

TCP1201 Object-Oriented Programming and Data Structures

Lab00 From C++ To Java

Exercise 1: I/O and Array

The following C++ program asks the user to provide the size and the elements of a double array. It then prints and sums all doubles in the array. Convert it to a Java program.

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

int main() {
    int size;
    cout << "Enter total number of items: ";
    cin >> size;

    double prices[size];
    cout << "Enter the prices for " << size << " items: ";
    for (int i = 0; i < size; i++)
        cin >> prices[i];

    cout << "The prices: ";
    for (int i = 0; i < size; i++)
        cout << prices[i] << " ";
    cout << endl;

    double sum = 0;
    for (int i = 0; i < size; i++)
        sum += prices[i];

    cout << "Sum of all items = " << sum;
}
```

Exercise 2: Strings and ArrayList

Convert the following C++ program to Java.

Note:

- Java does not use [] for indexing ArrayList. Use get() method instead.
- Java does not use operators '<', '>', and '==' to compare the content of objects of classes (such as Strings). Use compareTo() and equals() methods instead.

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

int main() {
    vector<string> words;

    string word;
    bool zero_entered = false;
    do {
        cout << "Enter a word (0 to end): ";
        cin >> word;
    } while (word != "0");
}
```

```

    if (word == "0")
        zero_entered = true;
    else
        words.push_back(word);
} while (!zero_entered);

cout << "You entered: ";
for (int i = 0; i < words.size(); i++)
    cout << words[i] + " ";
cout << endl;

bool ascending = true;
bool duplicate = false;
for (int i = 0; i < words.size()-1; i++) {
    if (words[i] > words[i+1])
        ascending = false;

    for (int j = i+1; j < words.size(); j++)
        if (words[i] == words[j])
            duplicate = true;
}

cout << "Ascending: " << boolalpha << ascending << endl;
cout << "Duplicate: " << boolalpha << duplicate << endl;
}

```