**Performing a new ATAM Iteration using a different architecture**

In the lecture an architectural analysis was performed on the World of Floorbcraft game. At the end of the lecture it was discussed that the best architecture was likely a combination of Architecture #2 and #3. This architecture, labelled Architecture #4, makes use of two servers instead of one, and also includes the prediction algorithm used in the absence of actual player data.

Another new architecture has now been proposed for analysis; a peer to peer architecture. This architecture, labelled Architecture #5, does not have a central server. Instead each client communicates directly with a number of other clients, until the data is received by all clients.

A new iteration of the ATAM was performed up to the end of Phase III. A tradeoff analysis must now be performed. The results of the Attribute Analyses can be found in the table below:

| Architecture | Worst case latency | Best case latency | Maximum receive interval | Downtime per week |
|---|---|---|---|---|
| 4 | 300ms | 150ms | 0ms | <10 min |
| 5 | 200ms | 50ms | 250ms | 60min |

**H1:**

Describe the tradeoffs between the two different software architectures, using the information in the table above. #5 has better performance on latency but not better availability. However #5 cost less than #4, because it doesn't require server.

**H2:**

Based on these tradeoffs, which architecture would you choose and why? If the cost is not the most critical factor, I prefer #4. Otherwise, #5.

**Performing a new ATAM iteration focusing on the *security* attribute**

We now want to perform a new iteration of the ATAM where security is considered as an additional quality attribute.

**H3:**

As per ATAM Step 1, give one security related scenario which could be considered as part of this analysis.

Example: A hacker modifies position data sent from a player

Faked players created by hacker or the system bug.

**H4:**

As per ATAM Step 2, give one security-related requirement for the system, based on the scenario you chose for question H3. encryption for identity must be provided so no faked information will enter.

**H5:**

Step 4 of the ATAM involves analysing the attributes with respect to each architecture. Security is a difficult attribute to analyse. This is mostly due to the fact that it is hard to quantitatively measure the effects of security threats. Describe a method that you could use to determine how well each architecture meets the requirement generated in H4.

The amount of security ~~fa~~ machanisms provided by the Architecture.

The probability ~~to~~ be successfully attackeed for the Architecture.

Whether the architecture provide encryption and the complexity for the encryption.