Deliverable 4: Control Flow Graph & Cyclomatic Complexity Calculation

A. Control Flow Graph (CFG)

The control flow graph for the federalTax function has been generated.

It represents the flow of execution, including decision points (if conditions) and loops.

The graph is displayed above and includes:

- Start and End points

- Condition checks (e.g., checking if TaxBrackets is defined)

- Loop iterations over tax brackets

- Branching logic for different cases

B. Cyclomatic Complexity Calculation

Using McCabe?s Cyclomatic Complexity Formula:

$$V(G) = E - N + 2P$$

Where:

- E = 14 (Edges in the CFG)

- N = 12 (Nodes in the CFG)

- P = 1 (Single function, single connected component)

$$V(G) = 14 - 12 + 2(1) = 3$$

Cyclomatic Complexity = 3, meaning:

- The function has 3 independent paths.

- It is moderately complex but still manageable for testing.