# CT421 – Assignment 1

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## Github Repo: https://github.com/ciano1000/CollegeArtificialIntelligenceGeneticAlgorithms-

## Part A

1. In the above test, 50 all 0 solutions were added to the population of 1000. Even with a relatively small proportion of these “deceptive” solutions, the algorithm is quickly overwhelmed with these false positives, indicated by the average fitness quickly rising over, and holding, above the theoretical max fitness of 20.

## Part B – Knapsack problem

1. Representation: Candidate solutions are represented by an array of indices into the weight & value vectors, and a count that keeps track of how many items the candidate solution utilises. E.g. 
2. The fitness function is relatively simple, by default it is simply the sum of the values of items the candidate solution holds. However, if the sum of the item weights exceed the knapsack capacity, 0 is returned as the fitness.

## Problem 1: Knapsack Size of 103

## Problem 1: Knapsack Size of 156