IT-314
Lab Assignment : 7

Student Name: JIMIT MEHTA

Student ID: 202201340

I. PROGRAM INSPECTION:

1. How many errors are there in the program? Mention the errors you have identified.

A. Data Reference Errors:

1. Uninitialized Variables:

- mHead and mListForFree (Line 418): Initialized to nullptr but not always reset after memory deallocation, leading to potential dangling pointers or uninitialized access.

```
    T* allocate() {

        T* tmp = mHead;

        if (!tmp) {

            tmp = performAllocation();

        }

        mHead = *reinterpret_cast_no_cast_align_warning<T**>(tmp);

        return tmp;

    }
```

2. Array Bound Violations:

- shiftUp and shiftDown operations: No checks ensure that the index is within the array bounds.

```
while (--idx != insertion_idx) {
```

```
            mKeyVals[idx] = std::move(mKeyVals[idx - 1]);

        }
```

3. Dangling Pointers:

- In BulkPoolAllocator: The reset() method frees memory but does not reset the pointer to nullptr.

```
std::free(mListForFree);
```

B. Errors in Data Declarations:

1. **Possible Data Type Incompatibilities:**
    - In the hash_bytes function, casting between various data types is common. If there's a mismatch in the size or characteristics of these types, it can result in unexpected behavior.
2. **Confusing Variable Names:**
    - The use of similar variable names, like mHead, mListForFree, and mKeyVals, can create confusion. This may complicate code modifications or debugging efforts.

C. Computation Errors:

1. Integer Overflow:

- In the hash_bytes function, the hash calculations involve multiple shifts and multiplications with large integers. This can lead to overflow when the resulting value exceeds the maximum permissible limit.2. Off-by-One Errors:

- Within the shiftUp and shiftDown functions, off-by-one errors may arise in the loop conditions, especially if the size of the data structure is not accurately accounted for.

```
while (--idx != insertion_idx)
```

D. Comparison Errors:

1. Incorrect Boolean Comparisons:

- In cases where multiple logical operations are combined, like in findIdx, incorrect use of && and || can result in inaccurate evaluations.

```
if (info == mInfo[idx] &&

                ROBIN_HOOD_LIKELY(WKeyEqual::operator()(key,
mKeyVals[idx].getFirst()))) {

                return idx;

            }
```

2. Mixed Comparisons:

- In certain instances, comparing different types (such as signed and unsigned integers) can produce incorrect results, depending on the system or compiler used.

E. Control-Flow Errors:

1. In functions such as shiftUp and shiftDown, there's a risk that the loops may run indefinitely if the conditions for termination are never met.

F. Interface Errors:

1. Mismatched Parameter Attributes:

- Function calls: Functions like insert_move may encounter parameter mismatches, where the arguments provided do not align with the expected attributes (such as data type and size).

```
insert_move(std::move(oldKeyVals[i]));
```

2. Global Variables:

- When multiple functions or procedures use the same global variable, it's crucial to maintain consistent usage and ensure proper initialization. Although this might not be obvious at first, it can lead to errors as the codebase grows.

G. Input/Output Errors:

1. Missing File Handling:

- Although the code does not interact with files directly, any extension involving I/O operations could lead to common file handling errors, such as failing to close files, not checking for end-of-file conditions, or inadequate error handling.

2. Which category of program inspection would you find more effective?

Category A: This category is crucial due to the reliance on manual memory management, pointers, and dynamic data structures. Mistakes in pointer dereferencing and memory management—such as improper allocation or deallocation—can result in severe problems like crashes, segmentation faults, or memory leaks. Therefore, it is vital to prioritize addressing these errors. Additionally, it's important to also consider Computation Errors and Control-Flow Errors, particularly in large-scale projects.

3. Which type of error you are not able to identified using the program inspection?

Concurrency Issues:

- **Lack of Multi-threading Considerations:**
    - The inspection fails to account for issues associated with multi-threading or concurrency, including race conditions and deadlocks. If the program is extended to support multi-threading, it will be essential to consider shared resources, locking mechanisms, and thread safety.

Dynamic Errors:

- **Runtime Context Mistakes:**
    - Some errors, such as memory overflow, underflow, or those linked to the runtime environment, may only become apparent when the code is executed in a real-world setting.

