Assignment 6  
Due on 2023-10-11, 23:59 IST.

Unit 8 - Week 6

1. Consider the following situation: you are trying to maximize your score in a game where the score is given by the formula:
   \[ \text{Score} = \sum_{i=1}^{n} (a_i + b_i) \]
   where \( a_i \) and \( b_i \) are the outcomes of each action. You need to choose the best action to maximize your score. Which action should you choose?

2. Consider the following situation: you are trying to find the shortest path between two points in a network. You can use Dijkstra's algorithm to find the shortest path. Which action should you choose?

3. Consider the following situation: you are trying to maximize your profit in a business scenario where the profit is given by the formula:
   \[ \text{Profit} = \sum_{i=1}^{n} (c_i - d_i) \]
   where \( c_i \) and \( d_i \) are the cost and revenue of each action, respectively. You need to choose the best action to maximize your profit. Which action should you choose?

4. Consider the following situation: you are trying to optimize the performance of a machine learning model. You can use gradient descent to optimize the model. Which action should you choose?

5. Consider the following situation: you are trying to analyze the sentiment of a piece of text. You can use sentiment analysis techniques to analyze the sentiment. Which action should you choose?

6. Consider the following situation: you are trying to improve the efficiency of a data structure. You can use hashing techniques to improve the efficiency. Which action should you choose?

7. Consider the following situation: you are trying to improve the performance of an algorithm. You can use dynamic programming techniques to improve the performance. Which action should you choose?

8. Consider the following situation: you are trying to optimize the performance of a computer program. You can use optimization techniques to optimize the performance. Which action should you choose?

9. Consider the following situation: you are trying to improve the accuracy of a deep learning model. You can use regularization techniques to improve the accuracy. Which action should you choose?

10. Consider the following situation: you are trying to improve the performance of a search algorithm. You can use backtracking techniques to improve the performance. Which action should you choose?

11. Consider the following situation: you are trying to improve the performance of a game. You can use AI techniques to improve the performance. Which action should you choose?