```
//--------------------------------------------------------------------
// File name: Exercise_1_to_5.cpp
// Assign ID:
// Due Date: 30/07/24 at 11pm
//
// Purpose: Array
//
// Author: Mr. KEO Sopahnit
//--------------------------------------------------------------------

Exercise_1

#include <iostream>
using namespace std;

int main()
{
    const int SIZE = 10;
    int arr[SIZE];

    cout << "Array elements: ";
    for (int i = 0; i < SIZE; i++)
    {
        arr[i] = rand() % 100;
        cout << arr[i] << " ";
    }
    cout << endl;

    int min = arr[0];
    int max = arr[0];

    for (int i = 1; i < SIZE; i++)
    {
        if (arr[i] < min)
        {
            min = arr[i];
        }
        if (arr[i] > max)
        {
            max = arr[i];
        }
    }
    cout << "Minimun element in array is: " << min << endl;
    cout << "Maximun element in array is: " << max << endl;

    return 0;
}
```

```
Exercise_2
#include <iostream>
using namespace std;

int main()
{
    const int MONTHS = 12;
    double profits[MONTHS];
    int start, end;

    cout << "Enter profits each month:" << endl;
    for (int i = 0; i < MONTHS; ++i)
    {

        cout << "Month " << i + 1 << ": ";

        cin >> profits[i];
    }

    cout << "Enter the range (start and end month numbers, 1-12): ";
    cin >> start >> end;

    start--;
    end--;

    if (start < 0 || end >= MONTHS || start > end)
    {
        cout << "Invalid range!" << endl;
        return 1;
    }
    double minProfit = profits[start];
    double maxProfit = profits[start];
    int minMonth = start;
    int maxMonth = start;
    for (int i = start + 1; i <= end; ++i)
    {
        if (profits[i] < minProfit)
        {
            minProfit = profits[i];
            minMonth = i;
        }
        if (profits[i] > maxProfit)
        {
            maxProfit = profits[i];
            maxMonth = i;
        }
    }
    cout << "Min profit: " << minProfit << " in month " << minMonth + 1 <<
endl;
    cout << "Max profit: " << maxProfit << " in month " << maxMonth + 1 <<
endl;

    return 0;
}
```

```
Exercise_3
#include <iostream>
using namespace std;
int main()
{
    double sumNegatives = 0;
    double productBetweenMinMax = 1;
    double productEvenIndexed = 1;
    double sumBetweenFirstAndLastNegatives = 0;

    int firstNegativeIndex = -1;
    int lastNegativeIndex = -1;
    int N;

    cout << "Enter the number of elements: ";
    cin >> N;

    double *arr = new double[N];

    cout << "Enter the elements of the array:" << endl;
    for (int i = 0; i < N; ++i)
    {
        cin >> arr[i];
    }

    double minElement = arr[0];
    double maxElement = arr[0];
    int minIndex = 0;
    int maxIndex = 0;

    for (int i = 0; i < N; ++i)
    {
        if (arr[i] < 0)
        {
            sumNegatives += arr[i];
            if (firstNegativeIndex == -1)
                firstNegativeIndex = i;
            lastNegativeIndex = i;
        }
        if (arr[i] < minElement)
        {
            minElement = arr[i];
            minIndex = i;
        }
        if (arr[i] > maxElement)
        {
            maxElement = arr[i];
            maxIndex = i;
        }
    }

    for (int i = min(minIndex, maxIndex) + 1; i < max(minIndex, maxIndex);
++i)
    {
```

```
        productBetweenMinMax *= arr[i];
    }

    for (int i = 0; i < N; i += 2)
    {
        productEvenIndexed *= arr[i];
    }

    if (firstNegativeIndex != -1 && lastNegativeIndex != -1 &&
firstNegativeIndex != lastNegativeIndex)
    {
        for (int i = firstNegativeIndex + 1; i < lastNegativeIndex; ++i)
        {
            sumBetweenFirstAndLastNegatives += arr[i];
        }
    }

    // Output
    cout << "Sum of negative elements: " << sumNegatives << endl;
    cout << "Product of elements between min and max elements: " <<
productBetweenMinMax << endl;
    cout << "Product of even-indexed elements: " << productEvenIndexed <<
endl;
    cout << "Sum of elements between the first and last negative elements:
" << sumBetweenFirstAndLastNegatives << endl;

    return 0;
}
```

Exercise_4

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

int main() {
    const int size = 10;
    int original[size] = {0, 1, -1, 3, 4, 4, 3, 2, 8, 9};
    int part1[size / 2], part2[size / 2];

    for (int i = 0; i < size / 2; ++i) {
        part1[i] = original[i];
        part2[i] = original[i + size / 2];
    }

    cout << "First part: ";
    for (int i = 0; i < size / 2; ++i) {
        cout << part1[i] << " ";
    }
    cout << endl;

    cout << "Second part: ";
    for (int i = 0; i < size / 2; ++i) {
        cout << part2[i] << " ";
    }
    cout << endl;

    return 0;
}
```

Exercise_5

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

int main() {
    const int SIZE = 5;
    int arr1[SIZE], arr2[SIZE], sumArr[SIZE];

    cout << "First array:" << endl;
    for (int i = 0; i < SIZE; ++i) {
        cin >> arr1[i];
    }

    cout << "Second array:" << endl;
    for (int i = 0; i < SIZE; ++i) {
        cin >> arr2[i];
    }

    for (int i = 0; i < SIZE; ++i) {
        sumArr[i] = arr1[i] + arr2[i];
    }

    cout << "Sum of elements: ";
    for (int i = 0; i < SIZE; ++i) {
        cout << sumArr[i] << " ";
    }
    cout << endl;

    return 0;
}
```