CS/SE 2340 - Assignment#4
Due Date: 11/17/23, 11:59 pm

1-Translate the following program to MIPS assembly program (Please explain each instruction in your code by a comment and submit a .asm file)

```cpp

#include <iostream>

using namespace std;
int main()
{
    const int CITY = 2;
    const int WEEK = 7;
    int temperature[CITY][WEEK];

    cout << "Enter all temperature for a week of first city and then second city. \n";

    // Inserting the values into the temperature array
    for (int i = 0; i < CITY; ++i)
    {
        for(int j = 0; j < WEEK; ++j)
        {
            cout << "City " << i + 1 << ", Day " << j + 1 << " : ";
            cin >> temperature[i][j];
        }
    }

    cout << "\n\nDisplaying Values:\n";

    // Accessing the values from the temperature array
    for (int i = 0; i < CITY; ++i)
    {
        for(int j = 0; j < WEEK; ++j)
        {
            cout << "City " << i + 1 << ", Day " << j + 1 << " = " << temperature[i][j] << endl;
        }
    }

    return 0;
}
```

2-Translate the following program to MIPS assembly program (Please explain each instruction in your code by a comment and submit a .asm file)

```cpp

#include <stdio.h>

int main()
{
    int arr[10], i, j, k, Size;

    printf("\n Please Enter Number of elements in an array  :   ");
    scanf("%d", &Size);

    printf("\n Please Enter %d elements of an Array \n", Size);
    for (i = 0; i < Size; i++)
    {
        scanf("%d", &arr[i]);
    }

    for (i = 0; i < Size; i++)
    {
        for(j = i + 1; j < Size; j++)
        {
            if(arr[i] == arr[j])
            {
                for(k = j; k < Size; k++)
                {
                    arr[k] = arr[k + 1];
                }
                Size--;
                j--;
            }
        }
    }

    printf("\n Final Array after Deleteing Duplicate Array Elements is:\n");
    for (i = 0; i < Size; i++)
    {
        printf("%d\t", arr[i]);
    }
    return 0;
}
```

3-Translate the following program to MIPS assembly program (Please explain each instruction in your code by a comment and submit a .asm file)

```
#include <iostream>
using namespace std;

// Get the size m and n
#define M 4
#define N 4

// Function to calculate sum
// of elements in 2d array
int sum(int arr[M][N])
{
    int i, j;
    int sum = 0;

    // Finding the sum
    for (i = 0; i < M; ++i) {
        for (j = 0; j < N; ++j) {
            // Add the element
            sum = sum + arr[i][j];
        }
    }
    return sum;
}

// Driver code
int main()
{
    int i, j;
    int arr[M][N];

    // Get the matrix elements
    int x = 1;
    for (i = 0; i < M; i++)
        for (j = 0; j < N; j++)
            arr[i][j] = x++;

    // Get sum
    cout << sum(arr);
    return 0;
}
```