**Simple Convolution Implementation in EASy68K and RISC-V Without Loops**

**Objective:**

To implement a simple convolution operation on a 3x3 image matrix using a 2x2 kernel in both EASy68K and RISC-V assembly languages without utilizing loops.

**Description:**

This project involves creating two separate programs to perform a convolution operation on a small image matrix. The convolution will be implemented without using loops, which means each element of the output matrix will be calculated explicitly.

**Steps:**

1. **Define the Image and Kernel**:
   * Image Matrix: A 3x3 matrix with predefined values.
   * Kernel Matrix: A 2x2 matrix with predefined values.
2. **Manual Convolution Calculation**:
   * For each element in the output matrix, manually compute the sum of the element-wise multiplication of the image and kernel matrices.
3. **EASy68K Implementation**:
   * Write an EASy68K assembly program to perform the convolution.
   * Use direct addressing to access each element of the image and kernel matrices.
   * Store the results in the output matrix.
4. **RISC-V Implementation**:
   * Write a RISC-V assembly program to perform the convolution.
   * Use direct addressing to access each element of the image and kernel matrices.
   * Store the results in the output matrix.

**Example:**

Given the following image and kernel matrices:

**Image Matrix**:

1 2 3

4 5 6

7 8 9

**Kernel Matrix**:

-1 -2

0 1

**Output Calculation**:

* Output[0][0] = (1*-1) + (2*-2) + (4*0) + (5*1)
* Output[0][1] = (2*-1) + (3*-2) + (5*0) + (6*1)
* Output[1][0] = (4*-1) + (5*-2) + (7*0) + (8*1)
* Output[1][1] = (5*-1) + (6*-2) + (8*0) + (9*1)

**Deliverables:**

1. **EASy68K Program**:
   * Source code file (.X68) with comments explaining each step.
   * Screenshot of the program output.
2. **RISC-V Program**:
   * Source code file (.S) with comments explaining each step.
   * Screenshot of the program output.

**Tools:**

* **EASy68K**: An assembler for the Motorola 68000 microprocessor.
* **RISC-V Simulator**: A simulator for running RISC-V assembly code.

**Evaluation:**

* Correctness of the convolution operation.
* Proper use of assembly language features.
* Clarity and readability of the code with appropriate comments.