

The background of the slide features several abstract, flowing, and glossy shapes in shades of blue and purple. These shapes resemble liquid or smoke, with some forming loops and others trailing off. The overall aesthetic is modern and digital.

Designing and Implementation

Algorithm Visualizer

WebApp

Team Members

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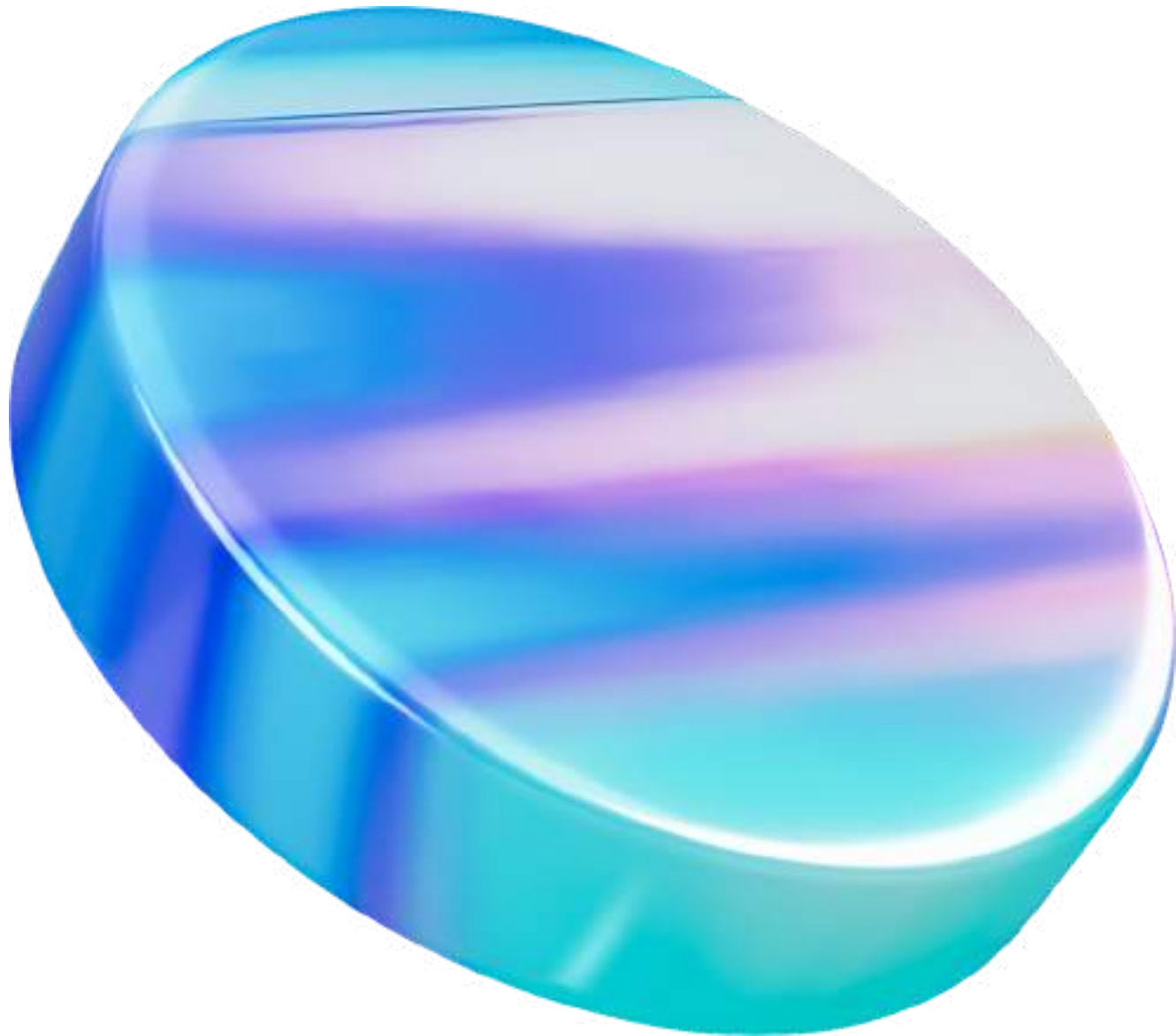
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Project Guide

Dr C Anbuananth

Motivation



Why Algorithm Visualizer?

- Understanding algorithms can be challenging.
- Traditional text-based explanations often fail to capture dynamic processes.
- Inspired by struggles faced by peers, this project bridges the gap with a visual and interactive tool.



Project Goal

- Enhance understanding of algorithm execution through visual interaction.
- Provide an accessible, web-based platform for students and developers.
- Make learning algorithms intuitive, interactive, and fun.



