Programming Project:

Instructions:

- **The project is due by December 03, 2025.**
- **Your objective is to develop a Huffman coding compressor application [read chapter 16.3 for details].**
- **The application must support and have a prompt command for the following operations:**
  - **Read a file.**
  - **Display the character-insensitive frequency table of a file input (do not include spaces in table).**
  - **Display the prefix binary tree visualization that groups subtrees in parentheses of the frequency table.**
  - **Output the encoded string into a file.**
- **You must use the *BiTree* class from 'BiTree.h'.**
- **All classes that display content must inherit the *Object* class from 'Object.h'.**
- **All classes must be defined in header files and have a unique test cpp file.**
- **The header files can only use the libraries *iostream*, *fstream*, *string*, *sstream*, *cctype*, *iomanip*, *cmath*, 'Object.h', 'BiTree.h', and any header file your define.**
- **Your final submission must be a report that should include:**
  - **a summary of the Huffman coding compressor:**
    - **a description of what it does and its algorithm**
    - **a list of data structures it uses**
  - **the source codes with comments.**
  - **documentation file (.pdf or .md) that contains:**
    - **a description of each class that includes:**
      - **the class name**
      - **the name and type of each public field.**
      - **the pseudocode for each method that begins with the preconditions (what must be true before the call).**
    - **the pseudocode for each function that begins with the preconditions (what must be true before the call).**
    - **a flowchart or instructions on how to run your program.**
- **Cheating of any kind is prohibited and will not be tolerated.**
- **Violating and/or failing to follow any rules will result in an automatic zero (0) for the project.**