4. Is the program inspection technique is worth applicable?

Yes, the program inspection method is highly effective, especially for uncovering static errors that compilers may miss, including problems with pointer management, violations of array bounds, and incorrect control flow. While it may not catch every dynamic error or concurrency-related bug, it remains an essential step in maintaining code quality, particularly in memory-sensitive applications like this C++ implementation of hash tables.

II. CODE DEBUGGING

A. Armstrong

1. How many errors are there in the program? Mention the errors you have identified.

Identified Errors in the Program:

1. **Incorrect Calculation of Remainder:**
   - The line remainder = num / 10; should be corrected to remainder = num % 10; to accurately extract the last digit of the number.
2. **Incorrect Update of num:**
   - The line num = num % 10; should be modified to num = num / 10. We need to remove the last digit from num after processing it, rather than taking its remainder again.

2. How many breakpoints you need to fix those errors ?

Two breakpoints:

1. On the line where the remainder is calculated (remainder=num 10;).

2. On the line where num is updated (num = num % 10;).

a. What are the steps you have taken to fix the error you identified in the code fragment?

- Step 1: Fix the calculation of the remainder to correctly extract the last digit (remainder = num % 10;).
- Step 2: Correctly update num to remove the last digit (num = num / 10;).

B. GCD and LCM

1. How many errors are there in the program? Mention the errors you have identified.

1. **Logical Error in the GCD Method:**

   The condition in the while loop is flawed. It should be while (a % b != 0) instead of while (a % b == 0). The original condition may lead to an infinite loop if b is not a divisor of a.

2. **Logical Error in the LCM Method:**

   The check to determine if a is a multiple of both x and y is incorrect. It should be if (a % x == 0 && a % y == 0) rather than if (a % x != 0 && a % y != 0).

2. How many breakpoints do you need to fix those errors?

You need two breakpoints to debug and resolve the identified errors:

- A breakpoint at the beginning of the gcd method will allow you to monitor the values of a, b, and r.

● A breakpoint at the beginning of the lcm method to examine the initial value of a and track how it changes during the loop.

a. What are the steps you have taken to fix the errors you identified in the code fragment?

- **Fixing the GCD Method:**
- Updated the condition in the while loop from while (a % b == 0) to while (a % b != 0) to properly implement the Euclidean algorithm for calculating the GCD.
- **Fixing the LCM Method:**
- Changed the condition in the if statement from if (a % x != 0 && a % y != 0) to if (a % x == 0 && a % y == 0) to ensure the method correctly identifies when a is a multiple of both x and y.

C. Knapsack

1. How many errors are there in the program? Mention the errors you have identified.

There are three primary errors in the program:

● **Array Indexing Issue**: The line int option1 = opt[n++][w]; incorrectly increments n, which can lead to out-of-bounds access in subsequent iterations. It should be int option1 = opt[n][w]; instead.

● **Incorrect Profit Calculation**: In the line int option2 = profit[n-2] + opt[n-1][w-weight[n]];, the program mistakenly uses profit[n-2] instead of profit[n] to compute the profit for the current item.

● **Weight Condition Logic**: While the condition for including the item is correct, the calculation for `option2` should only take place if the item's weight does not exceed the current weight limit (w).

2. How many breakpoints do you need to fix those errors?

- **Start of the Nested Loop:**

- Place a breakpoint at the beginning of the nested loop to inspect the values of n, w, opt[n][w], and any other relevant variables.

- **Before Assignment of option1:**

- Set a breakpoint just before the assignment of option1 to monitor how the value of n is changing.

- **After Assignment of option2:**

- Add a breakpoint following the assignment of option2 to validate the calculations for both option1 and option2.

a. What are the steps you have taken to fix the error you identified in the code fragment?

- **Fixing Array Indexing:**

- Changed int option1 = opt[n++][w]; to int option1 = opt[n][w]; to prevent incorrect incrementing of n.

- **Correcting Profit Calculation:**

- Modified the line int option2 = profit[n-2] + opt[n-1][w-weight[n]]; to int option2 = profit[n] + opt[n-1][w-weight[n]]; to reference the profit of the correct item.

- **Adjusting Weight Condition Logic:**

- Added a condition to ensure that option2 is only calculated if the current item's weight does not exceed w, preventing incorrect profit calculations for items that cannot be included.

