

# Slot Machine 1 - Simulation Analysis

## Simulation Overview

This report presents the results of the simulation titled 'Slot Machine 1 - Simulation Analysis', run on 2024-08-11 14:14:21.

The simulation was conducted using the following slot machine configuration:

Slot Machine Payout Probabilities:

Line 1: [0.2776462380835233, 0.23480795191102083, 0.20124967971510008, 0.28629613029035583]

Line 2: [0.03672664576431, 0.27181072425465225, 0.1523772279591029, 0.5390854020219349]

Line 3: [0.1685908932335755, 0.11965336891108792, 0.43551520556919054, 0.27624053228614603]

Rewards: [0, 2, 5, 10]

Number of Trials: 100

Number of Strategies: 5

# Summary Statistics

## Strategy: FixedBetStrategy

Description: Fixed bet strategy: always bet the same amount.

Win Rate (Mean): 100.00%

Average Number of Spins: 34.32

Final Stake (Mean): 568.04

Final Stake (Median): 510.00

Final Stake (Standard Deviation): 465.16

## Strategy: KellyCriterionStrategy

Description: Kelly criterion strategy: calculates the optimal bet size based on the probability of winning and the payout ratio.

Win Rate (Mean): 100.00%

Average Number of Spins: 9896.25

Final Stake (Mean): 5056.65

Final Stake (Median): 5048.00

Final Stake (Standard Deviation): 26.57

### **Strategy: MartingaleStrategy**

Description: Martingale strategy: double the bet after each loss, reset to initial bet after each win.

Win Rate (Mean): 3.00%

Average Number of Spins: 576.54

Final Stake (Mean): 150.53

Final Stake (Median): 0.00

Final Stake (Standard Deviation): 860.26

### **Strategy: ReverseMartingaleStrategy**

Description: Reverse Martingale strategy: double the bet after each win, reset to initial bet after each loss.

Win Rate (Mean): 5.00%

Average Number of Spins: 577.66

Final Stake (Mean): 250.93

Final Stake (Median): 0.00

Final Stake (Standard Deviation): 1099.29

**Strategy: FibonacciStrategy**

Description: Fibonacci strategy: bet according to the Fibonacci sequence.

