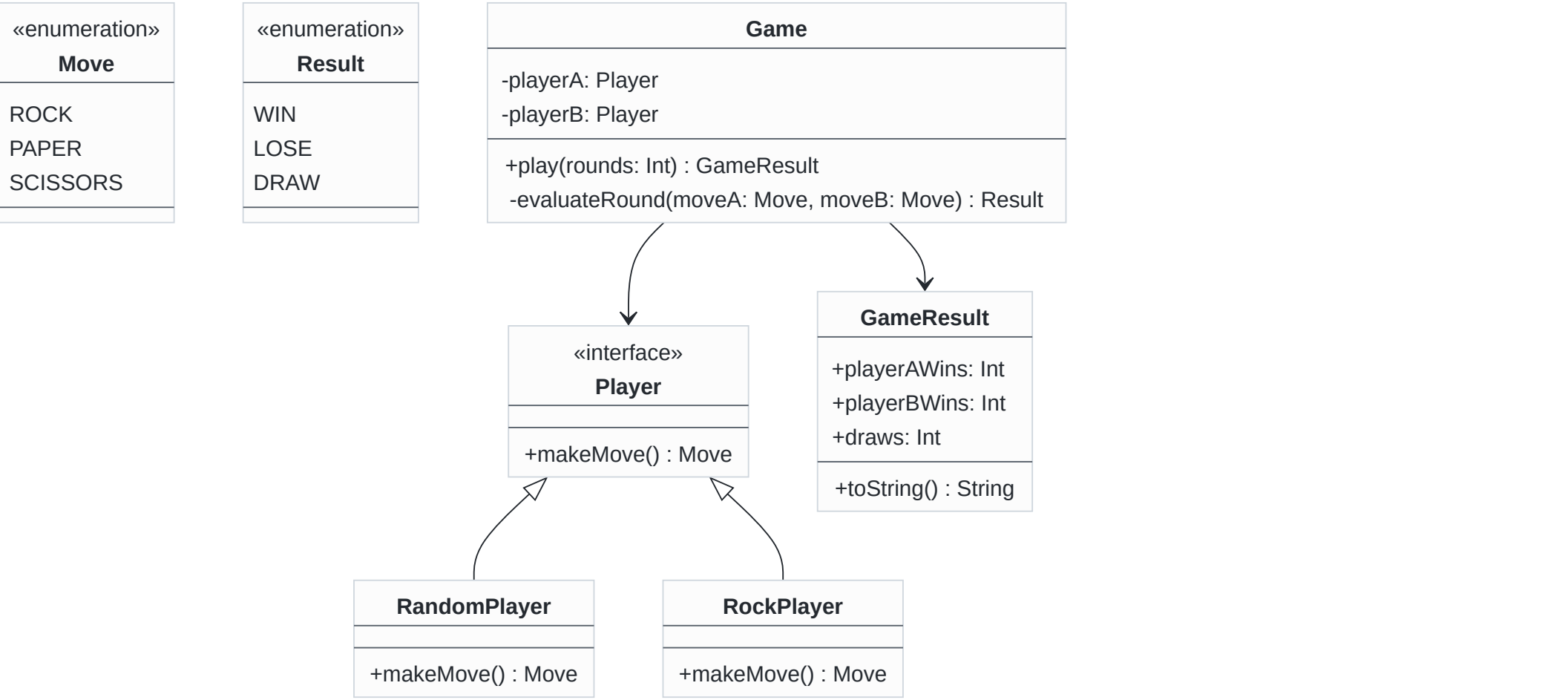
## Technical Documentation

### Project Structure

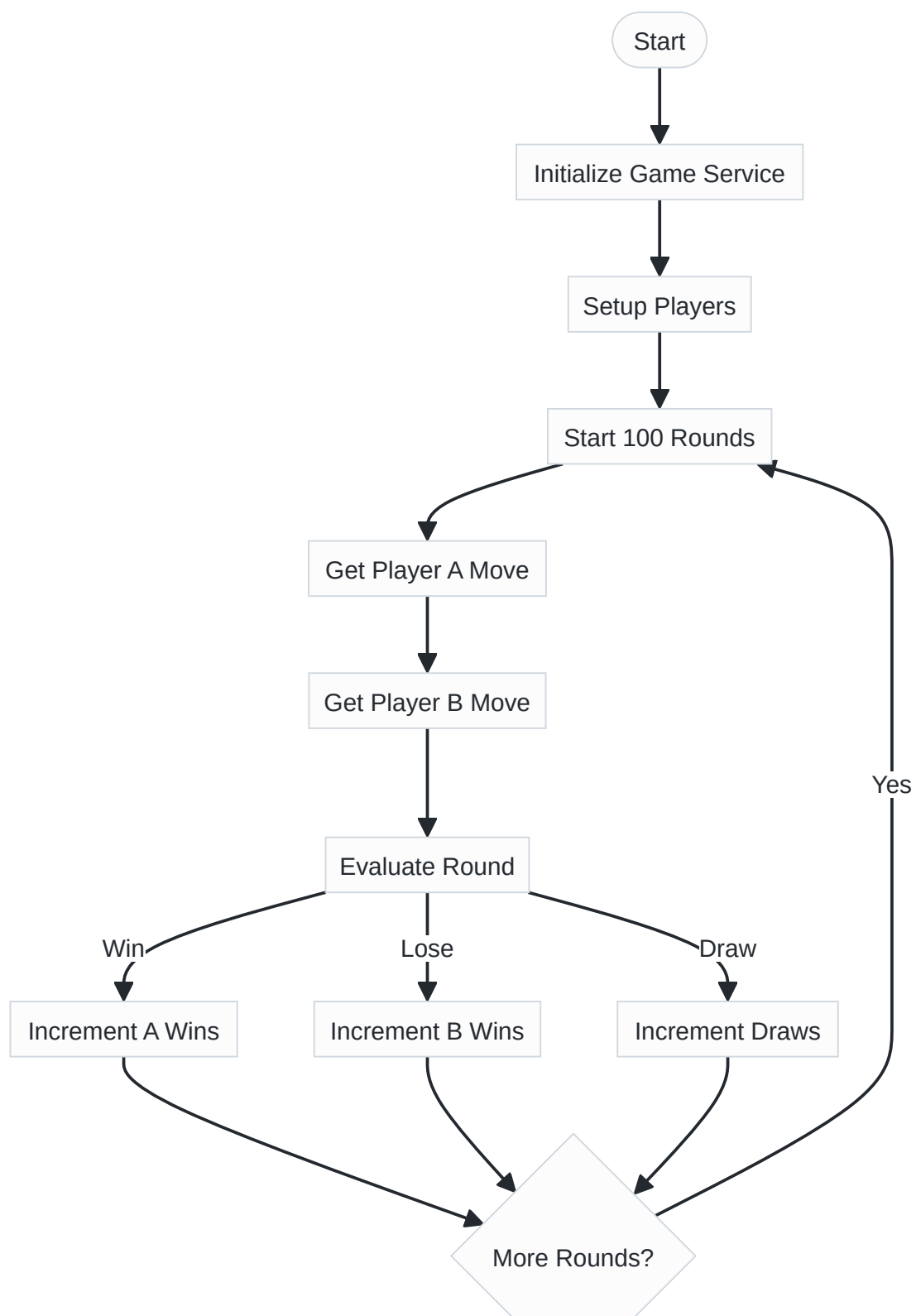
```
src/  
├─ main/kotlin/com/example/rps/  
│   ├─ domain/  
│   │   └─ model/  
│   │       └─ player/  
│   └─ application/  
│       └─ game/  
│           └─ service/  
└─ test/kotlin/com/example/rps/  
    └─ domain/  
        └─ application/
```

