**Code Questions: - Pre – Release**

**Question 1: Implement a Recursive Function**

**Task:** Implement a recursive function to calculate the factorial of a number. Use this function within the game to calculate the factorial of a target number.

**Mark Breakdown:**

* Define the recursive function - 2 marks
* Base case for the recursion - 2 marks
* Recursive case for the recursion - 2 marks
* Integrate the function into the game - 2 marks
* Display the factorial result - 2 marks

**Total Marks:** 10

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**Question 2: Submit Player's Name and Score to a Text File**

**Task:** Modify the game to ask for the player's name when they finish the game and submit their score to a text file. Display the high score list of the top 5 players.

**Mark Breakdown:**

Ask for the player's name at the end of the game - 2 marks

Write the player's name and score to a text file - 3 marks

Read the scores from the text file - 3 marks

Sort and display the top 5 scores - 4 marks

**Total Marks: 12**

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**Question 3: Write Data to a Binary File**

**Task:** Implement a feature that writes the game state (e.g., targets, numbers allowed, score) to a binary file.

**Mark Breakdown:**

* Import necessary libraries (e.g., pickle) - 1 mark
* Serialize the game state to a binary file - 4 marks
* Deserialize the game state from the binary file - 4 marks
* Restore the game state correctly - 3 marks

**Total Marks:** 12

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**Question 4: Use Exception Handling (Continuation) – When opening a file…**

**Task: Add exception handling to the game to handle invalid user inputs and file I/O errors.**

**Mark Breakdown:**

* Add try-except blocks for user input validation - 3 marks
* Add try-except blocks for file I/O operations - 3 marks
* Display appropriate error messages - 3 marks
* Ensure the game continues running after an exception - 3 marks

**Total Marks: 12**

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**Question 5: Implement a Linked List**

**Task:** Implement a linked list to store the targets. Use the linked list to manage the targets during the game.

**Mark Breakdown:**

* Define the Node class - 2 marks
* Define the LinkedList class with appropriate methods - 4 marks
* Integrate the linked list into the game - 2 marks
* Display the targets using the linked list - 2 marks

**Total Marks:** 10

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| Couldn’t get this working |