D. Magic Number

1. How many errors are there in the program? Mention the errors you have identified.

There are four errors in the program:

- **Logical Error in the Inner Loop:**

- The condition in the line while (sum == 0) should be corrected to while (sum != 0). The current condition prevents the loop from executing when sum is zero, which is incorrect.

- **Incorrect Calculation in the Inner Loop:**

- The line s = s * (sum / 10); should be changed to s = s + (sum % 10); to accurately accumulate the sum of the digits.

- **Missing Semicolon:**

- The line sum = sum % 10 is missing a semicolon at the end. It should be sum = sum % 10;.

- **Logical Error in the While Loop:**

- The condition for the outer loop should be updated from while (num > 9) to while (num > 9 || num == 0) to correctly handle cases where the number becomes zero.

2. How many breakpoints do you need to fix those errors?

You will need three breakpoints to effectively debug and resolve the errors:

1. Place a breakpoint at the start of the inner loop to observe the values of sum and s.

2. Set a breakpoint at the beginning of the outer loop to check the current value of num.
3. Add a breakpoint before the final if statement to verify the final value of num before determining the magic number.

a. What are the steps you have taken to fix the error you identified in the code fragment?

1. **Fixing the Inner Loop Condition:**
   - Changed while (sum == 0) to while (sum != 0) to ensure the loop continues iterating as long as there are digits left to process.
2. **Correcting the Digit Summation Logic:**
   - Updated the line s = s * (sum / 10); to s = s + (sum % 10); to correctly accumulate the sum of the digits.
3. **Adding the Missing Semicolon:**
   - Added a semicolon at the end of sum = sum % 10;.
4. **Adjusting the Outer Loop Condition:**
   - Modified the outer loop condition from while (num > 9) to while (num > 9 || num == 0) to account for the case where num may become zero.

E. Merge Sort

1. How many errors are there in the program? Mention the errors you have identified.

There are four main errors in the program:

➢ **Incorrect Array Slicing:**

- The lines int[] left = leftHalf(array + 1); and int[] right = rightHalf(array - 1); are incorrect, as you cannot slice arrays by adding or subtracting integers. The array should be properly divided into halves.

➢ **Invalid Parameters in Recursive Calls:**

- When calling merge(array, left++, right--);, using the increment (++) and decrement (--) operators on arrays is not valid. The arrays should be passed directly as they are.

➢ **Incorrect Size Calculation for Left and Right Halves:**

- The size calculations in leftHalf and rightHalf should account for the entire array. The size for the left half should be calculated as (array.length + 1) / 2 to properly handle arrays with odd lengths.

➢ **Missing Merging Logic:**

- In the merge method, the original array (result) should not be passed in the current manner. Instead, it should be the original array passed to the merge sort function that gets modified. This logic needs to be integrated correctly.

2. How many breakpoints do you need to fix those errors?

You would need three breakpoints to effectively debug and fix the errors:

1. Set a breakpoint at the beginning of the mergeSort method to inspect how the array is being split and what the left and right halves are.

2. Set a breakpoint before the merge operation to check the contents of the left and right arrays.

3. Set a breakpoint inside the merge method to see how elements are being merged back into the original array.

a. What are the steps you have taken to fix the error you identified in the code fragment?

1. **Correcting Array Slicing**:

   - Instead of using int[] left = leftHalf(array + 1); and int[] right = rightHalf(array - 1);, change it to correctly split the array using Arrays.copyOfRange.

2. **Fixing Parameters in Recursive Calls**:

   - Update the call to merge by passing the arrays directly without using the increment/decrement operators: merge(array, left, right);.

3. **Adjusting Size Calculations**:

   - Modify the size calculations in the leftHalf and rightHalf methods to (array.length + 1) / 2 for the left half and calculate the remaining size for the right half.

4. **Merging Logic**:

   - Ensure that the merge method correctly combines the sorted arrays back into the original array, integrating the logic properly.