Win Rate (Mean): 6.00%

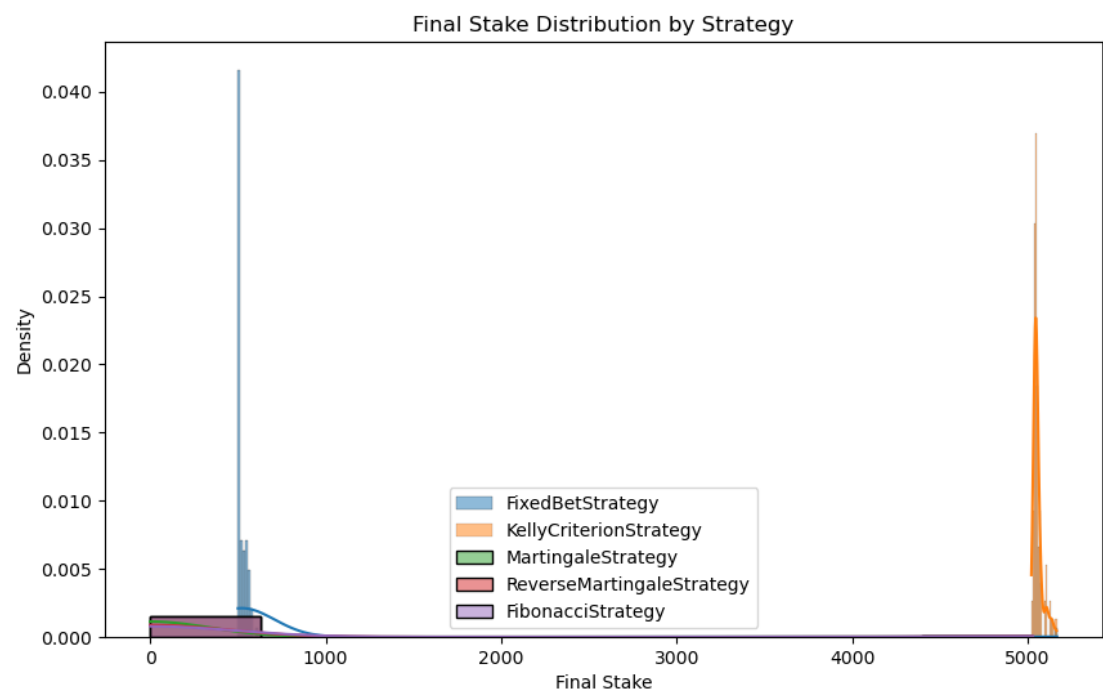
Average Number of Spins: 629.02

Final Stake (Mean): 301.11

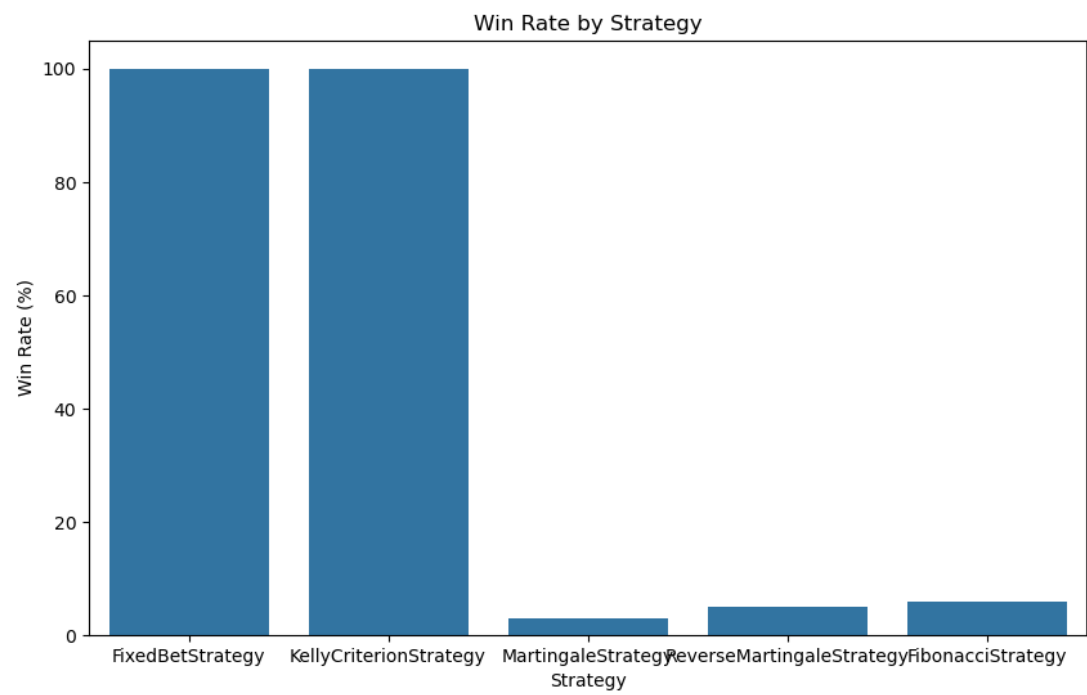
Final Stake (Median): 0.00

