It should be possible to run these strategies in the same way as the random strategy, using the constants `bloodlust`, `self_preservation`, `land_grab`. For example, if you load `war_of_life.pl` and `my_wol.pl` into Prolog, then type the query:

```
play(verbose, bloodlust, land_grab, NumberOfMoves, WinningPlayer).
```

this will play a game in which player 1 uses the bloodlust strategy and player 2 uses the land_grab strategy. Check that this is working OK by running a few games with different strategy pairings.

Part 3 – A Tournament

Question 5

We want to know which, if any, strategy is the best for playing this game, and we'll do this by using a tournament. Play as many games as time will allow for each pairing of strategies, and fill in the table over the page.

Question 6

If both players have the same strategy, for which strategies does it appear that playing first is an advantage/disadvantage? Answer in the space below:

With bloodlust, 1st mover has an advantage.
However, no other strategy seems to display this feat (sample of 200 games for minimax vs minimax makes it difficult to be conclusive).
Perhaps bloodlust has this advantage because it is a strategy that is most effective when many pieces are present, since the opportunity to cause "a lot" of damage is "rare". For more comments/insights into the strategies, see comments in the code.

Question 7

Imagine playing football in a gale force wind and where the pitch is extremely muddy. Here, it is hardly worth the players kicking the ball, because the environment plays too big a factor in the game. What evidence do you have against the claim that the environment plays a bigger part than the movement of pieces in the war of life game? The environment here is Conway's Crank, which is beyond the control of the players. Answer in the space below:

Perhaps the evidence lies in the minimax vs land grab and land grab vs minimax tests. In this case, minimax is superior to land grab in every ~~s~~ since it uses the land grab criterion, but looks one step further in the game, it can only ever pick better moves (unless ~~by~~ by chance looking 1 step ahead is detrimental - but this is unlikely) (*)
However, there are still quite a few games where land grab wins, which suggests the environment / randomness / luck plays a large role.

Submitting Your Work

Electronic submission: submit 1) your code `my_wol.pl`. Please do not include or load `war_of_life.pl` in `my_wol.pl` and use `play(quiet,...)` rather than `play(verbose,...)`. 2) A file worksheet.pdf (your completed version of this worksheet).

Note: `my_wol.pl` should run under Sicstus on the lab machines – do not use SWI or other Prologs!

(*) Moreover, minimax makes the correct assumption about opponent strategy. So it should really be superior!