Module 3: Critical Thinking

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CSC450: Programming III

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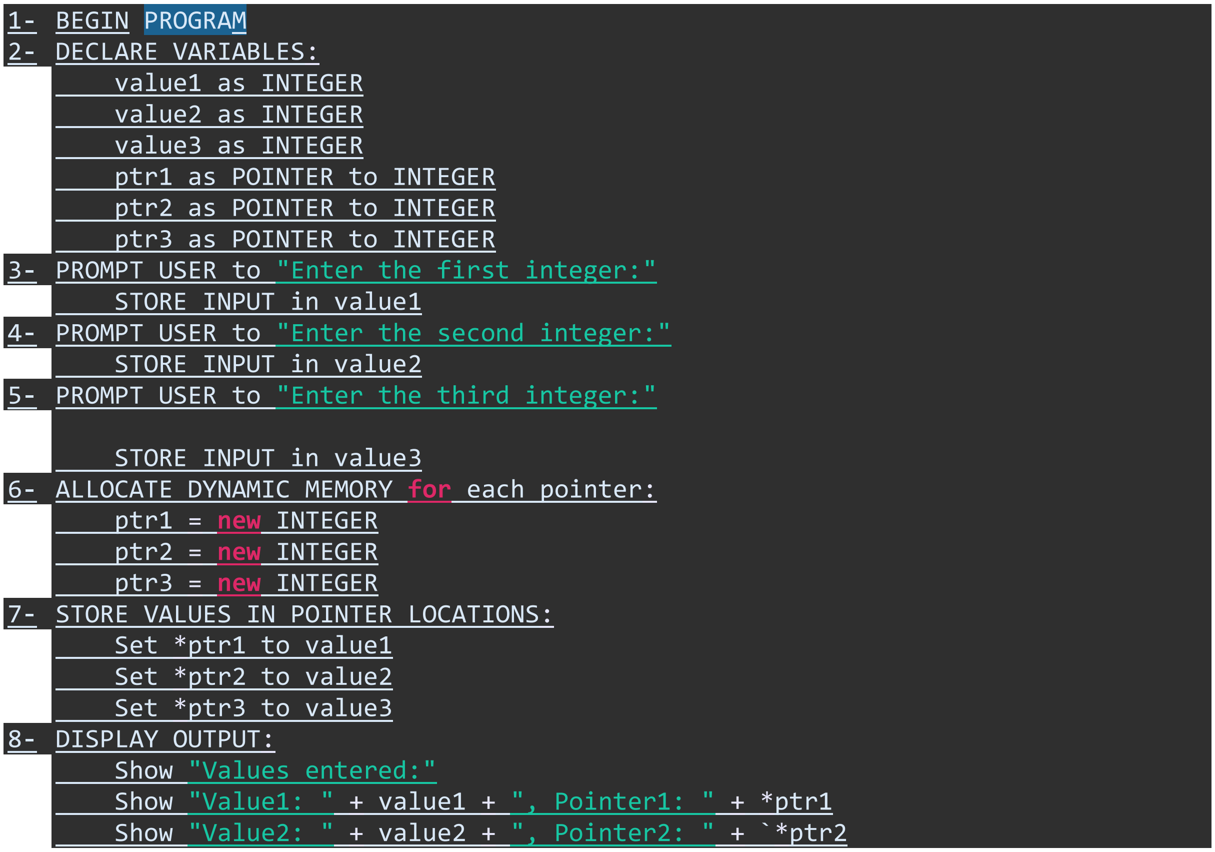
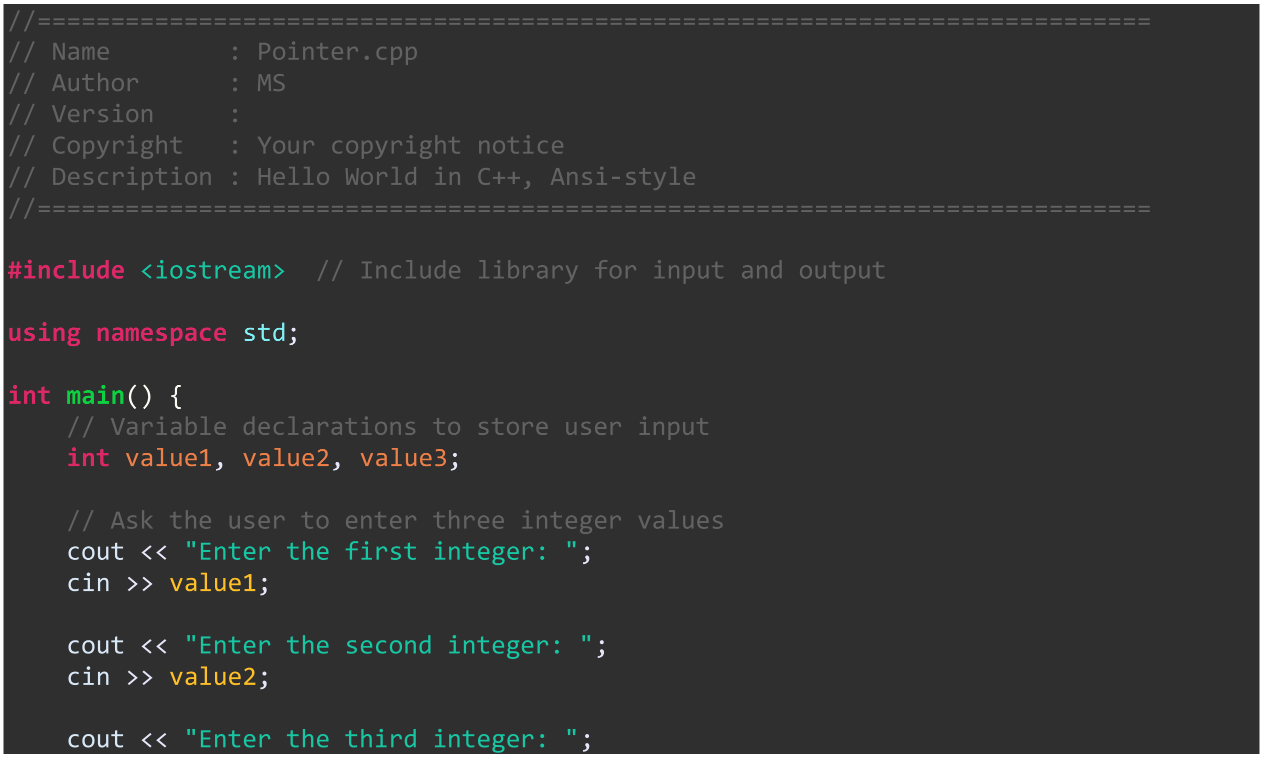
1- Pseudocode



