\*\*Project Title\*\*: Custom Implementation of `atoi` and `itoa` Functions in C

\*\*Description\*\*:

As part of my computer science coursework, I developed custom implementations of the `atoi` (ASCII to Integer) and `itoa` (Integer to ASCII) functions in C, showcasing my understanding of string manipulation, memory management, and control structures in low-level programming.

The `atoi\_cs330` function converts a string of numeric characters (with optional sign) into its corresponding integer value, handling both positive and negative numbers. The implementation avoids using the standard library function and includes error-checking for edge cases, such as empty strings.

The `itoa\_cs330` function performs the reverse operation, converting an integer into its string representation. It handles both positive and negative integers and dynamically allocates memory for the resulting string.

\*\*Skills Gained\*\*:

- String manipulation in C

- Dynamic memory allocation using `malloc`

- Error handling for edge cases

- Understanding of signed and unsigned integers

- Efficient use of control structures

This project demonstrates my ability to work with core C programming concepts, particularly in implementing standard library functions from scratch, which is crucial for system-level programming and embedded systems development.

\*\*Tools and Technologies\*\*: C, Standard I/O library, Dynamic memory allocation (malloc)

This project highlights my foundational programming skills, making me well-suited for software development internships that require a deep understanding of C and systems programming.