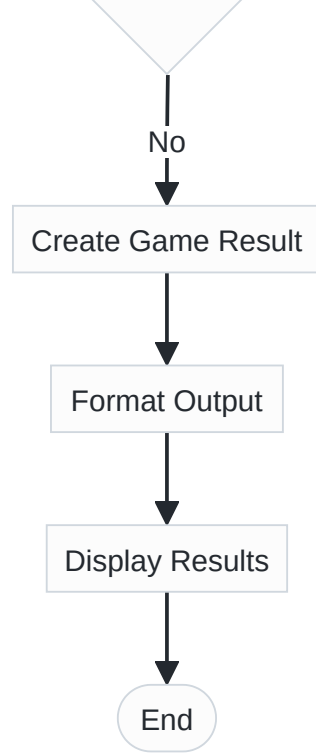
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## Class Diagram



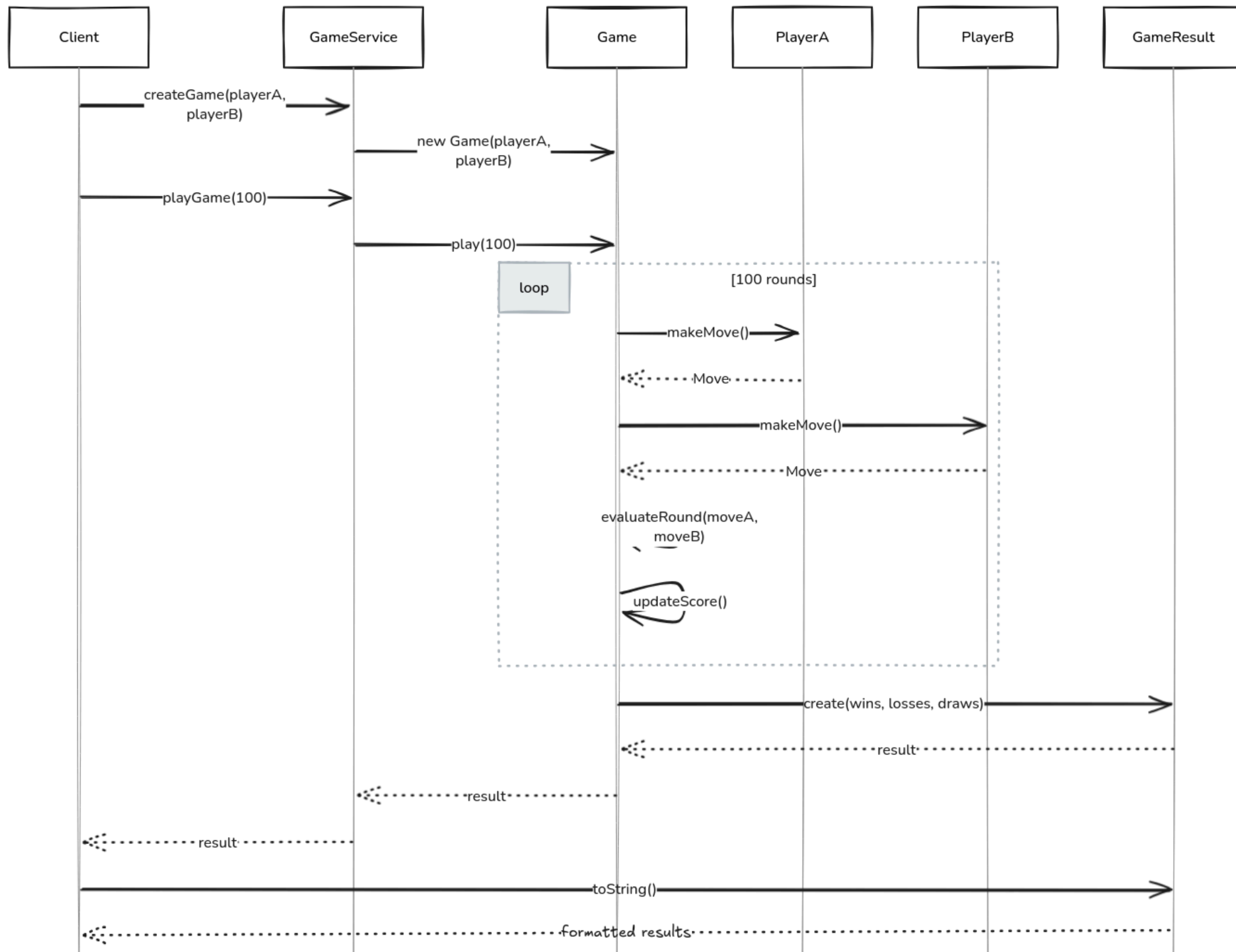
Flow Diagram





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## Sequence Diagram





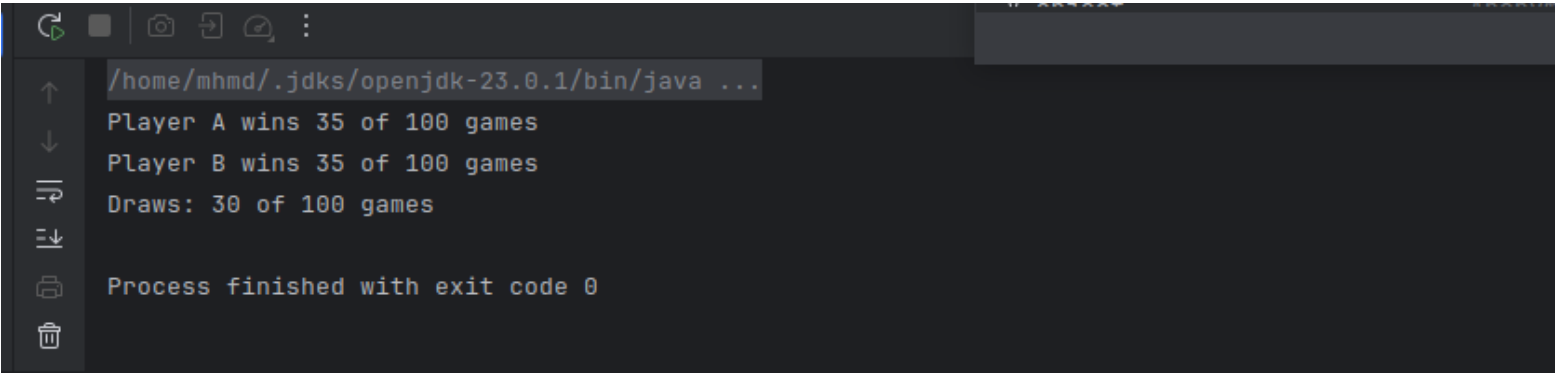
## Test Coverage

- Unit tests for all components
- Mock player interactions
- Game logic validation
- Result calculation verification

## Build and Run

```
./gradlew build
./gradlew test
./gradlew run
```

## Sample Output



## Testing Strategy

### 1. Unit Tests

## Player Tests (PlayerTest.kt)

- `test rock player always returns rock`
  - Verifies RockPlayer consistently returns ROCK
  - Runs 100 iterations for confidence
- `test random player returns different moves`
  - Ensures RandomPlayer generates diverse moves
  - Checks for multiple unique moves in 100 rounds
  - Validates randomness implementation

## Game Tests (GameTest.kt)

- `test game result totals equal rounds played`
  - Validates total rounds = wins + losses + draws
  - Ensures no rounds are lost in counting
- `test rock versus rock results in draw`
  - Verifies basic draw scenario
  - Uses mocked players for controlled behavior
- `test paper beats rock`
  - Validates fundamental game rule
  - Confirms correct winner determination
- `test rock beats scissors`
  - Tests another core game rule
  - Ensures proper round evaluation
- `test scissors beats paper`
  - Completes game rules testing
  - Verifies consistent evaluation

## Sample Test

# GameTest

all > [com.example.rps.application.game](#) > GameTest

5

tests

0

failures

0

ignored

1.179s

duration

100%

successful

Tests

Standard error

Test	Duration	Result
test game result totals equal rounds played()	1.154s	passed
test paper beats rock()	0.006s	passed
test rock beats scissors()	0.008s	passed
test rock versus rock results in draw()	0.006s	passed
test scissors beats paper()	0.005s	passed