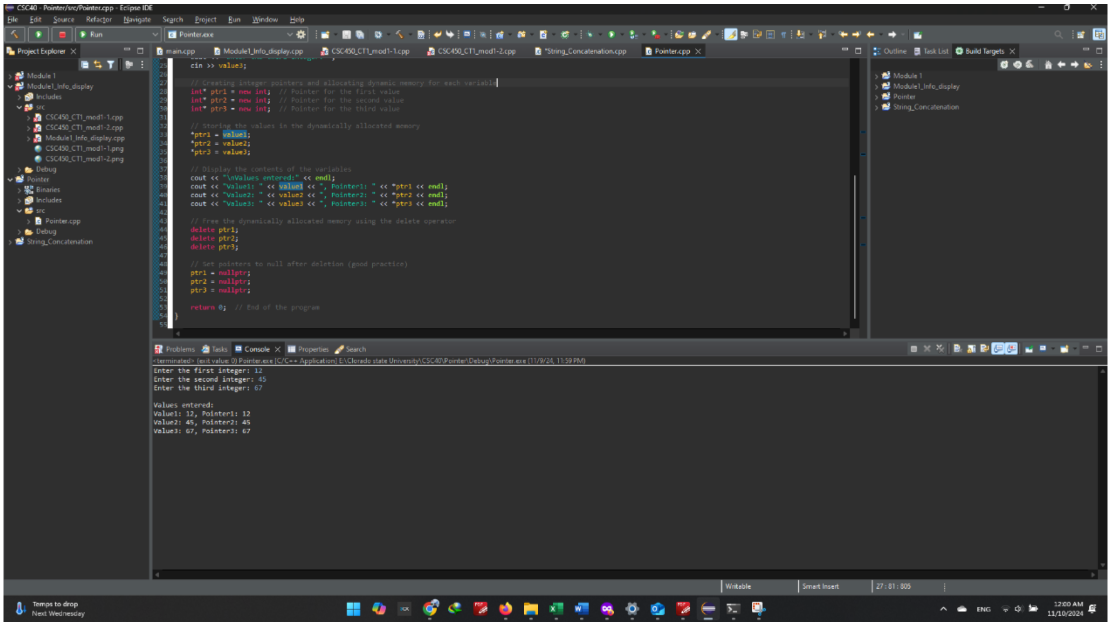
```
1- BEGIN PROGRAM
2- DECLARE VARIABLES:
       value1 as INTEGER
       value2 as INTEGER
       value3 as INTEGER
       ptr1 as POINTER to INTEGER
       ptr2 as POINTER to INTEGER
       ptr3 as POINTER to INTEGER
3- PROMPT USER to "Enter the first integer:"
       STORE INPUT in value1
4- PROMPT USER to "Enter the second integer:"
       STORE INPUT in value2
5- PROMPT USER to "Enter the third integer:"

       STORE INPUT in value3
6- ALLOCATE DYNAMIC MEMORY for each pointer:
       ptr1 = new INTEGER
       ptr2 = new INTEGER
       ptr3 = new INTEGER
7- STORE VALUES IN POINTER LOCATIONS:
       Set *ptr1 to value1
       Set *ptr2 to value2
       Set *ptr3 to value3
8- DISPLAY OUTPUT:
       Show "Values entered:"
       Show "Value1: " + value1 + ", Pointer1: " + *ptr1
       Show "Value2: " + value2 + ", Pointer2: " + `*ptr2
```

