Assignment 6 – Instructions

Python problems

Practical 6.1

Write a python program that captures the number of pages of a set of different books using a list. Display the highest page-number from the pages captured.

Declare the list, size of the list and book pages. Request the user to enter the list size for the number of books. Request the user to enter pages of each of the books using the list elements and **for loop.** The program should display the set of pages for different books stored in the list neatly and interactively. Determine the highest number of pages in the list **using for loop**. Display neatly the highest number of pages from the set of book-pages in the list. Make the program interactive as much as possible.

Submit your Python file(*.py) here on eFundi, under this assignment, and make sure you attach and submit your file successfully. Save file as ***StudentNumber_Prac6-1.py***

Output

```
Display the highest page-number.
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Enter the number of books (Max: 10): 5

Enter the Book pages using the list elements:

Enter the number of pages for the book in list[1]: 25
Enter the number of pages for the book in list[2]: 47
Enter the number of pages for the book in list[3]: 23
Enter the number of pages for the book in list[4]: 69
Enter the number of pages for the book in list[5]: 24

The set of pages for different books stored in the list are:

25 47 23 69 24

The highest number of pages in the set of books is: 69
```

Practical 6.2

Write a python program that manipulates elements in an list. The program will allow users to perform various operations on the list, such as inserting elements, deleting elements, and displaying the lists contents.

1. The program will start by displaying a menu of options to the user. The menu will include the following choices:
    a. Insert element into the list
    b. Delete element from the list
    c. Display list contents
    d. Exit the program
2. The program will create a list of a fixed size (you can choose the size) to store the elements. You can use an integer list for simplicity.
    a. Create a **generate_dummy_list()** function. This will insert 5 random numbers into the list for a start. These should be randomised per session
3. When the user selects the "Insert element into the list " option, the program will prompt the user to enter an integer value. The program will then insert this value into the list at the first available position
4. Create a **display_array()** function. When the user selects the "Display list contents" option, the program will display all the elements in the list in their current order.
5. Create a **find_highest()** function. This will search the updated list and display the highest element in the list.
6. Create a **delete_element()** function. When the user selects the "Delete element from the list " option, the program will prompt the user to enter an integer value to be deleted. The program will then search for this value in the list and remove it if it exists, shifting the subsequent elements to fill the gap.
7. If the user selects the "Exit" option, the program will terminate, and the list will be deallocated.

Submit your Python file(*.py) here on eFundi, under this assignment, and make sure you attach and submit your file successfully. Save file as ***StudentNumber_Prac6-2.py***

```
Welcome to the Array Manipulation Program!

1. Insert element into the array
2. Display array contents
3. Display highest number in the array
4. Delete element from the array
5. Exit

Enter your choice: 2
Array contents: [25, 85, 28, 88, 10]

1. Insert element into the array
2. Display array contents
3. Display highest number in the array
4. Delete element from the array
5. Exit

Enter your choice: 1
Enter the integer value to insert: 100
Element inserted successfully!

1. Insert element into the array
2. Display array contents
3. Display highest number in the array
4. Delete element from the array
5. Exit

Enter your choice: 2
Array contents: [25, 85, 28, 88, 10, 100]

1. Insert element into the array
2. Display array contents
3. Display highest number in the array
4. Delete element from the array
5. Exit

Enter your choice: 3
Highest number in the array: 100

1. Insert element into the array
2. Display array contents
3. Display highest number in the array
4. Delete element from the array
5. Exit


Enter your choice: 4
Enter the integer value to delete: 85
Element deleted successfully!
Array contents: [25, 28, 88, 10, 100]

1. Insert element into the array
2. Display array contents
3. Display highest number in the array
4. Delete element from the array
5. Exit

Enter your choice:
```

	Rubric		
Prak 6-1	**Code functionality (Here its either 8, 4 or 0 marks)**		
	The code does not execute	**0**	
	The code executes without errors but fails to display the correct highest page number.	**4**	
	The code executes without errors and correctly creates a list with a max size, populates the book pages accordingly and finds the highest value using loops	**8**	
	Subtotal (10)		
Prak 6-2	**Code functionality (Here its either 10, 5 or 0 marks)**		
	The code executes without errors, performs all operations correctly according to instructions with all functions	**8**	
	The code executes without errors but fails to perform one or more operations correctly (e.g., insert, display, find highest, delete).	**4**	
	The code does not execute	**0**	
	Subtotal (9)		
	Proper use of comments for explaining the purpose of each function and major code blocks on both programs	**4**	
	Total	**20**	