Tools and Technologies

- Frontend: HTML, CSS, JavaScript, ReactJS
- Backend (if needed): Node.js
- Development Environment: Neovim IDE, Vite



Key Modules

User Interface Module

- Home Page
- Algorithm Selection
- Data Input
- Visualization Display

Algorithm Implementation Module

- Sorting Algorithms
- Pathfinding Algorithm



Interactive Features

Real-time visualization of
algorithm execution

1

Step-by-step transitions with
animations

2

Controls: Start, Pause, Restart,
Step Forward, Step Backward

3

Modify datasets dynamically to
explore different scenarios

4

How It Works

User Interaction:

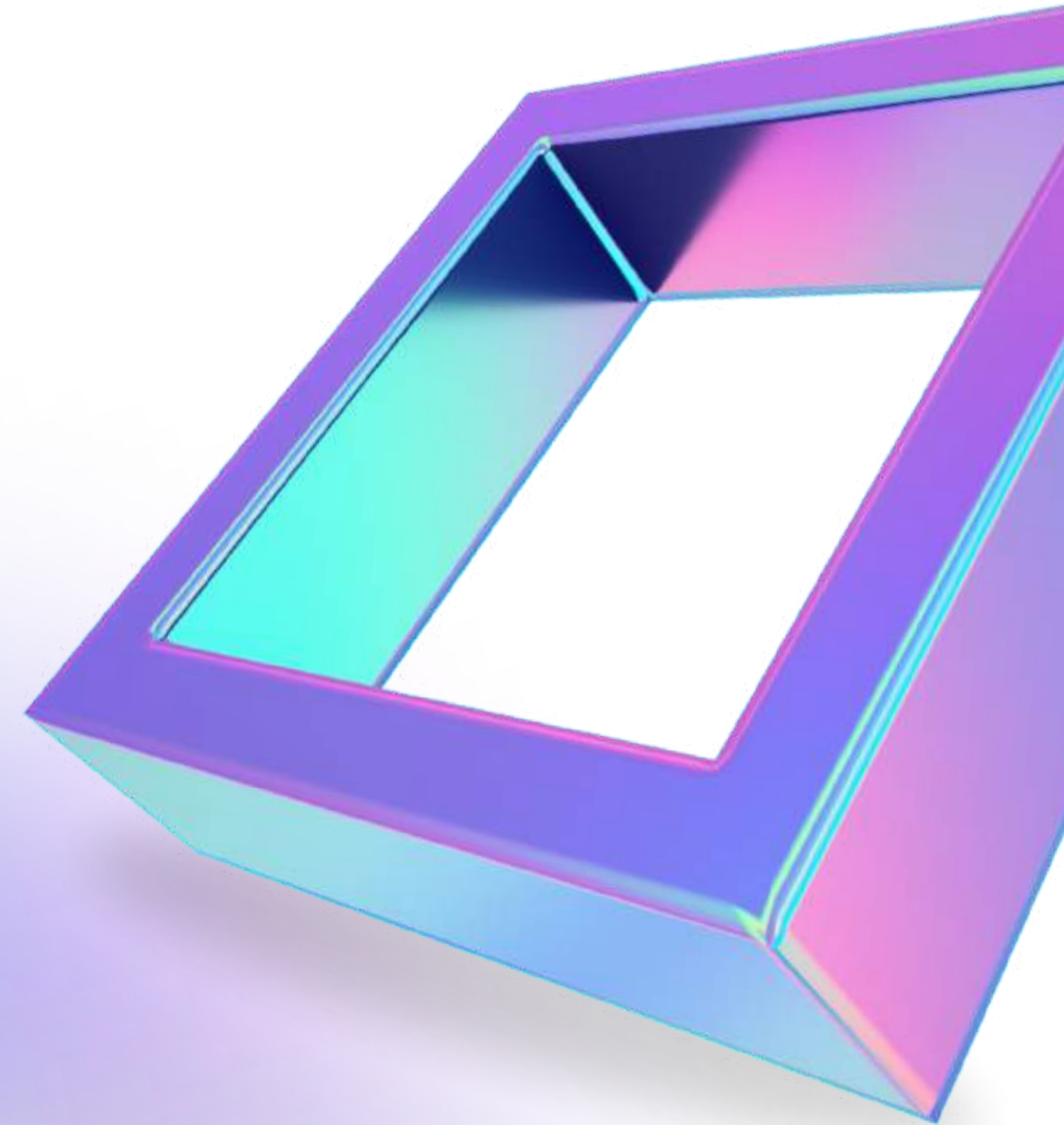
- Select category and algorithm.
- Input custom data or use predefined datasets.

Visualization:

- Algorithm logic is executed and visualized in real-time.
- Observe each step with detailed animations.

Interactive Controls:

- Adjust speed, pause, or step through execution.



Final Thoughts

- **Impact:** Bridges the gap between theory and understanding.
- **Benefits:** Interactive, engaging, and user-friendly platform.
- **Future Scope:** Expand to more algorithms and add gamification for better learning.



The background features a light purple gradient. On the left, there are wavy, ribbon-like shapes in shades of blue and purple. On the right, a large, thick, blue ring with a metallic sheen is partially visible. Below it, a smaller, teardrop-shaped blue object with a similar sheen is positioned. At the bottom left, another blue ring is partially visible.

Thank You