The Plant Maintenance Problem Report

a) The chromosome in a program is a list of a list of strings. When a power unit is supposed to be taken out for maintenance, so u draw a graph with a power unit down and u put one where the power unit is out for maintenance that is represented by the list of the lists of strings and when u have all the units and all the intervals that is a list of the list of strings and that the whole schedule for the chromosome

b) u calculate the fitness for every single chromosome, so this whole 2D grid has to reduce down to one number, so basically u look at the total amount of megawatt generated and add those up u get that from the files that u reading and also add up all the megawatt loss when the power unit is taken out for maintenance, so we take the total amount available and minus the amount out for maintenance then we get the actually amount available for interval. Check the highest amount available then take that number divide it by standard deviation which is squared because standard deviation measures the square of all the population.

c) Tournament selection – Randomly choose an individual from the population. The fittest individual is returned as the parent. Basically u have the population of the chromosome and u randomly picks it maybe pick an 8 and out of this 8 the one with the highest fitness wins and u take that guy that won into space where u going to do the cross over and mutation and that guy get to reproduce and u repeat this process until u have enough members for the new population

d) Parameters: how big the population is, how big the tournaments are and the number of generation to evolve and the default value for those are arrived by trial and error