2- Source code:



```cpp
//============================================================================
// Name        : Pointer.cpp
// Author      : MS
// Version     :
// Copyright   : Your copyright notice
// Description : Hello World in C++, Ansi-style
//============================================================================

#include <iostream>  // Include library for input and output

using namespace std;

int main() {
    // Variable declarations to store user input
    int value1, value2, value3;

    // Ask the user to enter three integer values
    cout << "Enter the first integer: ";
    cin >> value1;

    cout << "Enter the second integer: ";
    cin >> value2;

    cout << "Enter the third integer: ";
    cin >> value3;

    // Creating integer pointers and allocating dynamic memory for each variable
    int* ptr1 = new int;  // Pointer for the first value
    int* ptr2 = new int;  // Pointer for the second value
    int* ptr3 = new int;  // Pointer for the third value

    // Storing the values in the dynamically allocated memory
    *ptr1 = value1;
    *ptr2 = value2;
    *ptr3 = value3;

    // Display the contents of the variables
    cout << "\nValues entered:" << endl;
    cout << "Value1: " << value1 << ", Pointer1: " << *ptr1 << endl;
    cout << "Value2: " << value2 << ", Pointer2: " << *ptr2 << endl;
    cout << "Value3: " << value3 << ", Pointer3: " << *ptr3 << endl;

    // Free the dynamically allocated memory using the delete operator
    delete ptr1;
    delete ptr2;
    delete ptr3;

    // Set pointers to null after deletion (good practice)
    ptr1 = nullptr;
    ptr2 = nullptr;
    ptr3 = nullptr;

    return 0;  // End of the program
}
```

