

Algorithms Analysis and Design

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Project Proposal

2020101006

- The aim of this project is to cover the algorithms taught in the Class by going step-by-step with the help of a conceptual map of these algorithms. I will create a web application consisting of the conceptual map and explain all the algorithms with the help of it.
- I believe that by visualizing the approach of trying to solve a problem (ranging from a real-world problem to a simple puzzle) step-by-step using an algorithm can make us understand why we have used that specific algorithm and why or why not that algorithm is the optimum solution.
- By referring to the conceptual map at all times and going about it in a systematic manner, we will be able to learn and grasp each and every concept much more easily and efficiently.
- I strongly believe a web application would be much more user-friendly and accessible for all. Making it easier for anyone to learn and visualize algorithms.
- Hence to sum it all up, I will be creating a platform in form of a web application where students can learn, understand and visualize various algorithms in a systematic fashion as described with the help of a conceptual map.

Tasks:

1. Create a conceptual map of all the algorithms to be covered by the website.
2. Build the website using various frameworks (probably React and Django, but others too along the way).
3. Add all algorithms one-by-one, its understanding, how to go about a problem using such algorithms and even try to visualize these methods, wherever possible.

4. If time permits, I will try to add some other interesting puzzle solutions (for eg: solving a maze, tic-tac-toe AI, etc.).

Timeline:

Week 1 (10 Oct to 16 Oct)

- Setting up the basic structure of website using the perfect framework.
- Creating a map of all algorithms that will be used in this project.

Week 2 (17 Oct to 23 Oct)

- Different ways approaching a problem.
- 1-2 Algorithms.

Week 3 (24 Oct to 30 Oct)

- 4-5 Algorithms

Week 4 (31 Oct to 6 Nov)

- 4-5 Algorithms

Week 5 (7 Nov to 13 Nov)

- 4-5 Algorithms

Week 6 (14 Nov to 20 Nov)

- Tweaks to website to integrate all algorithms in a structured manner
- 1-2 Algorithms

Week 7 (21 Nov to 27 Nov)

- Fixing bugs
- 2-3 Algorithms
- Finalizing Project

Final Link:

<https://github.com/shreyash-x/AAD-Project-Final>