

# Birzeit University

## Faculty of Engineering and Information Technology

### Department of Electrical and Computer Engineering

#### ENCS3130 Linux Laboratory, Final Exam, First Semester 2023-2024

#### Shell Scripting

Name:

ID:

Section:

#### Please read before starting

- Create a folder called Name ID final ENCS3130-Shell. Replace the string Name by your first name and ID by your university ID number (e.g. Ahmad 1100123 final-shell ENCS3130).
- This exam document is for the shell question must be solved by shell scripting.
- Make sure your code is elegant, well commented, the variables are meaningful, etc.

#### Question (Shell Scripting)

In this exam, you will read a text from a text file and display the content on screen. The content of the file includes only three ASCII characters: 'X' and 'O' characters, and a delimiter '|' with no spaces between them. After reading the file, the user will check if the rows, columns, or diagonals have the same symbols. **The file will consist of 9 symbols, three in each line figure 1.**

X		X		O
O		X		O
X		O		X

Figure 1: Sample of the content of a text file printed on screen

#### Requirements:

1. Accept the player's name as input.
2. Print the player's name on the screen and also to an output file.
3. Accept the name of a text file as input, ensuring its existence.
4. Read the entire content of the text file.
5. Print the content of the text file on the screen.
6. Display the current time, including hours, minutes, and seconds on screen.
7. Write the current time to the content of the output file.
8. Check if the symbols in any row are the same; if so, print 'Symbols in at least one row are the same' on the screen. Otherwise, print 'No match across rows'
9. Check if the symbols in any column are the same; if so, print 'Symbols in at least one column are the same' on the screen. Otherwise, print 'No match across columns'
10. Check if the symbols in the forward diagonal ('/') backward diagonal ('\') are the same; if so, print 'A match across at least one diagonal' on the screen. Otherwise, print 'No match across diagonals'

**Grading policy:**

Step	Task	Max Grade	Grade
1	Read player name	1	
2	Print the player's name on the screen	1	
	Print the player's name on the output file	1	
3	Read the name of a text file as input	1	
	Check the existence of the input file	1	
4	Read the entire content of the input text file	1	
5	Print the content of the input file on the screen	1	
6	Extract hours, minutes, and seconds from date	1	
	Display the current time on screen	1	
7	Write the current time to the content of the output file	1	
8	Check if the symbols in any row are the same: <ul style="list-style-type: none"><li>• Iterate over rows (1 point).</li><li>• Split the rows by the delimiter (1 point)</li><li>• Compare the values rows (1 point)</li></ul>	3	
9	Check if the symbols in any column are the same: <ul style="list-style-type: none"><li>• Iterate over columns (1 point)</li><li>• Select corresponding column for each iteration (1 point)</li></ul>	3	
10	Check if the symbols in any diagonal line are the same: <ul style="list-style-type: none"><li>• Select forward diagonal values ('/') (1 point)</li><li>• Select backward values ('\') (1 point)</li><li>• Compare the diagonal values (1 point)</li></ul>	3	
8,9,10	Print results of comparison to screen in any of the cases (row, column, diagonal)	1	
11	Code Structure and comments	2	
12	Run	3	
	<b>Total</b>	<b>25</b>	