F. Multiply metrics

1. How many errors are there in the program? Mention the errors you have identified.

There are five main errors in the program:

1. **Array Indexing Errors**: In the line sum = sum + first[c-1][c-k] * second[k-1][k-d];, the indices c-1 and k-d are incorrect. They should use c and k for proper indexing, as matrix elements start from index 0.
2. **Uninitialized Variables**: The variable sum is being reused without resetting in the inner loop, which can lead to incorrect calculations in subsequent iterations. It should be reset to 0 at the beginning of each c and d iteration.
3. **Wrong Output Input Prompt**: The input prompt for the second matrix incorrectly states, “Enter the number of rows and columns of the first matrix” instead of “Enter the number of rows and columns of the second matrix.”
4. **Multiplication Logic Issue**: The multiplication logic must access the matrix elements correctly. The correct formula for matrix multiplication is first[c][k] * second[k][d].
5. **Potential Readability Issue**: The output formatting is somewhat misleading, as it displays the product matrix without a proper header or format.

2. How many breakpoints do you need to fix those errors?

You will need three breakpoints to effectively debug and resolve the errors:

1. Place a breakpoint inside the multiplication loop to inspect the indices and the values being multiplied.
2. Set a breakpoint before printing the multiplication results to examine the contents of the multiplication array.

3. Add a breakpoint after reading the second matrix to confirm that the inputs are being read correctly.

a. What are the steps you have taken to fix the error you identified in the code fragment?

1. Correcting Array Indexing:

- Change sum = sum + first[c-1][c-k] * second[k-1][k-d]; to sum = sum + first[c][k] * second[k][d]; to correctly access the elements of the matrices.

2. Resetting Variables:

- Move the reset of the sum variable to the beginning of the inner loop for d to ensure it starts fresh for each element calculation: sum = 0; should be at the start of the for (d = 0; d < q; d++) loop.

3. Fixing Input Prompts:

- Update the prompt for the second matrix to say “Enter the number of rows and columns of the second matrix”.

4. Adjusting Output Formatting:

- Consider adding headers to clarify that the following output is the product matrix.

G. Quadratic Probing

1. How many errors are there in the program? Mention the errors you have identified.

There are several errors in the program:

1. **Syntax Error in the Insert Method**: The line i + = (i + h / h--) % maxSize; contains a space in the += operator, which causes a compilation error.

2. **Incorrect Hashing Logic**: The line i = (i + h * h++) % maxSize; is incorrect because it modifies h within the loop, which can lead to an infinite loop.

3. **Key Removal Logic**: In the remove method, currentSize-- is decremented twice, resulting in incorrect size management.

4. **Uninitialized Value Printing**: When printing the hash table, the output may include null values or be improperly formatted.

5. **Clear Method Logic**: The makeEmpty method does not clear the actual objects in the arrays, leading to potential memory issues.

4o mini

2. How many breakpoints do you need to fix those errors?

To fix these errors, you would need the following breakpoints:

1. Breakpoint on the Insert Method: Before the line containing the i + = operator to check the current value of i.

2. Breakpoint on the Hash Method: To observe how the hash value is calculated for different keys.

3. Breakpoint on the Remove Method: To ensure the correct key is being removed and to check the state of the hash table after the removal.

4. Breakpoint in the Print Method: To validate the correct values are being printed from the hash table.

a. What are the steps you have taken to fix the error you identified in the code fragment?

1. Correcting the Insert Method: Remove the space in the += operator and correct the logic for incrementing h.

2. Fixing the Hash Method: Ensure that the hashing algorithm doesn't modify h directly and doesn't lead to an infinite loop.

3. Updating Removal Logic: Adjust the remove method to ensure currentSize is only decremented once after a successful removal.

4. Enhancing Print Logic: Add checks to avoid printing null values and ensure that the output format is clear.

5. Adjusting the Make Empty Logic: Modify the makeEmpty method to reset the actual contents of the keys and values arrays.

H. Sorting Array

1. How many errors are there in the program? Mention the errors you have identified.

There are several errors in the program:

1. Class Name Error: The class name Ascending _Order contains a space, which is not allowed in Java. It should be AscendingOrder.

2. Incorrect Loop Condition: The outer loop for (int i = 0; i >= n; i++); has an incorrect condition (i >= n), which will cause it to never execute. The correct condition should be i < n.

3. Unnecessary Semicolon: There is an unnecessary semicolon at the end of the outer loop declaration (for (int i = 0; i >= n; i++);), which ends the loop prematurely.

4. Sorting Logic: The comparison in the sorting condition is incorrect. It should be if (a[i] > a[j]) to ensure that the smaller number is placed before the larger number.

