Computer Science 3B

Practical Assignment 09

Assignment date: 2024-10-10

Deadline: 2024-10-10 17h05

Marks: 60

This practical assignment must be uploaded to eve.uj.ac.za **before** 2024-10-10 17h05. Late[1] or incorrect submissions **will not be accepted** and will therefore not be marked. You are **not allowed to collaborate** with any other student. Plagiarism is not tolerated. All submissions are tested for plagiarism.

Good coding practices include a proper coding convention and a good use of commenting. Marks will be deducted if these are not present.

The reminder page includes details for submission. Please ensure that **ALL** submissions follow the guidelines. The reminder page can be found on the last page of this assignment.

BeatWatch would like to incorporate DLL functionality as part of the R&D capabilities You are required to help them with their efforts. You need to create a basic DLL that will contain the following Function:

```
; Return the Computed Result
int computeResult(int firstNumber, int secondNumber, int multiplier, int divisor);
```

The formula for the computation is as follows:

result = ((firstNumber + secondNumber) * multiplier / divisor) ^ 2

where:

^ 2 is the square root

Write an 80x86 assembly DLL using the provided template. **No design is required!**

Important:

1. The following has been provided under additional files for this practical:
    a. DLL template code
    b. Executable that will use your DLL (use this executable to test your program)

Testing set – Use these values to test your program

firstNumber	secondNumber	multiplier	divisor	result
2	3	2	1	100
10	20	4	5	576
123	510	5	4	625681

[1] Alternate arrangements for exceptional circumstances will be posted on eve.

Mark sheet

1.	***computeResult*** function	**[25]**
2.	Correct DLL structure	**[05]**
3.	Structure and layout (no temporary global variables, correct data types)	**[05]**
4.	Commenting	**[05]**
5.	Correct execution	**[20]**
	TOTAL	**[60]**

NB

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

Practical marks are awarded subject to the student's ability to explain the concepts and decisions made in preparing the practical assignment solution.

(Inability to explain code → inability to be given marks.)

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

Reminder

Your submission must follow the naming convention below:

`SURNAME_INITIALS_STUDENTNUMBER_SUBJECTCODE_YEAR_PRACTICALNUMBER`

Example: `Berners-Lee_TJ_209912345_CSC03B3_2024_P05`

Surname	Berners-Lee	**Module Code**	CSC03B3
Initials	TJ	**Current Year**	2024
Student number	209912345	**Practical number**	P05

Your submission must be **a single zip (compressed) file**!

Your submission must include the following:

File	Naming	Folder	Purpose
`Design`	`STUDENTNUMBER_P05.pdf`	`docs`	Contains your program design. All files must be in **PDF** format. Your details must be included at the top of any **PDF** files submitted[0].
`Source`	`STUDENTNUMBER_P05.asm`	`src`	Contains all relevant source code. Your details must be included at the top of the source code[0].

Multiple uploads

Note that only **one** submission is marked. If you already have submitted once and want to upload a newer version, then submit a newer file with the same name as the uploaded file in order to overwrite it.

[0]Failure to correctly indicate your details will result in a penalty.