CST8130 – Data Structures

Lab 1 – Test Plan

1. Display of Main Menu

Description of Test	Input Values	Output / Result	Pass/Fail
a. Valid input	1,2,3,4,5,6	Resulting feature will be as described in the following tables	Result
b. Invalid input – digits	0, 7, 100	An error message is displayed, and the main menu is displayed again, awaiting user input	Result
c. Invalid input – Alpha characters	A, a	An error message is displayed, and the main menu is displayed again, awaiting user input	Result
d. Invalid input – Symbol	@, |	An error message is displayed, and the main menu is displayed again, awaiting user input	Result
e. Invalid input – Whitespace	Space, tab	An error message is displayed, and the main menu is displayed again, awaiting user input	Result

2. Tests on Empty Data

Description of Test	Input Values	Output / Result	Pass/Fail
a. Initialize a default array	1	To the user, nothing appears to happen. The main menu is displayed again, awaiting user input	Result
b. Re-initialize a default array	1	To the user, nothing appears to happen. The main menu is displayed again, awaiting user input	Result
c. Specify the max size of the array	2 then 10	To the user, nothing appears to happen. The main menu is displayed again, awaiting user input	Result
d. Re-specify the max size of the array	2 then 5	To the user, nothing appears to happen. The main menu is displayed again, awaiting user input	Result
e. Display values in the array	4	The heading "Numbers are:" is displayed with no numbers listed. The main menu is displayed again, awaiting user input	Result
f. Display the average of the values	5	The message "Average is: 0.0" is displayed. The main menu is displayed again, awaiting user input	Result
g. Exit the application	6	The message "Exiting…" is displayed and the program is terminated	Result

3. Adding values to the Array

At the beginning of each test, select 3 from the main menu. Priot

Description of Test	Input Values	Output / Result	Pass/Fail
a. Add a whole number	3	Message "Enter value:" is displayed and user can successfully enter the input. The main menu is displayed again, awaiting user input	Result
b. Add a decimal number	1.1	Message "Enter value:" is displayed and user can successfully enter the input. The main menu is displayed again, awaiting user input	Result
c. Add a negative whole number	-3	Message "Enter value:" is displayed and user can successfully enter the input. The main menu is displayed again, awaiting user input	Result
d. Add a negative decimal number	-1.1	Message "Enter value:" is displayed and user can successfully enter the input. The main menu is displayed again, awaiting user input	Result
e. Add an invalid alpha character	A, a	An error message is displayed, and the main menu is displayed again, awaiting user input	Result
f. Add an invalid symbol character	#, @	An error message is displayed, and the main menu is displayed again, awaiting user input	Result
g. Display values	From main menu select 5	All values successfully added in this test are displayed. The main menu is displayed again, awaiting user input	Result

4. Display Average

Note: Averages for floats may vary on different machines.

Description of Test	Input Values	Output / Result	Pass/Fail
a. Display average after adding 4 numbers in previous test	5	Message "Average is:" will be displayed with a very small number (why?). The main menu is displayed again, awaiting user input	Result
b. Add another number	Select 3 from main menu, enter 2	Message "Enter value:" is displayed and user can successfully enter the input. The main menu is displayed again, awaiting user input	Result
c. Display average after adding additional number	5	Message "Average is: 0.39999998" will be displayed (why?). The main menu is displayed again, awaiting user input	Result

5. Shrinking Array

Description of Test	Input Values	Output / Result	Pass/Fail
a. Re-specify the max size of the array	2 then 5	To the user, nothing appears to happen. The main menu is displayed again, awaiting user input	Result

Description of Test	Input Values	Output / Result	Pass/Fail
b. Display values in the array	4	The heading "Numbers are:" is displayed with no numbers listed. The main menu is displayed again, awaiting user input	Result
c. Add numbers (1,2,3,4,5) to the array	Select 3 from main menu, then value 5 times	Message "Enter value:" is displayed and user can successfully enter the input. The main menu is displayed again, awaiting user input	Result
d. Display values in the array	4	The heading "Numbers are:" is displayed with all 5 numbers listed. The main menu is displayed again, awaiting user input	Result
e. Add 6th number	Select 3 from main menu, enter 2	An error message is displayed, and the main menu is displayed again, awaiting user input	Result
f. Display values in the array	4	The heading "Numbers are:" is displayed with all 5 numbers listed. The main menu is displayed again, awaiting user input	Result
g. Display average	5	Message "Average is: 3.0" will be displayed. The main menu is displayed again, awaiting user input	Result