National University of Computer and Emerging Sciences

Lab Exercise 01

For

Programming Fundamentals Lab

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FAST School of Computing

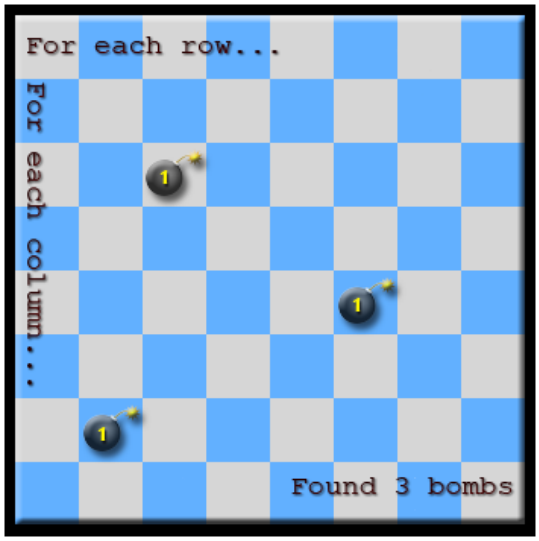
Instructions:

1. Make a Microsoft Word document and write solution of all tasks
2. Export the file to .pdf
3. Save the file with the name in format “SECTION_ROLL NO_LAB NO”
4. No submissions will be accepted after deadline

Task 1:

For our first task, we will pretend we have a square game board with one or more bombs hidden among the squares. We want to scan the game board and print the number of hidden bombs. Our algorithm methodically checks each row and each column to see if a hidden bomb is there, and if it is, we add 1 to the total number of bombs.

Write down a pseudo code for this solution.



Task 2:

The program is to input examination mark and test it for the award of a grade. The mark is a whole number between 1 and 100. Grades are awarded according to the following criteria:

1. Greater than or equal to 80 ‘’Distinction’’
2. Greater than or equal to 60 ‘’Merit’’
3. Greater than or equal to 40 ‘’Pass’’
4. Less than 40 ‘’Fail’’

Write down a pseudocode.

Task 3:

Design a flowchart for adding the following test scores (should not be sequence structure):

45, 89, 34, 10, 49

Task 4:

Write pseudo code and design flowchart

Read in three numbers, call them A, B and C.

- *If A is bigger than B, then if A is bigger than C, print out A, otherwise print out C.*
- *If B is bigger than A, then if B is bigger than C, print out B, otherwise print out C.*

Task 5:

Write pseudo code and design flowchart

Calculate the area of a circle and display the result. Use the formula $= \pi r^2$, where π is equals to 3.1416 and *r* is the radius of circle.