**Numbers Game Web API**

The API will support:

Generation of a standard (6-number) games, where the client specifies the number of large numbers to use, and receives a game and a target.

Provision of a solution for a given game, where the client specifies the game parameters (initial values and target), and the API returns a solution, if one exists.

Provision of all solutions for a given game.

Verification that a client-supplied solution does indeed solve a given game.

A “live” competition, where multiple clients attempt to solve the same game instance, and are awarded points on the basis of their submitted solutions. This will require a database backend to record the games, the users and the scores. **Robin to dictate how he wants the live competition to work, as product owner.**

As a starting point: we’ll require individual clients to be uniquely identified when partaking in a competition. At any particular moment, the server will have one competition running. Competitions will end after a fixed duration. A competition consists of a series of “challenges”, where each challenge is a collection of games that require solving, within a fixed time allotment. The client that submits the “fastest” competition solution wins the challenge and is allocated a point. The competition ends and the client with the most points wins the completion. A SPA will show the high score winners table in real time, and the list of currently competing clients.