Project - "Cyclic Code Encoder"

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Course Instructor

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Course

- CS425 Algebraic Coding Theory and Cryptography

Tech Stack

1. `Django` - a python web framework that provides a robust set of tools and libraries for building web applications.
2. `Python` - a popular programming language known for its simplicity and versatility.
3. `HTML` - the standard markup language for creating web pages.
4. `CSS` - a stylesheet language used for styling web pages.

Project Files

1. `settings.py` - configuration file that contains various settings for a Django project.
2. `urls.py` - serves as a central routing configuration file for URL handling in a Django web application.
3. `wsgi.py` - acts as a communication bridge between a web server and a Django application.
4. `manage.py` - a command-line utility that provides a convenient way to manage various aspects of a Django project
5. `views.py` - handles the main back-end component of the project i.e. does the computations.
6. `input.html` - default webpage of the project, accepts user inputs.
7. `output.html` - outputs the encoded message using Cyclic Codes

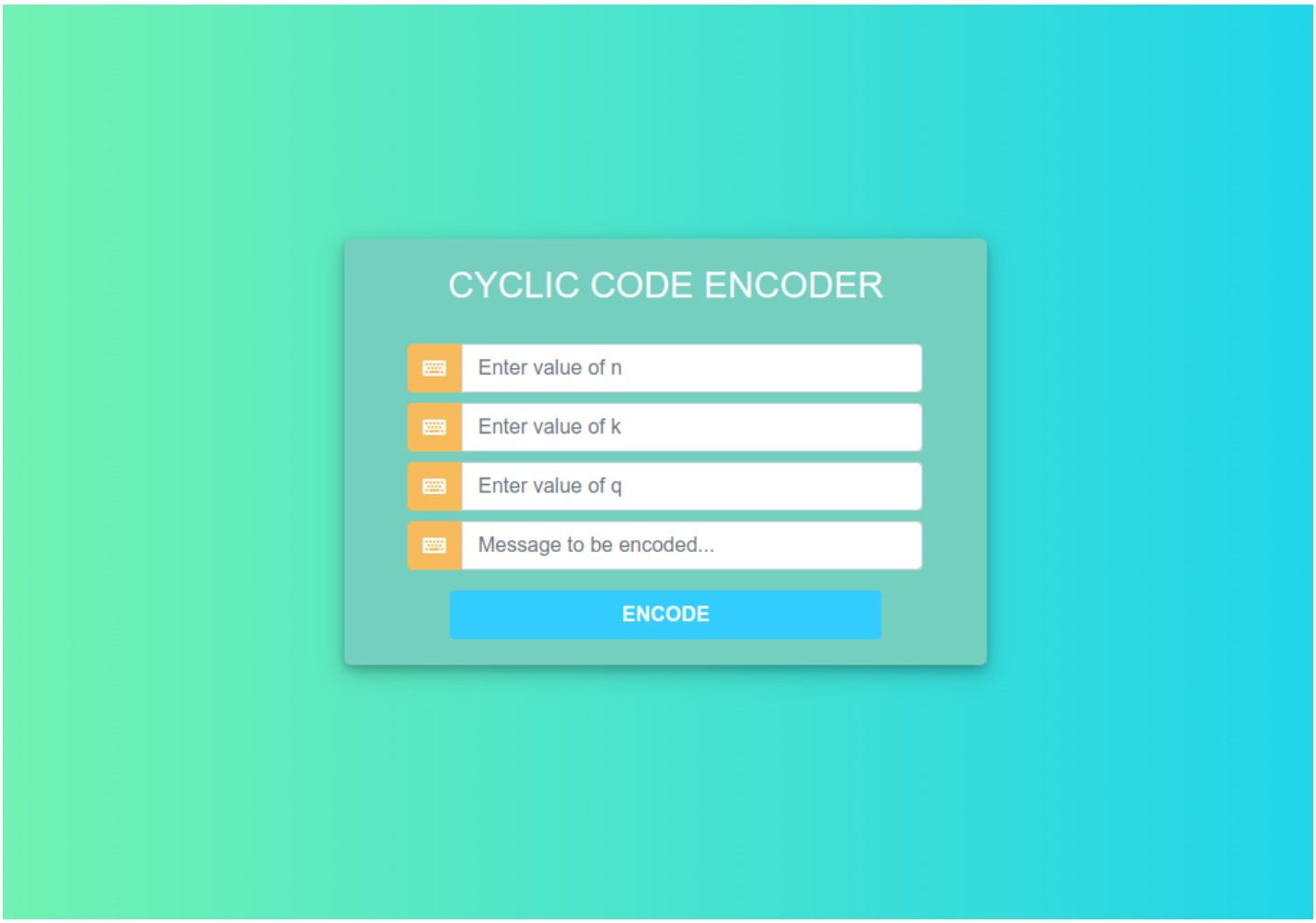
About

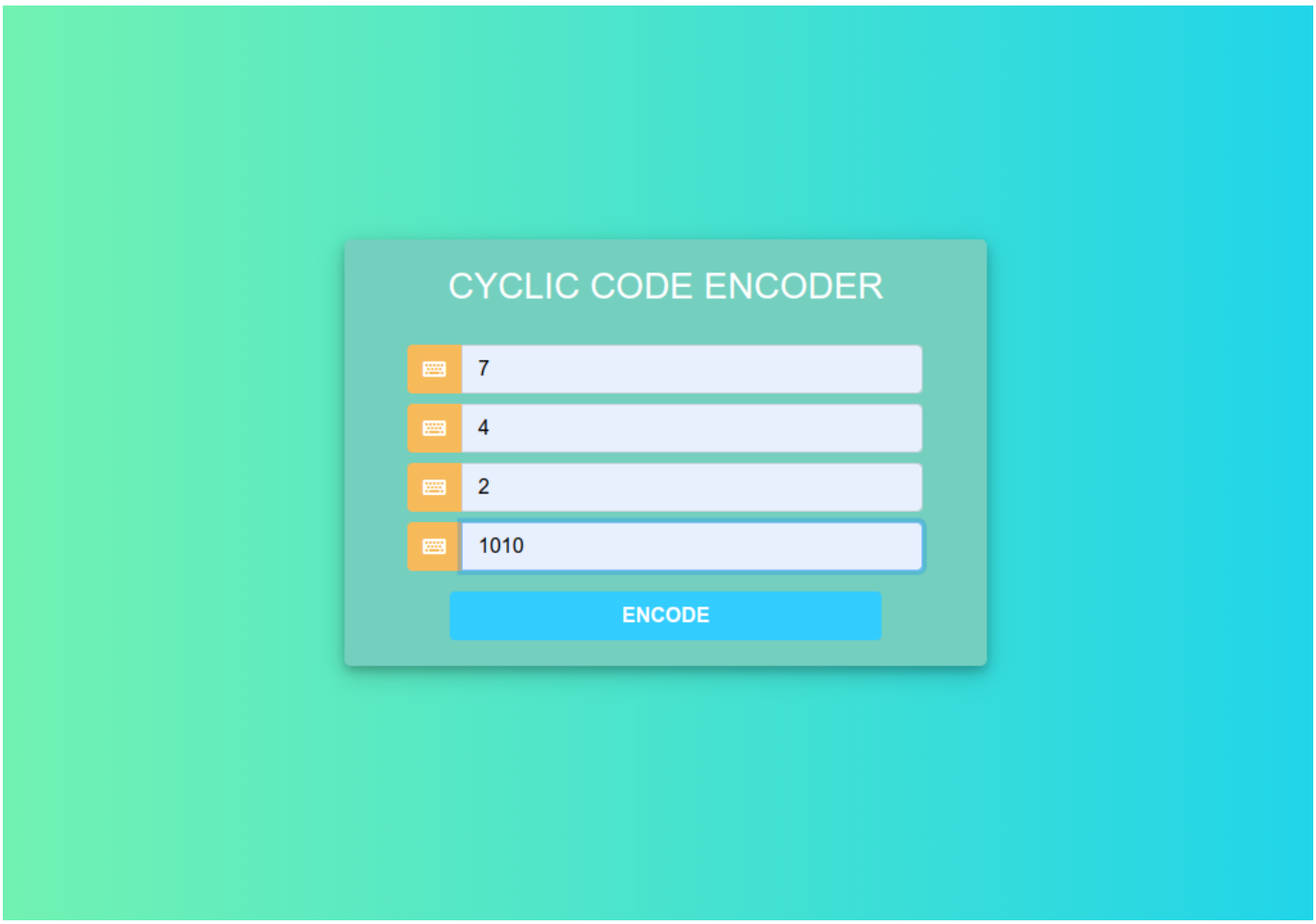
The Cyclic Code Encoder is a web application built using Django, a Python web framework.