5. Output Formatting: The final output will have an extra comma if the elements are printed directly. It should be formatted correctly to avoid trailing commas.

2. How many breakpoints do you need to fix those errors?

To fix these errors, you will need the following breakpoints:

1. **Breakpoint on Class Declaration**: To verify the correct naming of the class.
2. **Breakpoint on Outer Loop**: To observe the initial value of i and ensure that the loop condition is correct.
3. **Breakpoint on Sorting Logic**: To validate the values of a[i] and a[j] before and after swapping.
4. **Breakpoint on Output**: To check the formatting of the output and ensure it does not include unwanted commas.

a. What are the steps you have taken to fix the error you identified in the code fragment?

1. Renaming the Class: Change the class name from Ascending _Order to AscendingOrder.

2. Correcting the Loop Condition: Change the loop condition from i >= n to i < n.

3. Removing the Semicolon: Remove the unnecessary semicolon after the outer loop declaration.

4. Fixing the Sorting Logic: Change the condition in the sorting logic to if (a[i] > a[j]).

5. Formatting the Output: Update the output logic to avoid trailing commas.

I. Stack Implementation

1. How many errors are there in the program? Mention the errors you have identified.

There are several errors in the program:

1. **Incorrect Logic in push Method**: The line top--; should be changed to top++; because we want to increment the top index to push the value onto the stack.

2. **Incorrect Logic in pop Method**: The line top++; should be corrected to top--; because we want to decrement the top index to remove the top element from the stack.

3. **Incorrect Condition in display Method**: The loop condition for (int i = 0; i > top; i++) is incorrect. It should be i <= top to ensure all elements in the stack are displayed.

4. **Handling Stack Underflow**: The pop method should return the value being popped. This can be achieved by storing the value before decrementing top.

5. **Displaying the Stack Contents**: The output format may be misleading because the elements are not displayed correctly after popping.

2. How many breakpoints do you need to fix those errors?

To fix these errors, you would need the following breakpoints:

1. Breakpoint on push Method: To check the value of top before and after the increment.

2. Breakpoint on pop Method: To observe the value being popped and the state of top.

3. Breakpoint on display Method: To verify the loop condition and ensure all elements are printed correctly.

a. What are the steps you have taken to fix the error you identified in the code fragment?

1. Corrected Logic in push Method: Change top--; to top++; so that the next element is added at the correct index.

2. Corrected Logic in pop Method: Change top++; to top--; to ensure the top element is correctly removed from the stack.

3. Updated Loop Condition in display Method: Change i > top to i <= top so that all elements in the stack are displayed.

4. Return Value in pop Method: Modify the pop method to return the value that was popped from the stack.

5. Adjust the Display Logic: Ensure the display method properly reflects the current state of the stack after popping elements.

J. Tower of Hanoi

1. How many errors are there in the program? Mention the errors you have identified.

There are several errors in the program:

1. **Incorrect Increment and Decrement in Recursive Call**: The line doTowers(topN++, inter--, from + 1, to + 1) is incorrect. The post-increment (++) and post-decrement (--) operators are used improperly in this context, as they do not modify the values passed to the function.
2. **Missing Recursive Call for Disk Movement**: The logic for handling disk movements in the recursive calls is inaccurate, resulting in incorrect calculations.
3. **Printing Issues**: The final output does not correctly match the expected movements of the disks due to the improper handling of parameters.

2. How many breakpoints do you need to fix those errors?

You would need the following breakpoints to fix the errors:

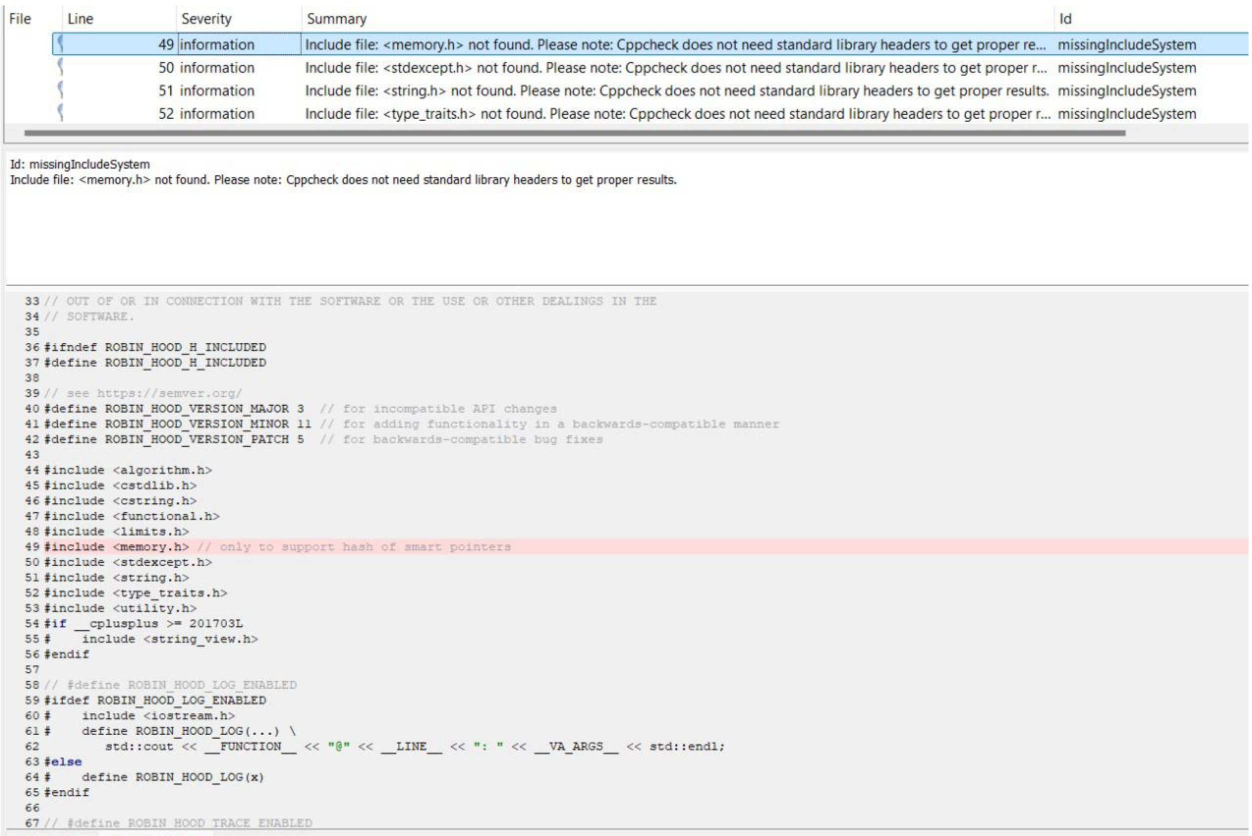
1. **Breakpoint on the first doTowers call**: To check the values of topN, from, inter, and to before executing the recursive calls.
2. **Breakpoint before the printing statement**: To observe the correct flow of disk movements.
3. **Breakpoint on the second doTowers call**: To ensure the parameters are being correctly passed after the first recursive call.

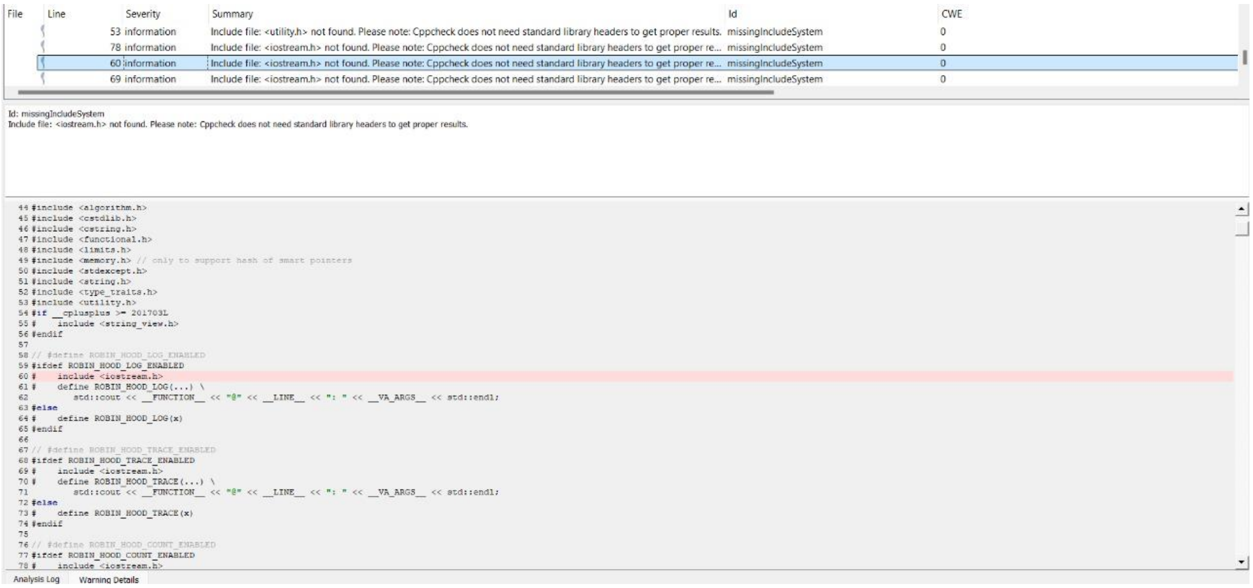
a. What are the steps you have taken to fix the error you identified in the code fragment?

