**Computer Programming**

**Experiment 5: Strings and Pointers (Chapter 7)**

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| **Class:** |  |
| **ID:** |  |
| **Name:** |  |

1. **Goal**

* Understand strings and pointers in C
* Grasp the declaration, initialization, and use of a 1-D or 2-D character array
* Understand standard character string functions
* Grasp pointer arithmetic
* Understand dynamic memory allocation using malloc() and free()

1. **Requirements**

Please finish your experiment independently. You could use Integrated Development Evironments (IDE), such as CodeBlocks, Microsoft Visual C++, gcc, and Apple XCode. Write out a full program, fix any bugs, and make sure your code is runnable.

1. **Contents**
2. Page 352-3, Page 353-4, Page 353-5, Page 353-6: Please learn how to use character and string I/O functions and complete these exercises.
3. Page 385-3: Please complete the exercise and understand sorting in terms of different criteria.
4. Page 415-1: Please complete the exercise and understanding character/string searching
5. Page 436-4: Please finish the exercise and grasp how to use malloc(), and in the end of your program, please release the reserved memory using free().
6. Page 437, Application Program 7.1: Pipe Fluid Velocity, Checking Input Data and Modular Design.
7. Page 449, Application Program 7.2: Earthquake Anecdotal Report Analysis, String Operations and Dynamic Storage Allocation.
8. **Results & Analysis**

Please describe the IDE you used, list the source code of your program, present your input and output, and analyze your results and the issues you encounter.

(Do not change the above contents. Please provide your answers below.)