

DNA Sequence Analyzer - Mini Project

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Course: B. Tech Biotechnology

Project Type: Bioinformatics Mini Project

Repository Name: DNA-Sequence-Analyzer

Overview

This is a bioinformatics mini project designed to introduce basic DNA sequence analysis using Python.

Project Objectives

The project performs the following:

- Calculate GC content of a DNA sequence
- Identify the most frequent codon
- Generate the reverse complement of the sequence
- Detect biological motifs like TATA
- Visualize GC content graphically

Tools and Libraries

- Python 3.x
- Collections module
- Matplotlib.pyplot for visualization

No external bioinformatics tools are required, making it beginner-friendly.

How to Use

1. Clone or download this repository.
2. Open the Python script file (dna_analyzer.py) in your Python IDE.
3. Replace the sequence variable with your own DNA sequence.
4. Run the script to see output in the console and a plot window.

Sample Sequence Used

Plaintext:

ATGCTATATAGCCGATATAAGG