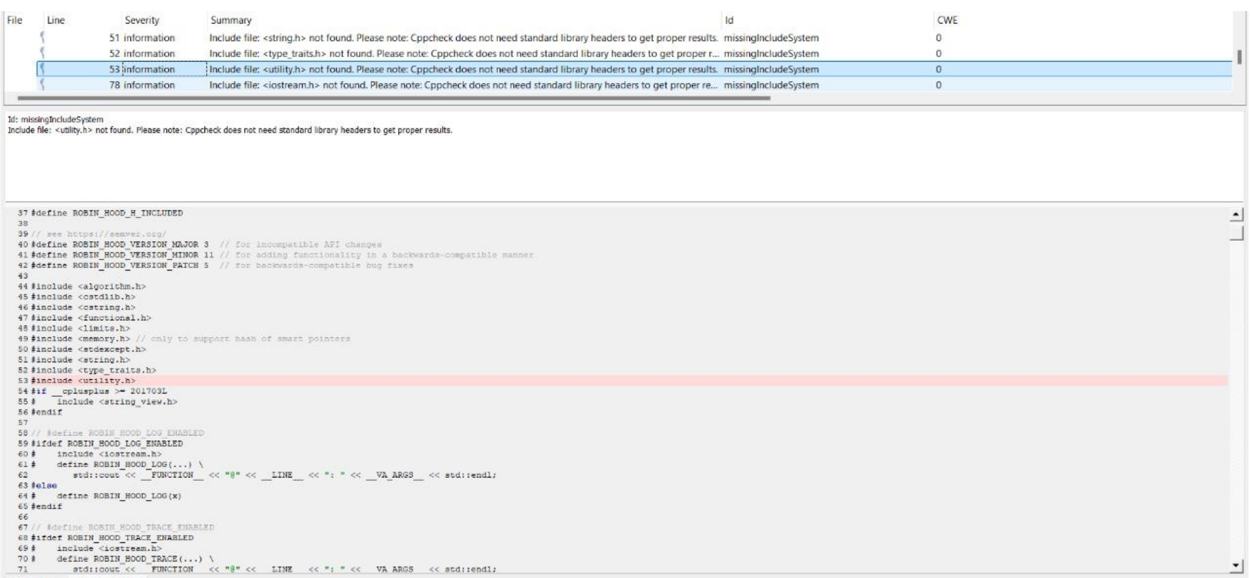
1. **Corrected Recursive Call**: Change doTowers(topN++, inter--, from + 1, to + 1) to doTowers(topN - 1, inter, from, to) in the recursive call for moving the remaining disks.

2. **Removed Invalid Modifications**: Ensure that the values for from, inter, and to are not modified using post-increment and post-decrement operators. Instead, pass the original variables directly.
3. **Clarified Disk Movement Logic**: Make sure the recursive logic correctly follows the Tower of Hanoi algorithm.

