Technical Report:

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Assignment: Program 1

**Issue #1**

*Description of the Error*

*Syntax Issues: Program 1 was unable to compile to an executable file when testing the ability to run the program. It gave statements that multiple functions were not declared within their scopes.*

*Reason for the Error*

*The header file Library.h was not included in the main.cpp and Library.cpp files.*

*Solution*

*Documented #include “Library.h” in the main.cpp and Library.cpp.*

**Issue #2**

*Description of the Error*

*Run-Time Issue: Once compiled when executing Program 1 and choosing a menu selection, it allows the user to input information based on which menu selection is chosen. However, once the input has been entered the Program will crash and continue to run indefinitely until stopped manually.*

*Reason for the Error*

*In Library.cpp inside the Insert Function at the While loop the initial variable states that while (ptr !=NULL). Ptr is not initially set to NULL, the PrevPtr variable is. Because of this mix up with variables the computer is not able to correctly point to either the previous or the next node causing the program to crash during run time.*

*Solution*

*Corrected the variable mix up by changing (ptr !=NULL) to While (prevPtr !=NULL).*

**Issue #3**

*Description of the Error*

*Logical Error*

*Warning while executing file shows in main.cpp “while (showMenu = TRUE)” will give an error in calculating a correct value.*

*Reason for the Error*

*showMenu = true, should be implemented as showMenu == true because it is a Boolean variable and was already set to true.*

*Solution*

*Corrected the showMenu = true, to showMenu == true.*

**Issue #4**

*Description of the Error*

*Logical Error*

*Warning while executing file shows in Library.cpp in the bool Library::erase(const KeyType &key) function [if (prevPtr = NULL)] will give an error in calculating a correct value.*

*Reason for the Error*

*[if (prevPtr = NULL)] needs to be implemented as [if (prevPtr == NULL)] because prevPtr is already set to NULL so the if statement is checking as long as prevPtr is still NULL, if not, then the if statement will not initiate, and the while loop will progress to the else statement within the first if statement.*

*Solution*

*Corrected if statement to [if (prevPtr == NULL)] so that when executed will give the correct values as the while loop is executed.*

**Issue #5**

*Description of the Error*

*Programming Style Issues*

*While reading through the main.cpp and Library.cpp I came across multiple sections of program that have did not have the correct coding standards when writing IF/ELSE statements.*

*Reason for the Error*

*Multiple functions in Library.cpp and the void addArticle(Library &article) function in the main.cpp file did not have {} in their IF/ELSE statements to keep the conditions within each statement organized and easy to read.*

*Solution*

*I went through each file of Program 1 and corrected each IF/ELSE statement that needed organized {} to contain their conditions when the statements are implemented.*

**Issue #6**

*Description of the Error*

*Programming Style Issue: In the main.cpp there is a continuous loop when trying to put in a new article to the linked list.*

*Reason for the Error*

*In the while loop in Void addArticle function in Main.cpp after it runs through the IF/ELSE statements it will not break after validEntry is set to false in the else statement.*

*Solution*

*I added a “break;” in the Else statement when the validEntry is set to false. This breaks the while loop and will add the new article to the linked list within the program.*

**Issue #7**

*Description of the Error*

*Syntax Issue: While reviewing the Library.cpp, main.cpp, and Library.H file, Library.H had issues with its layout.*

*Reason for the Error*

*The header file Library.H did not include the guards “#ifndef LIBRARY\_H”, “#define LIBRARY\_H”, and “#endif”. Because of this errors when compiling and running the program it would give warnings that there were duplicate definitions of the functions of Program 1.*

*Solution*

*Added all three guards in the header file. #ifdef and #define on the top of the header file, and #endif at the bottom of the file once all the functions that were needed in Program 1 had been declared.*