Final Stake (Standard Deviation): 1197.83

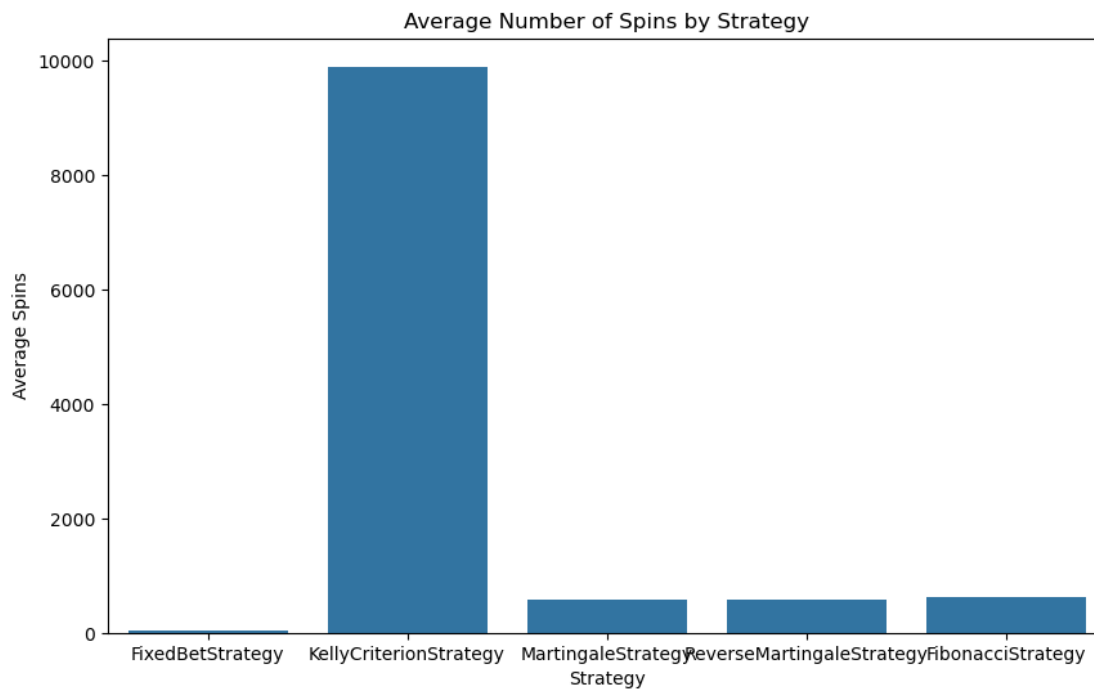
# Visualizations



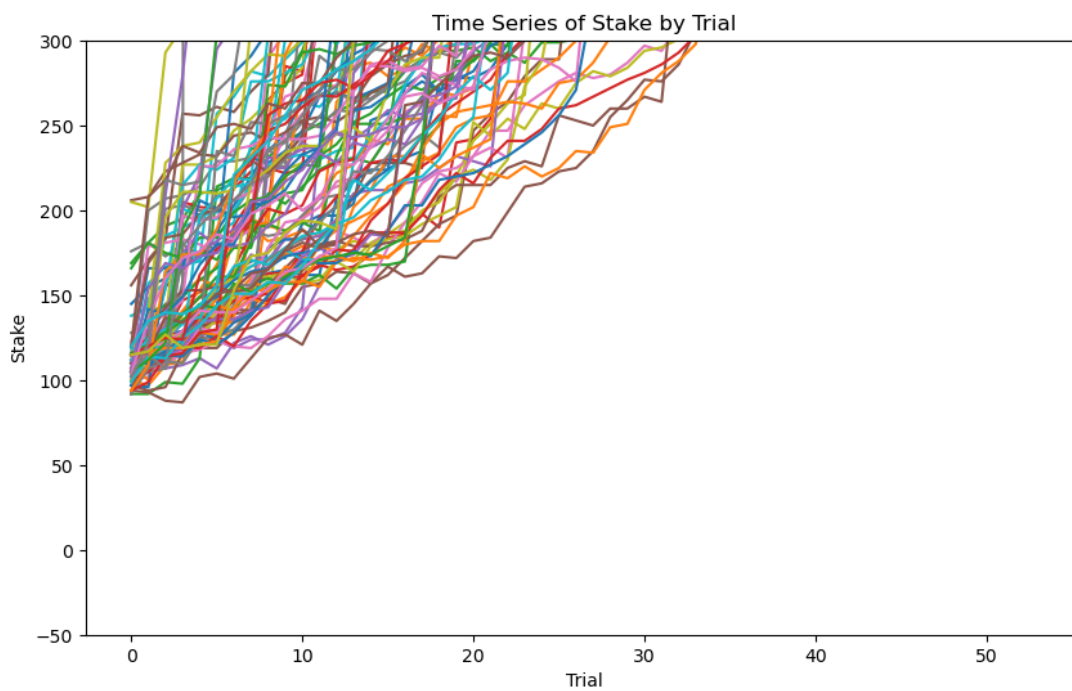
Distribution of final stakes for each trial - Strategy: FibonacciStrategy



