Pass By Value and Reference

Instructions for submission: PPL Assignment 4
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Problem Statement:

Explain how pass by reference works, using assembly code generated using g++ -S on a C++ program.

Objectives:

1. To analyze the assembly language code.
2. To demonstrate how parameters to a function are passed by value and reference in assembly language.

Execution:

Steps to execute and submit the assignment:

1. Write a C/C++ Program to swap values of two numbers by taking two functions: One which takes parameters by value and other which takes parameters by reference.
2. Compile the program and generate its assembly equivalent file using >***gcc -S file4.c***
3. Analyze the parts in the assembly file that demonstrate how sway_by_value reads the parameters and how swap_by_reference reads the parameters.

   E.g. mov rax, -0x24(%rbp) //direct value for call_by_value

   mov (rax), -0x04(%rbp) //read value at address in rax for call_by_reference.

4. **Highlight** the sections of your code where parameters are used by reference and value in the main function as well as the swap functions and write the explanation of it.
5. Take screenshots of highlighted parts of assembly code(with your comments) or generate a text file with assembly code and corresponding comments for submission.