

# Assignment 1 – Intersection with axis

## Due date: May 25, 2010 6:00pm

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### 1. Specification

1. Write a programme calculating average change of values in the input sequence.
2. Declare appropriate constants and variables according to the ANSI C language specification
3. Your programme should provide following functionality:
  - Read input from the standard input (keyboard). The input is a sequence of unsigned integers followed by the unit (kg or lb) and ended with EOF (Ctrl+D). The sequence can have arbitrary length.

- Each input is in new line. (empty lines should be ignored)
- Your programme should accept entries 0-100kg or 0-200lb
- Programme should convert all entries to *lb*

$$1\text{lb} = 0.453\text{kg}$$

- Calculate change between subsequent values as  $\text{delta}_i = |x_i - x_{i+1}|$ .
- Programme should return the average change calculated as:

$$\frac{1}{N-1} \sum_{i=1}^{N-1} \text{delta}_i,$$

where N is a total number of elements.

- Result should be in *lb* formatted to three (3) decimal places.
4. Your programme should handle following errors in input and return following information:
    - Wrong format  
Wrong format \n
    - Wrong unit  
Wrong unit \n
    - Overflow (too big or too small value)  
Overflow \n

5. Line with an error should not be included in the calculation of the result
6. Your file should be called `a1.c`
7. Submitted file should contain following header:

```

/*****
*          CSE2031 - Assignment 1          *
*          Author: Name and Surname        *
*          email: address                  *
*          cs_num:                         *
*****/

```

8. Use submit command to submit your files

```
submit 2031 a1 a1.c
```

9. No hard copy is expected at this time

## 2. Grading

We will use the following marking scheme

You can be granted up to 100 points

- 80% – functionality and compliance with the specification
- 20% – coding style
- There is a penalty of 5 points (out of 100) for improper submission like tar files other file naming or whole directories.

## 3. Sample input and output

You will be provided with sample input and the corresponding results.

Please check how to use symbols '`<`' and '`>`' to redirect input and output.