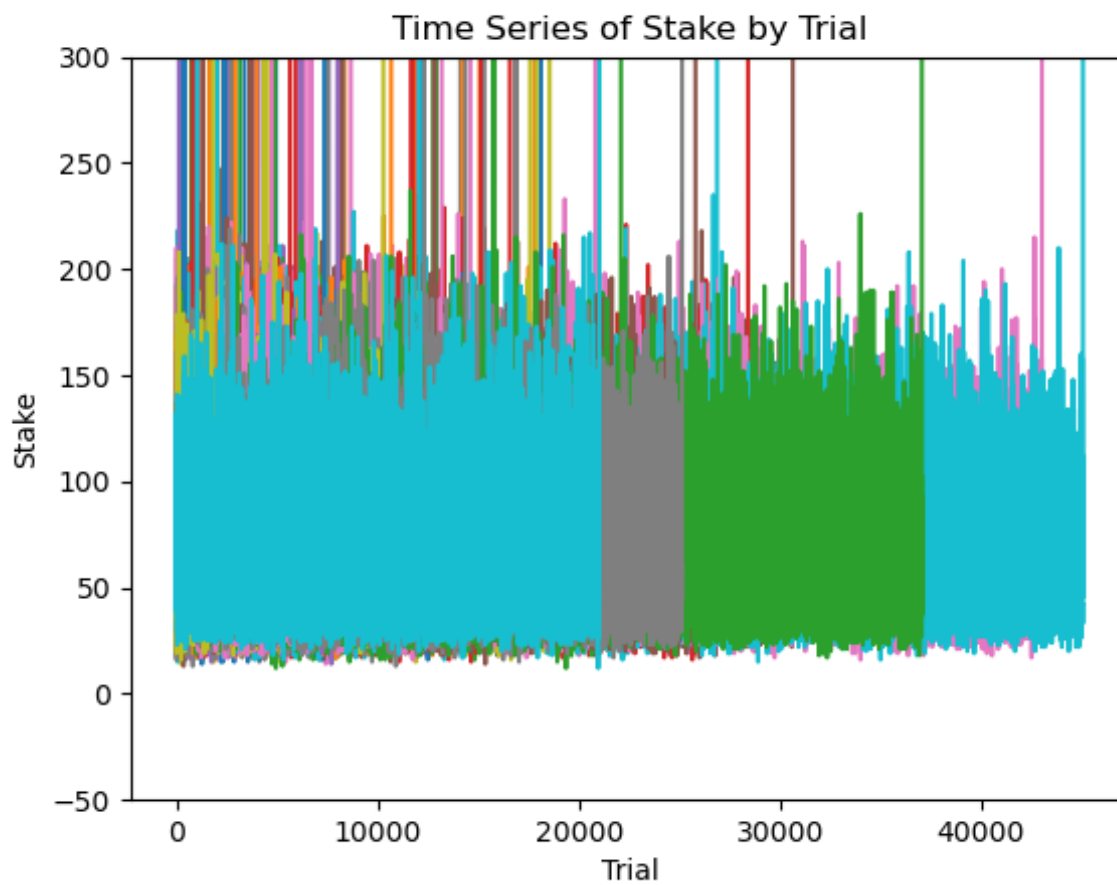
Win rate for each trial - Strategy: FibonacciStrategy



