

National University of Computer & Emerging Sciences Peshawar Campus



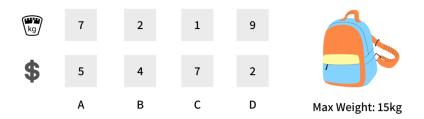
AL 2002 – Artificial Intelligence Lab Assignment 01

Deadline: June 2nd,2023 Weightage: 5

Knapsack Problem Using Genetic Algorithm

A poor and hungry person walks by a local shop with empty pockets and a grumbling stomach. However, He notices a sign that reads "Help yourself to our items, we care about the community!" The shop has 10 items, each with a specific weight and price, and a knapsack that can carry up to 35 kgs of weight. The person is faced with the dilemma of making a selection of items that maximizes the value (i.e., total price) without exceeding the knapsack weight. You have to assist the person in making the selection, so they can enjoy a good meal and feel the warmth of community support. Solve the problem using Genetic Algorithm.

Sample Visuals:



Deliverables:

A complete Python program that implements the genetic algorithm to solve the knapsack problem. The code should be well-documented and include comments explaining each step of the algorithm.