**Lab Mid Programming Task**

A secret vault opens only when a detective correctly computes a **unique unlocking code** based on three integers: **A**, **B**, and **C**, given as input.

Your task is to write a C++ program that :

1. Accepts integers A, B, and C as input.
2. Computes an **unlock value** according to these rules:
   * Step 1: Multiply A and B.
   * Step 2: If C is even, add the remainder of dividing (A + B) by C.
   * Step 3: If C is odd, subtract the smallest of the three numbers from the result.
   * Step 4: If the final result is divisible by 3, print **“Vault Unlocked”**, otherwise print **“Access Denied”**.
3. Uses at least one **user-defined function** to modularize your logic.

Code Compiled using Clang with CMake on MacOS

Paste Code Here:

#include <iostream>

bool isAccessAllowed(int a, int b, int c);

int main()

{

int a;

int b;

int c;

std::cout << "Enter the code with spaces between each number: ";

std::cin >> a >> b >> c;

if (isAccessAllowed(a, b, c))

{

std::cout << "Vault Unlocked!\n";

}

else

{

std::cout << "Access Denied!\n";

}

std::cin.ignore();

std::cin.get();

return 0;

}

bool isAccessAllowed(int a, int b, int c)

{

int pass = a \* b;

if (c % 2 == 0)

pass += (a + b) % c;

else

pass -= std::min(a, std::min(b, c));

if (pass % 3 == 0)

return true;

// pass is not divisible by 3

return false;

}

Paste Output Screenshot Here:



