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Implementation of Parsing Table: The parsing table plays a central role in guiding the parsing process by determining state transitions according to input symbols. It is structured as a two-dimensional array, which enables the parsing operations.

Translation Function 'variablesToColNumber': This function is pivotal in the parsing process as it bridges the input strings and their corresponding representations in the parsing table. By associating input symbols like identifiers ('id'), arithmetic operators ('+', '*'), and parentheses ('(', ')') with their respective column indices in the parsing table, it establishes a connection, interpreting the input sequences.

Stack Management and Printing: The stack serves as a core data structure in the shift-reduce parsing algorithm, crucial for managing parsing states and executing reduction operations. The 'printStack' function is responsible for displaying the current state of the stack, offering valuable insights into the progression of the parsing process and aiding in debugging and understanding.

Parsing Function 'parseInput': At the heart of the parsing process lies the 'parseInput' function, creating the interaction between the parsing table, input strings, and stack operations. Utilizing guidance from the parsing table, this function navigates through the shift-reduce algorithm, adjusting the stack's state based on input tokens and executing reduction steps as directed by the parsing table. By traversing the input stream and applying parsing rules, 'parseInput' aims to determine the validity of input sequences, outputting whether the string is accepted or not.