Level 2 Allocation (Assignment 1)

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Guinness to preform operations on the data got from the ReadAllocationData.py 14-18, 2019

Functions

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  A function which sorts the students based on gpa from highest to lowest.
- def CalcModule.average (L, g)

  A function which gets the average gpa of either all the male or female students.
- def CalcModule.allocate (S, F, C)

  A function which allocates the students into their streams.
- def CalcModule.swap (list, elem1, elem2)

  A function which swaps two elements in a list.

2.1.1 Detailed Description

Guinness to preform operations on the data got from the ReadAllocationData.py 14-18, 2019

2.1.2 Function Documentation

2.1.2.1 allocate()

```
def CalcModule.allocate (
              S,
              F,
              C )
```

A function which allocates the students into their streams.

It first allocates those with free choice, then it allocates those without free choice in order of gpa

Parameters

p1	A list of dictionaries of students
p2	A list of students with free choice
p3	A dictionary of department capacities

Returns

Returns a dictionary of allocated students

2.1.2.2 average()

```
def CalcModule.average (
              L,
              g )
```

A function which gets the average gpa of either all the male or female students.

Parameters

p1	A list of dictionaries of students
p2	A string which is either 'male' or 'female'

Returns

Returns the average gpa

2.1.2.3 sort()

```
def CalcModule.sort (
              S )
```

A function which sorts the students based on gpa from highest to lowest.

Parameters

p1	A list of dictionaries of students

Returns

Returns a list of dictionaries of students sorted by gpa

2.1.2.4 swap()

```
def CalcModule.swap (
              list,
              elem1,
              elem2 )
```

A function which swaps two elements in a list.

Parameters

a	list
p2	An element
p3	An element

Returns

The list

2.2 src/ReadAllocationData.py File Reference

Guinness, guinnesj module to open files, process, then store the data 14-18, 2019

Functions

- def ReadAllocationData.readStdnts (s)

  A function which reads in student data from a file and stores it in a list of dictionaries.
- def ReadAllocationData.readFreeChoice (s)

  A function which reads in data about students with free choice from a file and stores it in a list.
- def ReadAllocationData.readDeptCapacity (s)

  A function which reads in data about department capacities from a file and stores it in a dictionary.

2.2.1 Detailed Description

Guinness, guinnesj module to open files, process, then store the data 14-18, 2019

2.2.2 Function Documentation

2.2.2.1 readDeptCapacity()

```
def ReadAllocationData.readDeptCapacity (
              s )
```

A function which reads in data about department capacities from a file and stores it in a dictionary.

Parameters

p1	A string corresponding to a filename

Returns

Returns a dictionary of departments and their capacity

2.2.2.2 readFreeChoice()

```
def ReadAllocationData.readFreeChoice (
              s )
```

A function which reads in data about students with free choice from a file and stores it in a list.

Parameters

p1	A string corresponding to a filename

Returns

Returns a list of macids of students with free choice

2.2.2.3 readStdnts()

```
def ReadAllocationData.readStdnts (
              s )
```

A function which reads in student data from a file and stores it in a list of dictionaries.

Parameters

p1	A string corresponding to a filename

Returns

Returns a list of dictionaries of student information

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