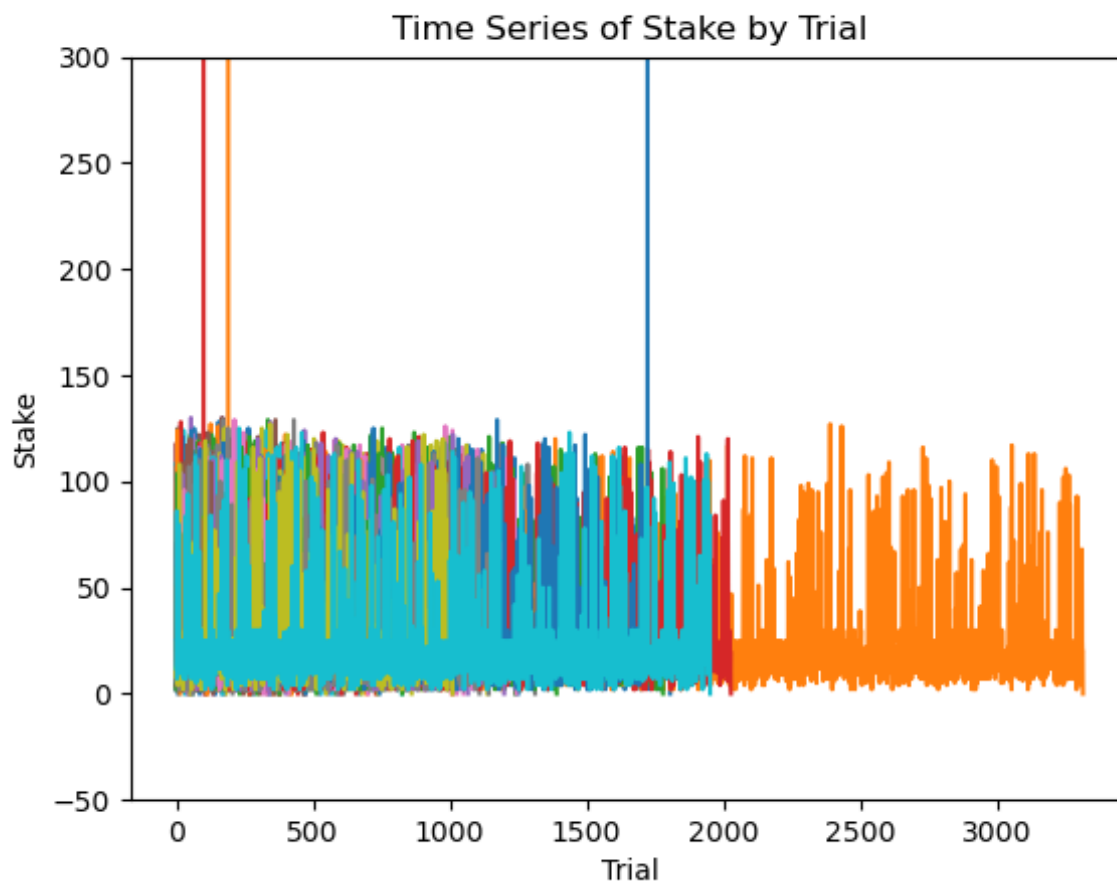
Average number of spins for each trial - Strategy: FibonacciStrategy



