



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

THIRD YEAR 1ST SEMESTER EXAMINATIONS

**BACHELOR OF SCIENCE IN
INFORMATION TECHNOLOGY**

COURSE CODE: BIT 412E
COURSE TITLE: WEB APPLICATION PROGRAMMING II

DATE: 13TH DECEMBER 2022

TIME: 3:00 – 5:00

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE (1)** and Any **OTHER 2** questions
Ensure your answers/ideas are clearly expressed
All your answers must be clearly numbered
Write in ink. Rough work can be done (in answer booklet) in pencil and will not be marked. Cross out any rough work.
Calculators, phones, tablets, computers not allowed

TIME: 2 Hours

MMUST observes **ZERO** tolerance to examination cheating

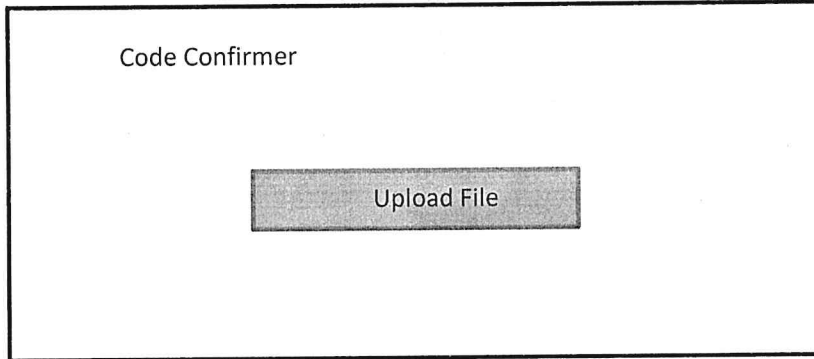
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QUESTION ONE: COMPULSORY QUESTION

[30 MARKS]

(a) Your lecturer of Object Oriented programming II (Java) has noted that there are some common mistakes that students commit while writing there code. The lecturer has tasked you with coming up with a web based system powered by python that will do the following:

- i) Using HTML and Django, write a code that will design the following window. Use your own values for different attributes [3 Marks]



- ii) Write a code that will open a file selector if the button is clicked. The file selector should only display files that have an extension .java [3 Marks]
- iii) Write a code that will make a button display below the upload File button once the file is selected [3 Marks]
- iv) Create a python class called FileReader whose work will to read all lines in the file uploaded in iii) above and store each line as an item of a list called fileList. Empty lines should not be stored and each item should be stored with the code line number as the first string [4 Marks]
- v) Write a python method called semiColon that accepts a string augment and returns true if the last character of a line is a semi colon. If the method returns true, using information in iv) above print the code line number and the message correct. Using a loop of your choice confirm if all lines end with a semicolon. For Example at the end of a loop, the following can be printed

```
Line 1: correct
Line 3: correct
Line 4: correct
Line 7: correct
```

[5 Marks]

- vi) Using django framework , html and Botstrap, display what is printed from the method in v) above to the user inform of a card [4 Marks]
- vii) If the method in vi) above returns false, write a method called bracketChecker to confirm if all brackets have been closed.(either

correctly or incorrectly). If the brackets have not been closed correctly, display on the html page “All brackets have not been closed” and return false, otherwise return true. [3 Marks]

viii) If the method in vii) above returns true, write a method that checks if all brackets nesting has been done correctly. Note: there are four types of brackets (), {}, [], and <> example of nesting {(<>)}. If nesting is done well display on html “nesting is okay” else “check on your nesting of brackets [5 Marks]

QUESTION TWO:

- a) Content Management Systems have proponents and detractors, with each side having valid reason for liking or disliking the concept of content management system. Choose one side and explain with explanation at least five persuasive and factual reasons to support your claim with respect to Django framework [10 Marks]
- b) Django framework is said to be responsive. What makes it responsive [2 Marks]
- c) Describe three security practices that a web programmer should implement on their website [3 Marks]

QUESTION THREE:

- a) Django framework is made up of many files. You are required to discuss the content of any seven files with an example of writing codes that will be used by a web application that can be used to create a new product. [14 Marks]
- b) What is pip and what is its works in django web programming [1 Mark]

QUESTION FOUR:

You have been hired as the programmer of Masinde Muliro University of Science and Technology (MMUST). You have identified and successfully created two web application using django, one for academics module and the other for finance module. MMUST wants to integrate the two in such a way that a student can only register for courses after completing fees. If both web application have the different databases:

- i) Assume that the academic module database has field for amount paid and the web application has a method that returns the fees balance, identify atleast four files that will be involved in the integration and write the code for each file [7 Marks]
- ii) Write a code for the web app that will display students that have completed fees [8 Marks]