

# Hacettepe University Computer Science and Engineering Department

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**Subject :** BBM 203 Software Laboratory Assignment 3

**Problem Definition:** In this assignment, we are expected to implement a basic Genetic Algorithm using the C programming language. While doing this, we were asked to establish our population with a linked list and to do all the process with a linked list.

**Solution:** First I read the selection, mutate, and xover files, and added a linked list with the same name. Then I read the population file and I have created chromosomes and populations in the linked list data structure as shown in fig1 in the Assignment pdf. I sorted the population according to fitness values and created Generation 0 . Then I made a match between chromosomes according to the selection file. According to the xover file, I exchanged genes between matching chromosomes. I mutated the gene where the index was specified in a file called mutate. Finally, I created the new generation by sorting according to the fitness values of chromosomes.