Assignment 4: – Nicholas Geldrez

Part 1 – Dictionaries

a) print(student.keys()) prints all the keys in the dictionary 'student'

print(student.get("subject")) prints the value within the key 'student' in this case another dictionary of subjects(keys) and values(grades)

b) student["age"] = 18, this will go to the key 'age' and update value to 18.

student["favorite_subject"] = "Math", this will add a new key 'favourite_subject' and have "Math" as the value at the end of the dictionary

print(student) will simply print out the dictionary with all the keys and values.

c) data = student.pop("age") creates a new variable 'data', pops the values of the key 'age' and returns that value and sets it to variable 'data'.

print(data, student) prints the value of data and the dictionary with all the keys and values

```
COMP 1405C > Assignments > Assignment 4 > ◆ part1.py > ...
   1    student = {
   2    "name": "Alice Smith",
   3    "age": 17,
   4    "grade": "12th",
   5    "subjects": {"Math": 88, "English": 92, "Science": 85, "History": 90}
   6    }
   7    print('C.')
   8    data = student.pop('age')
   9    print(data, student)
  10
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                                    >_ Python + ∨ ⬚
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment 4/part1.py"
  C.
  17 {'name': 'Alice Smith', 'grade': '12th', 'subjects': {'Math': 88, 'English': 92, 'Science': 85, 'History': 90}}
```

d) del student['grade'] removes item(key and value) with key 'grade'

print(student) will simply print out the dictionary with all the keys and values.

```
COMP 1405C > Assignments > Assignment 4 > ◆ part1.py > ...
   1    student = {
   2    "name": "Alice Smith",
   3    "age": 17,
   4    "grade": "12th",
   5    "subjects": {"Math": 88, "English": 92, "Science": 85, "History": 90}
   6    }
   7    print('D.')
   8    del student['grade']
   9    print(student)
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                                    >_ Python + ∨ ⬚
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment 4/part1.py"
  D.
  {'name': 'Alice Smith', 'age': 17, 'subjects': {'Math': 88, 'English': 92, 'Science': 85, 'History': 90}}
```

e) student.clear() removes everything from the student dictionary

print(student) will simply print out the dictionary with all the keys and values.

```
COMP 1405C > Assignments > Assignment 4 > ◆ part1.py > ...
   1    student = {
   2    "name": "Alice Smith",
   3    "age": 17,
   4    "grade": "12th",
   5    "subjects": {"Math": 88, "English": 92, "Science": 85, "History": 90}
   6    }
   7    print('E.')
   8    student.clear()
   9    print(student)
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                                    >_ Python + ∨ ⬚
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment 4/part1.py"
  E.
  {}
```

Part 2 – Tuples and Lists

a) numbers[2:5] – this will return the numbers starting at index 2, and end just before index 5, returning (3,4,5)

```
COMP 1405C > Assignments > Assignment 4 > 🐍 part1.py > ...
  1    numbers = (1,2,3,4,5,6,7,8,9)
  2    print(numbers[2:5])
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                              >_ Python + ∨ ▯
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment 4/part1.py"
  (3, 4, 5)
```

b) letters[0::2] – this will start for index 0 and the step of 2 will skip 1 index every time

```
COMP 1405C > Assignments > Assignment 4 > 🐍 part1.py > ...
  1    letters = ('a','b','c','d','e','f')
  2    print(letters[0::2])
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                              >_ Python + ∨ ▯
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment 4/part1.py"
  ('a', 'c', 'e')
```

c) data[1:3:] – this will slice a return index 1 and 2 of the list(stopping before index 3), returning information of Nicolas and Yanan

```
COMP 1405C > Assignments > Assignment 4 > 🐍 part1.py > ...
  1    data = [['Sara', 85, 'Math'], ['Nicolas', 92,'Science'], ['Yanan', 88, 'History'], ['Moe', 79,'Math']]
  2    print(data[1:3])
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                >_ Python + ∨ ▯ 🗑 ⋯ ∧ ✕
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment
  4/part1.py"
  [['Nicolas', 92, 'Science'], ['Yanan', 88, 'History']]
```

d) grid[1][:2] - the second row has an index of 1 and then the slicing stops before the second index

```
COMP 1405C > Assignments > Assignment 4 > 🐍 part1.py > ...
  1    grid = [['A', 'B', 'C'], ['D', 'E', 'F'], ['G','H', 'I']]
  2    print(grid[1][:2])
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                >_ Python + ∨ ▯ 🗑 ⋯ ∧ ✕
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment
  4/part1.py"
  ['D', 'E']
```

e) table[0][2:] – the first row has an index of 0 and the slice starts at index 2 and goes to the end of the first row

```
COMP 1405C > Assignments > Assignment 4 > 🐍 part1.py > ...
  1    table = [[100, 200, 300, 400], [500, 600, 700, 800],[900, 1000, 1100, 1200]]
  2    print(table[0][2:])
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS                                >_ Python + ∨ ▯ 🗑 ⋯ ∧ ✕
● nicholasgeldrez@nicholass-mbp VS Studio % /usr/bin/python3 "/Users/nicholasgeldrez/Documents/VS Studio/COMP 1405C/Assignments/Assignment
  4/part1.py"
  [300, 400]
```