

**Allen E. Paulson College of Engineering& Computing**

**Department of Information Technology**

**Lab 5**

Report for **Lab 5** that is due on Thursday, February 17, 2022

As part of ITW 2431 Data Programming II

**Name: Michael Patak**

**Date of Submission: Thursday, February 17, 2022**

# Section 1 – Lab 5 Prob 1 Purpose(s) of Program Problem, Output of Sample Run, and Learning Experience

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| 1. **Purpose(s) of Problem:**   The program will prompt the user to input integer numbers, when the user enters the word 'done'  the program will stop taking input. The program will take the integers inputted to create a  dictionary. The program will then print out the three largest numbers in the dictionary. |
| 1. **Source Code File Name:** ITW2431\_L5\_P1\_mpatak.py |
| 1. **Other Supporting File(s) (if any):** n/a |
| 1. **Hours Spent on Developing the Solution of the Problem and Writing the Program:** 1.5 hour |
| 1. **The Output of Program Sample Run:** |
| 1. **Overall Learning Experience for the Problem:**   Because the problem required finding the three highest numbers and popping them our of the dictionary I created a function called max\_value(). T |

# Section 2 – Lab 5 Prob 2 Purpose(s) of Program Problem, Output of Sample Run, and Learning Experience

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| 1. **Purpose(s) of Problem:**   The program will take a word as input from the user, and it will then count the number of  occurrences of each letter. The program will output the letter followed by the number of  occurrences. |
| 1. **Source Code File Name**: ITW2431\_L5\_P2\_mpatak.py |
| 1. **Other Supporting File(s) (if any):**  n/a |
| 1. **Hours Spent on Developing the Solution of the Problem and Writing the Program:** 1.5 hours |
| 1. **The Output of Program Sample Run:** |
| 1. **Overall Learning Experience for the Problem:**   This problem was good for using multiple different Python elements. String slicing for reading each letter of the word, creating a new dictionary, and updating an existing dictionary. |

**Section 5 – Lab 5 Prob 3 Purpose(s) of Program Problem, Output of Sample Run, and Learning Experience**

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| 1. **Purpose(s) of Problem:**   The program will print out the key/value pairs from a given dictionary in descending order.  ASSUMPTIONS: The program will use the following dictionary:  dictItems = {'item1': 105,  'item2': 25,  'item3': 31,  'item4': 65,  'item5': 234} |
| 1. **Source Code File Name:** ITW2431\_L5\_P3\_mpatak.py |
| 1. **Other Supporting File(s) (if any):** n/a |
| 1. **Hours Spent on Developing the Solution of the Problem and Writing the Program:** 1 hour |
| 1. **The Output of Program Sample Run:** |
| 1. **Overall Learning Experience for the Problem:**   I used a bubble sort algorithm to sort the values in the dictionary in descending order. |