

A writeup detailing:

–What you changed from the template and why, especially related to your selection strategies, fitness functions, crossover and mutation operators, etc.

Generate successors uses tournament selection and elitist selection, first it generates a population of children and runs tournament selection on them, then it replaces the least fit of these children with more fit candidates from the previous generation. We changed Individual_Grid by adding restrictions on generating levels. It generates children by copying columns from one parent or the other, then mutating them. It prevents uniformly randomising the level. Restrictions include no enemies are generated without a solid box below it, nothing will be generated if that tile is unreachable. Preventing pipe generated in mid-air, pipe will be extended until it reaches a box or the bottom of the map. For mutation, we select part of the map and reset it to an empty state. Afterward, we rebuild that area following the restriction we used for initially generating a new level. Ideally we would make a better fitness function as the generation is not given much direction.

–Something about each of your two favorite levels: Why do you like them? How many generations did it take and how many seconds to generate these levels?

We have a very slow generator, two minutes per level, but even with only one generation the level was interesting, it had some issues like a hole that you can't get out of, but it is very vertical.

We had another level which is the 9th generation, taking 5 minutes to generate. It has many pipes and blocks in mid-air and some of them look impossible to reach. However, the algorithm works well, the boxes generated reasonably, there is always a way to reach those boxes. But due to the poor control from Unity, it took us at least 6 lives to beat the level.

your writeup should also state whether your team intends to participate in the competition.

Probably not