



Computer Science 3B

Practical Assignment 01

2017-08-03

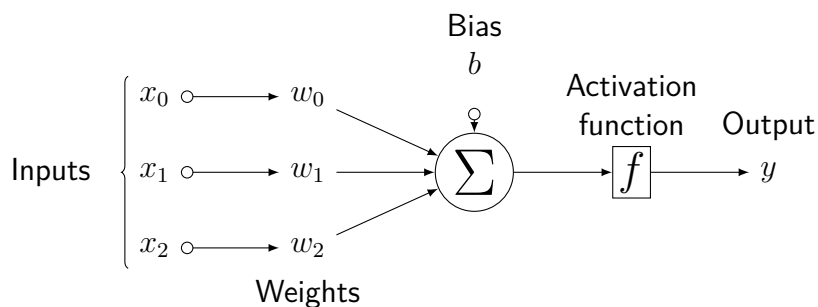
Deadline - 2017-08-03 16h45

Marks: 50

This practical assignment must be uploaded to eve.uj.ac.za **before** 2017-08-03 16h45. Late or incorrect submissions **will not be accepted**, and will therefore not be marked. You are **not allowed to collaborate** with any other student.

Good coding practices include a proper coding convention and a good use of commenting. Marks will be deducted if these are not present. See the reminder page for more details.

Previously we created a **perceptron**: a special **neuron** in an artificial neural networks (ANN). We can further test and adjust the perceptron by changing the weights and checking the result with different inputs.



$$s = x_0 * w_0 + x_1 * w_1 + x_2 * w_2 + b$$
$$y = s/a$$

Write an 80x86 assembly program that will calculate the output of a single perceptron. Each weight must put specified by the user and subsequently the values for each input, finally the result must be displayed (full value). **Note:** all values are integers! Check the reminder page for submission details.

Test set1:

x_0	1	w_0	15	b	1
x_1	2	w_1	10	a	100
x_2	3	w_2	5	s, y	51, 0.51

Test set2:

x_0	12	w_0	12	b	1
x_1	16	w_1	5	a	100
x_2	4	w_2	1	s, y	229 2.29

Mark sheet

- | | |
|--|------|
| 1. Design | [10] |
| 2. Input weights | [05] |
| 3. Input values for input | [05] |
| 4. Output result | [05] |
| 5. Structure and layout (no temporary variables, correct data types) | [05] |
| 6. Commenting | [05] |
| 7. Correct execution. | [15] |

NB

Submissions which **do not assemble** will be capped at 40%!

Execution marks are awarded for a correctly functioning application and not for having some related code.

Reminder

Your submission must follow the naming convention as set out in the general learning guide.

Example

Surname	Berners-Lee	Initials	TJ
Student number	209912345	Module Code	CSC3B10
Current Year	2017	Practical number	P01

Berners-Lee_TJ_209912345_ CSC3B10_2017_P01

Your submission must include the following in a single zip (compressed) file:

- *Source file* (asm file) - File containing your solution. Your details must be included at the top of the source code.
- *Program design* (pdf file) - File containing your design. Your details must be included at the top of the design.