Time series of gain for Fixed Bet Strategy - Strategy: FibonacciStrategy

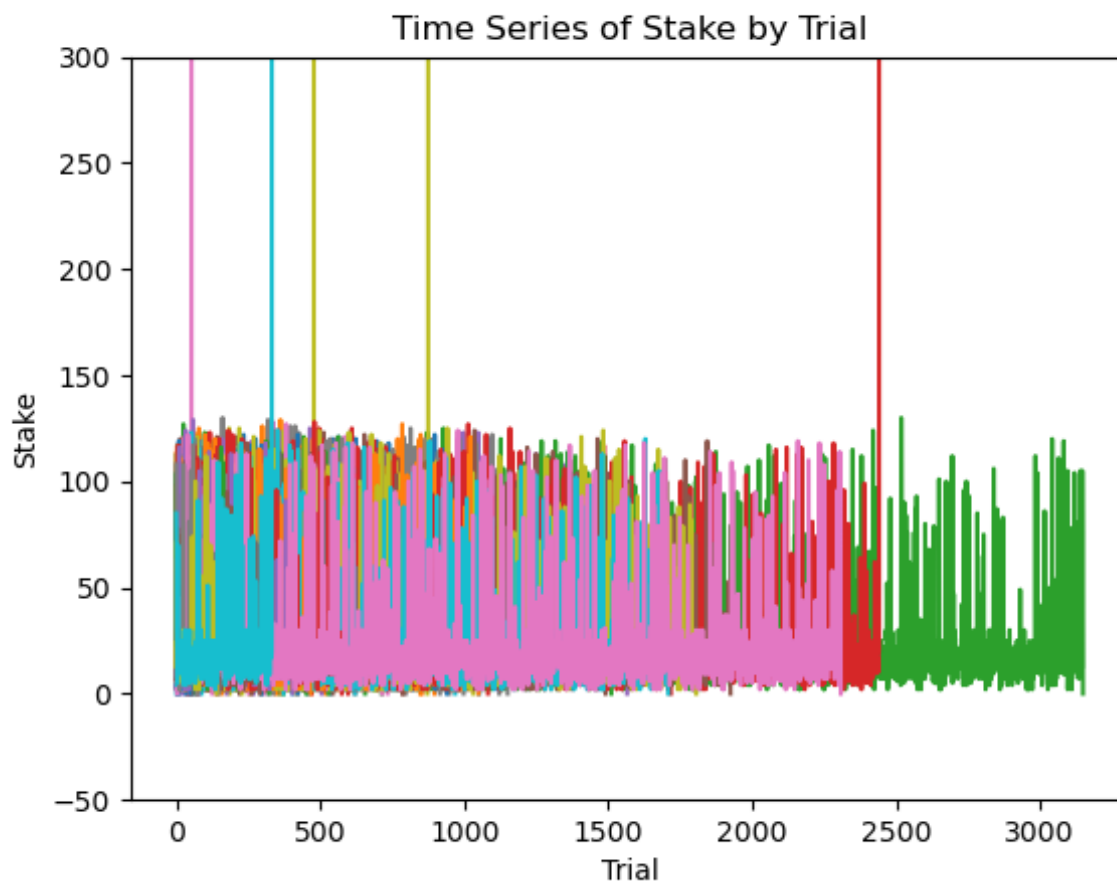


Time series of gain for Kelly Criterion Strategy - Strategy: FibonacciStrategy

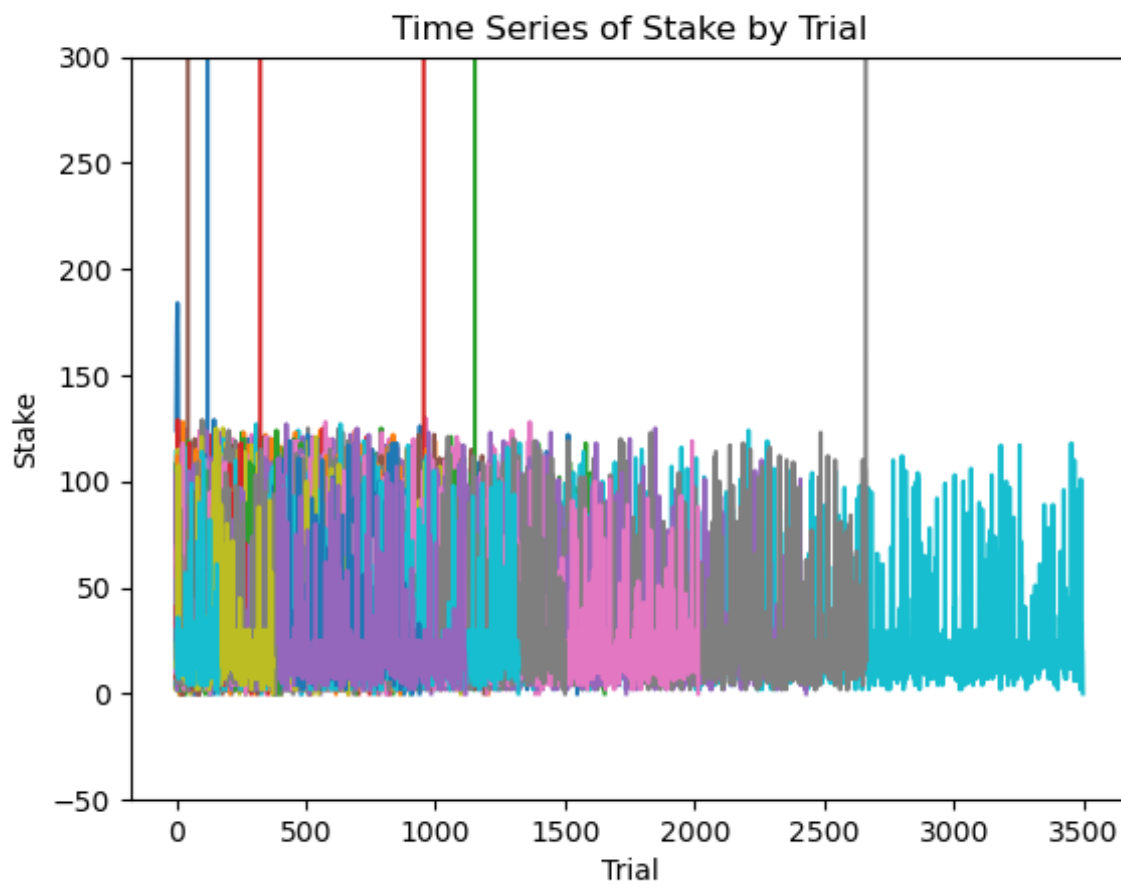


Time series of gain for Martingale Strategy - Strategy: FibonacciStrategy





Time series of gain for Reverse Martingale Strategy - Strategy: FibonacciStrategy



Time series of gain for Fibonacci Strategy - Strategy: FibonacciStrategy