It provides a simple frontend interface for users to input data and encode it using $\mathbf{[n, k]_q}$ cyclic codes using a randomly generated Generator Polynomial.
The backend of the application utilizes Django's redirect view to allow users to redirect to a specified URL by clicking on a "Encode" button.
It serves as a basic example of how to implement Cyclic Code Encoder with a GUI using a web application with Django.

Run

1. Install python3
2. Create a virtual environment
   `python -m venv env`
3. Activate the virtual environment
   `source env/bin/activate`
4. Install Django using pip
   `pip install django`
5. Clone the github repository
   `git clone https://github.com/RajatSingh08/Cyclic-Code-Encoder`
6. Open the project folder
   `cd Cyclic-Code-Encoder/CyclicCodeEncoder/`
7. Run the following command
   `python manage.py runserver`
8. Open a web browser and search the following url
   `http://127.0.0.1:8000/`
9. Input the values of **n**, **k**, **q**, **data** and click "**ENCODE**"
10. To encode new data, click "**GO BACK**"

Screenshots


CYCLIC CODE ENCODER
Enter value of n
Enter value of k
Enter value of q
Message to be encoded...
ENCODE


CYCLIC CODE ENCODER
7
4
2
1010
ENCODE

CYCLIC CODE ENCODER

7

4

2

1010

Generator Polynomial

1*x + 1*x^2 + 1*x^3

Encoded Message

0110110

GO BACK