The following are detailed instructions:

1. 1)  The program generates a static initialized array with 10 integers (using the .word

directive).

1. 2)  The program prompts the user to enter 1 if she/he wants to find the minimal value stored

in the array, and 2 if she/he wants the maximal value stored.

1. 3)  If the user enters 1, then the program finds the minimal value stored in the array and

prints out this value.

1. 4)  If the user enters 2, then the program finds the maximal value stored in the array and

prints out this value.

1. 5)  If the user enters any other value, then the program prompts him/her again to enter a valid

number.

1. 6)  After displaying the min (or max), the program terminates.

C++

#include <iostream>

int main() {

    int input;

    int temporary;

    int array[] = {1,2,3,4,5,6,7,8,9,10};

    std::cout << "Choose from the following" << std::endl;

    std::cout << "1.    Find the minimal value stored in the array"

              << std::endl;

    std::cout << "2.    Find the maximal value stored" << std::endl;

    std::cout << "Please enter a valid choice : ";

    std::cin >> input;

    if( input != 1 && input != 2 ){

        while( input != 1 && input != 2 ){

            std::cout << "Enter the following 1 or 2 from the choices above."

                      << std:: endl;

        std::cin >> input;

        }

    }

    temporary = array[1];

    switch (input) {

        case 1:

            for( int i = 0; i < 10; i++ )

            {

                if( array[i] < temporary )

                {

                    temporary = array[i];

                }

            }

            std::cout << "Minimal value stored : " << temporary << std::endl;

            break;

        default:

            for( int i = 0; i < 10; i++ )

            {

                if( array[i] > temporary )

                {

                    temporary = array[i];

                }

            }

            std::cout << "Maximal value stored : " << temporary << std::endl;

            break;

    }

    return 0;

}

**Choose from the following**

**1.    Find the minimal value stored in the array**

**2.    Find the maximal value stored**

**Please enter a valid choice :** 2

**Maximal value stored : 10**

**Program ended with exit code: 0**

**Choose from the following**

**1.    Find the minimal value stored in the array**

**2.    Find the maximal value stored**

**Please enter a valid choice :** 1

**Minimal value stored : 1**

**Program ended with exit code: 0**

**Choose from the following**

**1.    Find the minimal value stored in the array**

**2.    Find the maximal value stored**

**Please enter a valid choice :** 3

**Enter the following 1 or 2 from the choices above.**

5

**Enter the following 1 or 2 from the choices above.**

0

**Enter the following 1 or 2 from the choices above.**

1

**Minimal value stored : 1**

**Program ended with exit code: 0**

Psuedo C

    int input;

    int temporary;

    int array[] = {1,2,3,4,5,6,7,8,9,10};

    std::cout << "Choose from the following" << std::endl;

    std::cout << "1.    Find the minimal value stored in the array"

              << std::endl;

    std::cout << "2.    Find the maximal value stored" << std::endl;

    std::cout << "Please enter a valid choice : ";

    std::cin >> input;

    if( input != 1 && input != 2 ){

        while( input != 1 && input != 2 ){

            std::cout << "Enter the following 1 or 2 from the choices above."

                      << std:: endl;

        std::cin >> input;

        }

    }

    switch (input) {

        case 1:

            temporary = 9999999;

            for( int i = 0; i < 10; i++ )

            {

                if( array[i] < temporary )

                {

                    temporary = array[i];

                }

            }

            std::cout << "Minimal value stored : " << temporary << std::endl;

            break;

        default:

            temporary = -9999999;

            for( int i = 0; i < 10; i++ )

            {

                if( array[i] > temporary )

                {

                    temporary = array[i];

                }

            }

            std::cout << "Maximal value stored : " << temporary << std::endl;

            break;

    }

    return 0;

}

Assembly Language

input = $V0

temporary = $T1

array: .word 1,2,3,4,5,6,7,8,9,10 ## initializing array

.asciiz “Choose from the following \n 1. Find the minimal value stored in the array \n 2. Find the mximal value stored \n Please enter a valid choice : “

li $v0, 5 ## input

addi $t2, $0, 1 ## set option 1

addi $t3, $0, 2 ## set option 2

Loop: ## start while loop

beq $v0, $t2, case1 ##determine if option 1 was selected

beq $v0, $t3, case2 ##determine if option 2 was selected

.asciiz “Enter the following 1 or 2 from the choices above.”

li $v0, 5 ## get input from user ( I think )

j loop ## return back to loop

case1: ## if user selects 1

add $a1, $0, $0 ## initialize condition for for loop

addi $a2, $0, 9 ## setting max loop runs

loop1: ## for loop begins

beq $a1, $a2, exit ## conditional loop exit

li $t4,0 ## setting up condition for if statement

{

find if array is less than $t4

then set $t1 to array value if ^ true

}

addi $a1, $a1, 1 ## post increment for loop

j loop1 ## return back to loop

case2: ## if user selects2

loop2:

beq $a1, $a2, exit ## conditional loop exit

li $t4,0 ## setting up condition for if statement

{

find if array is greater than $t4

then set $t1 to array value if ^ true

}

addi $a1, $a1, 1 ## post increment for loop

j loop2 ## return back to loop

exit ## exit to end of function where all paths meet

.asciiz “\n Value stored : “

lw $a0, $t1 ## loading result into $a0

li $v0, 1 ## issuing command to print

syscall ## executing that command