

# The Specker Challenge Game

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# SCG Overview

- Two players take turns:
  - Proposing / Strengthening claims about a specific domain.
  - Refuting / Supporting claims through a refutation protocol.
- Refutation protocols involve the exchange of problems and solutions.

# SCG for Software Development

- Software development process for optimization problems.
- Project leader defines:
  - Language for writing claims, problems, and solutions.
  - Quality of solutions.
- Teams develop their avatars.
- Nightly builds involve a *contest* between avatars.

# Benefits of Structured Communication

- History can be used to figure out:
  - Avatar strengths/weaknesses.
  - Avatar sophistication.
  - Hard problems in the domain.
  - How *serious* are the contests.
  - Probably other information.

id	offerer	acceptor	pred	price	quality	secretQuality	profit(offerer)
500	Lightning	Athena	(0 )	1.0	0.0	0.0	0.0
505	Athena	Lightning	(12 )	1.0	0.269	0.269	-0.538

# Statistics

```
(101 -> playerspec["Athena" "129.10.116.169" 8080])
(100 -> playerspec["Lightning" "129.10.116.124" 9000])

round[1

playertrans[
  100
  offer[503 all (57 67 73 117 126 ) 0.8136923076923077]
  offer[502 all (17 126 ) 0.8136923076923077]
  offer[501 all (81 103 109 126 ) 0.8136923076923077]
  offer[500 secret (0 ) 1.0]
]

playertrans[
  101
  offer[505 secret (12 ) 1.0]
  offer[504 all (94 ) 0.69031469]
  accept[500]
]
[acceptor paid 1.0 for challenge 500. acceptor: 101 offerer: 100 ]
]

round[2

playertrans[
  100
  offer[509 all (86 99 109 120 ) 0.5887505827505828]
  offer[508 all (15 33 54 108 ) 0.5887505827505828]
  offer[507 all (31 73 81 118 ) 0.6913146853146853]
  offer[506 secret (0 ) 1.0]
  accept[505]
  provide[v0 v1 v2 v3 v4 (0 {1} v0 v1 v2 ) (0 {1} v0 v1 v3 ) (0 {1}
{1} v1 v2 v4 ) (0 {1} v1 v3 v4 ) [ ] 500]
]
[acceptor paid 1.0 for challenge 505. acceptor: 100 offerer: 101 ]
```

# Detailed History

# Contest Benefits

- Makes the process *fun* as there is a *chance* of winning either the contest or the feedback.
- Motivates teams to analyze the domain and develop evolvable avatars.
- Can be used for team evaluations.

# SCG Avatar

- Four components:
  - Challenger: challenge existing claims.
  - Offerer: propose new claims.
  - Provider: provide problems in support of claims.
  - Solver: solve problems in defense of claims.

# SCG Avatar

- Challenger: limits of the provider.
- Proposer: limits of the solver.
- Provider: cross testing of solvers.
- Solver: desired project outcome.



# Web Admin

- Avatar registration.
- Results.

## Tournament Complete

### Final Table

<i>Rank</i>	<i>Name</i>	<i>Points</i>
1	Lightning	56
2	EasternWind	50
3	Athena	48
4	Peon	45
5	Jack Bauer	24
6	sweet	23
7	BasicPlayer2	22
8	Black and Gold	20
9	BasicPlayer	16
10	Nerdicide	14
11	Stepdad	0