Princess Sumaya University for Technology
The King Hussein School for Computing Sciences
Data Science Department
Lab 4 – Genetic Algorithms

Lab Objectives

- To acquire experience using Genetic Algorithm.
- To acquire experience formulating and representing problems.

Lab Instructions

- Create a new notebook and name it by your "ID-FirstName-LastName".
- Write your name and ID in the first cell in your notebook.
- You must upload your solutions to e-learning as ".ipynb".
- Each lab assignment is of 10 marks.
- You are supposed to submit your solution by **Wednesday (22/12/2021) at 11:59 PM**.
- Be prepared to discuss your solution, if you fail to answer the questions about your solution then it will be reduced or canceled.
- All acts of cheating and/or plagiarism will be graded zero.

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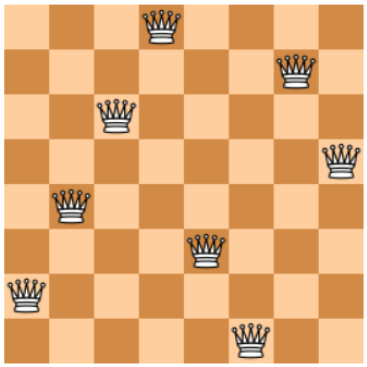
Lab Exercise

Develop a python function called GeneticSolver() that solves the 8-queens problem using genetic algorithms. The 8-queens puzzle is the problem of placing eight chess queens on an 8×8 chessboard so that no two queens threaten each other; thus, a solution requires that no two queens share the same row, column, or diagonal.



Possible solution

You are asked to:

- Use geneticalgorithm python package to develop your solution.
  https://pypi.org/project/geneticalgorithm/
- Represent the problem appropriately.
- Define a suitable fitness function.
- Write comments to explain each part of the code and the used parameters in detail.
- Print the positions of the selected solution with its fitness score.