Static Analysis Tools




File Line Severity Summary Id CWE
53 information Include file: <utility.h> not found. Please note: Cppcheck does not need standard library headers to get proper results. missingIncludeSystem 0
78 information Include file: <iostream.h> not found. Please note: Cppcheck does not need standard library headers to get proper re... missingIncludeSystem 0
60 information Include file: <iostream.h> not found. Please note: Cppcheck does not need standard library headers to get proper re... missingIncludeSystem 0
69 information Include file: <iostream.h> not found. Please note: Cppcheck does not need standard library headers to get proper re... missingIncludeSystem 0
Id: missingIncludeSystem
Include file: <iostream.h> not found. Please note: Cppcheck does not need standard library headers to get proper results.
44 #include <algorithm.h>
45 #include <cstdlib.h>
46 #include <cstring.h>
47 #include <functional.h>
48 #include <limits.h>
49 #include <memory.h> // only to support hash of smart pointers
50 #include <stdexcept.h>
51 #include <string.h>
52 #include <type_traits.h>
53 #include <utility.h>
54 #if __cplusplus >= 201703L
55 #   include <string_view.h>
56 #endif
57
58 // #define ROBIN_HOOD_LOG_ENABLED
59 #ifdef ROBIN_HOOD_LOG_ENABLED
60 #   include <iostream.h>
61 #   define ROBIN_HOOD_LOG(...) \
62   std::cout << __FUNCTION__ << "@" << __LINE__ << ": " << __VA_ARGS__ << std::endl;
63 #else
64 #   define ROBIN_HOOD_LOG(x)
65 #endif
66
67 // #define ROBIN_HOOD_TRACE_ENABLED
68 #ifdef ROBIN_HOOD_TRACE_ENABLED
69 #   include <iostream.h>
70 #   define ROBIN_HOOD_TRACE(...) \
71   std::cout << __FUNCTION__ << "@" << __LINE__ << ": " << __VA_ARGS__ << std::endl;
72 #else
73 #   define ROBIN_HOOD_TRACE(x)
74 #endif
75
76 // #define ROBIN_HOOD_COUNT_ENABLED
77 #ifdef ROBIN_HOOD_COUNT_ENABLED
78 #   include <iostream.h>
Analysis Log
Warning Details


File Line Severity Summary Id CWE
51 information Include file: <string.h> not found. Please note: Cppcheck does not need standard library headers to get proper results. missingIncludeSystem 0
52 information Include file: <type_traits.h> not found. Please note: Cppcheck does not need standard library headers to get proper r... missingIncludeSystem 0
53 information Include file: <utility.h> not found. Please note: Cppcheck does not need standard library headers to get proper results. missingIncludeSystem 0
78 information Include file: <iostream.h> not found. Please note: Cppcheck does not need standard library headers to get proper re... missingIncludeSystem 0
Id: missingIncludeSystem
Include file: <utility.h> not found. Please note: Cppcheck does not need standard library headers to get proper results.
37 #define ROBIN_HOOD_H_INCLUDED
38
39 // see https://semver.org/
40 #define ROBIN_HOOD_VERSION_MAJOR 3 // for incompatible API changes
41 #define ROBIN_HOOD_VERSION_MINOR 11 // for adding functionality in a backwards-compatible manner
42 #define ROBIN_HOOD_VERSION_PATCH 5 // for backwards-compatible bug fixes
43
44 #include <algorithm.h>
45 #include <cstdlib.h>
46 #include <cstring.h>
47 #include <functional.h>
48 #include <limits.h>
49 #include <memory.h> // only to support hash of smart pointers
50 #include <stdexcept.h>
51 #include <string.h>
52 #include <type_traits.h>
53 #include <utility.h>
54 #if __cplusplus >= 201703L
55 #   include <string_view.h>
56 #endif
57
58 // #define ROBIN_HOOD_LOG_ENABLED
59 #ifdef ROBIN_HOOD_LOG_ENABLED
60 #   include <iostream.h>
61 #   define ROBIN_HOOD_LOG(...) \
62   std::cout << __FUNCTION__ << "@" << __LINE__ << ": " << __VA_ARGS__ << std::endl;
63 #else
64 #   define ROBIN_HOOD_LOG(x)
65 #endif
66
67 // #define ROBIN_HOOD_TRACE_ENABLED
68 #ifdef ROBIN_HOOD_TRACE_ENABLED
69 #   include <iostream.h>
70 #   define ROBIN_HOOD_TRACE(...) \
71   std::cout << __FUNCTION__ << "@" << __LINE__ << ": " << __VA_ARGS__ << std::endl;
Analysis Log
Warning Details