CS250 - ARTIFICIAL INTELLIGENCE LAB

ASSIGNMENT-8: Local Beam Search

Date: March 20, 2024

Total Credit: 10

- Markings will be based on the correctness and soundness of the outputs.
- Marks will be deducted in case of plagiarism.
- Proper indentation and appropriate comments are mandatory.
- *All code needs to be submitted in '.py' format.* Even if you code it in '.IPYNB' format, download it in '.py' format and then submit
- You should zip all the required files and name the zip file as:
    - <roll_no>_assignment_<#>.zip, eg. 1501cs11_assignment_01.zip.
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Introduction:

You have a set of n m-dimensional points, and the goal is to divide these points into k groups (where k is less than n) in such a way that minimizes the average squared distance (you may use Euclidean distance) between each point and the mean of its respective group.

1. Frame the problem as a state space search problem.
2. Define states and transition operators.
3. Develop a local-beam search algorithm to solve the problem.

For any queries regarding this assignment, contact:

Utsav Kumar Nareti (utsavkumarnareti@gmail.com)
Kumari Priya(kumaripriya.manit@gmail.com)
Akash Zingade(akashzingade@gmail.com