

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

**Department of Information Technology**

**Project 4**

Report for **Project 4** that is due on Sunday, February 13, 2022

As part of ITW 2431 Data Programming II

**Name: Michael Patak**

**Date of Submission: Sunday, February 13, 2022**

# Section 1 – Project 4 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 create a dictionary to store the days of the week as a key and a number as the  value in a key value pair. The program will then output the key/value pair first sorting the output  in ascending order and then sorting the output in descending order. |
| 1. **Source Code File Name:** ITW2431\_P4\_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:**   For this problem I used a bubblesort algorithm to sort the data. Because the data was going to be sorted twice I put the bubblesort into a function bubble\_sort() that takes a parameter of ‘ascending’ or ‘descending’ for how the data should be sorted. |

# Section 2 – Project 4 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 have an old sample dictionary {0: 10, 1: 20} predefined. The program will prompt  the user for a number to be used for adding numbers to the dictionary. The program will use a loop  to append the new key/value pairs to the dictionary. The program will then print out the resulting  dictionary after each run that adds to the dictionary. |
| 1. **Source Code File Name**: ITW2431\_P4\_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 hour |
| 1. **The Output of Program Sample Run:** |
| 1. **Overall Learning Experience for the Problem:**   For this problem I used a loop to iterate the number of times that the user entered for number of runs. Within the loop the variable for ‘key’ was incremented and the ‘value’ was calculated. Then I created a temporary dictionary with the ‘key’ and ‘value’. Then I used the update() with the temporary dictionary to update the original dictionary. |

# Section 5 – Assignment xx Prob x Purpose(s) of Program Problem, Output of Sample Run, and Learning Experience

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| 1. **Purpose(s) of Problem:** |
| 1. **Source Code File Name:** |
| 1. **Other Supporting File(s) (if any):** |
| 1. **Hours Spent on Developing the Solution of the Problem and Writing the Program:** |
| 1. **The Output of Program Sample Run:** |
| 1. **Overall Learning Experience for the Problem:** |