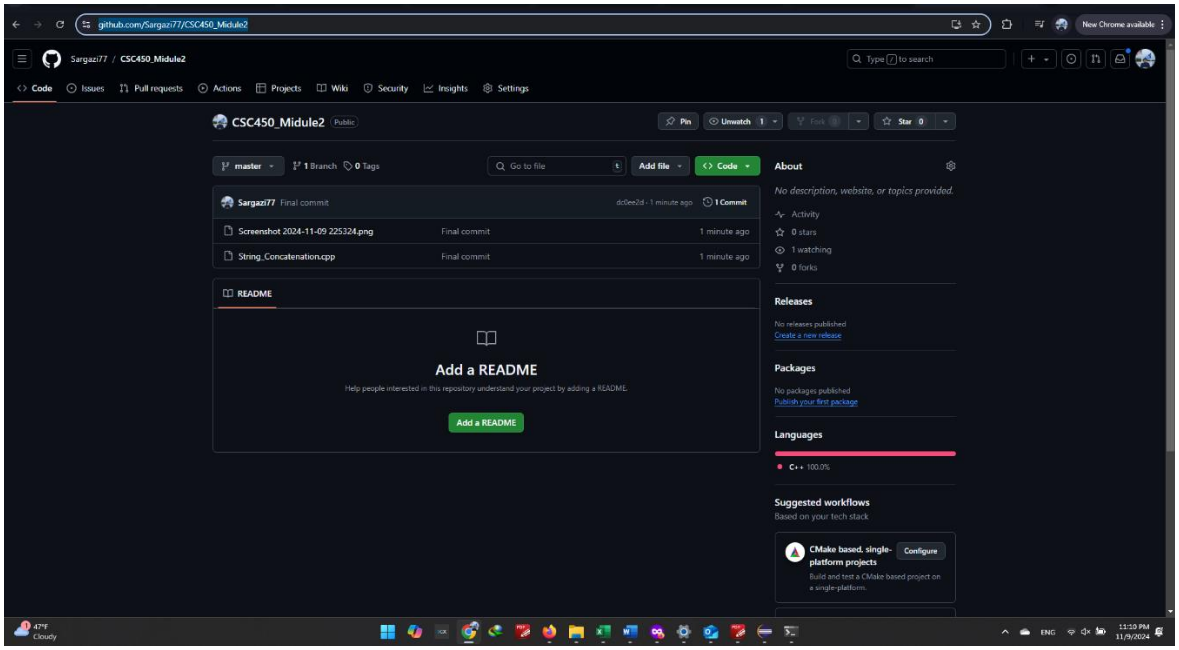
3- Screenshot



```
    cin >> value3;

    // Creating integer pointers and allocating dynamic memory for each variable
    int* ptr1 = new int;  // Pointer for the first value
    int* ptr2 = new int;  // Pointer for the second value
    int* ptr3 = new int;  // Pointer for the third value

    // Storing the values in the dynamically allocated memory
    *ptr1 = value1;
    *ptr2 = value2;
    *ptr3 = value3;

    // Display the contents of the variables
    cout << "\nValues entered:" << endl;
    cout << "Value1: " << value1 << ", Pointer1: " << *ptr1 << endl;
    cout << "Value2: " << value2 << ", Pointer2: " << *ptr2 << endl;
    cout << "Value3: " << value3 << ", Pointer3: " << *ptr3 << endl;

    // Free the dynamically allocated memory using the delete operator
    delete ptr1;
    delete ptr2;
    delete ptr3;

    // Set pointers to null after deletion (good practice)
    ptr1 = nullptr;
    ptr2 = nullptr;
    ptr3 = nullptr;

    return 0;  // End of the program
}
```

```
<terminated> (exit value: 0) Pointer.exe [C/C++ Application] E:\Clorado state University\CSC40\Pointer\Debug\Pointer.exe (11/9/24, 11:59 PM)
Enter the first integer: 12
Enter the second integer: 45
Enter the third integer: 67

Values entered:
Value1: 12, Pointer1: 12
Value2: 45, Pointer2: 45
Value3: 67, Pointer3: 67
```

4- GitHub Screenshot



github.com/Sargazi77/CSC450_Midule2

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CSC450_Midule2 Public

master · 1 Branch · 0 Tags

Sargazi77 Final commit	dc0ee2d · 1 minute ago	1 Commit
Screenshot 2024-11-09 225324.png	Final commit	1 minute ago
String_Concatenation.cpp	Final commit	1 minute ago

README

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Build and test a CMake based project on a single-platform.

6- GitHub link:

https://github.com/Sargazi77/CSC450_module3