

*Find the length of the largest
monotonic segment of an array
(increasing or decreasing)*

example

1 2 5 7 6 6 6 3 2 10 11 12 16 29 29

1 2 5 7 - 4

7 6 6 6 3 2 - 6

2 10 11 12 16 29 29 - 7

answer 7



```
void searchForGroup(int arr[], int length) {
    int foundLength = 0;
    int currentLength = 1;
    int otherLength = 1;
    int flag = 0;           // not encountered increasing/decreasing
    for (int i = 0; i < length - 1; i++) {
        if (arr[i] <= arr[i + 1]) {           // encountered increase
            if (flag == -1) {                 // just finished neg string, started new increase
                if (foundLength < otherLength) { //resets new counter for increase
                    foundLength = otherLength;
                }
                currentLength = 1;
            }
            currentLength++;
            flag = 1;
        }
        if (arr[i] >= arr[i + 1]) {           // encountered decrease
            if (flag == 1) {                 // previous numbers higher, new decrease encountered
                if (foundLength < currentLength) { // reset counter for new decrease
                    foundLength = currentLength;
                }
                otherLength = 1;
            }
            otherLength++;
            flag = -1;
        }
    }
    if (foundLength < currentLength) {
        foundLength = currentLength;
    }
    else if (foundLength < otherLength) {
        foundLength = otherLength;
    }
    std::cout << "String of numbers: " << foundLength << std::endl;
}
```