

## Level 2 Allocation (Assignment 1)

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# Chapter 1

## File Index

### 1.1 File List

Here is a list of all documented files with brief descriptions:

src/ <a href="#">CalcModule.py</a>	
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## Chapter 2

# File Documentation

### 2.1 src/CalcModule.py File Reference

Guinness to preform operations on the data got from the [ReadAllocationData.py](#) 14-18, 2019

#### Functions

- def [CalcModule.sort](#) (S)  
*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**

<i>p1</i>	A list of dictionaries of students
<i>p2</i>	A list of students with free choice
<i>p3</i>	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**

<i>p1</i>	A list of dictionaries of students
<i>p2</i>	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**

<i>p1</i>	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

<i>a</i>	list
<i>p2</i>	An element
<i>p3</i>	An element

## Returns

The list

## 2.2 src/ReadAllocationData.py File Reference

Guinness, guinnessj 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, guinnessj 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**

<i>p1</i>	A string corresponding to a filename
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**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**

<i>p1</i>	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**

<i>p1</i>	A string corresponding to a filename
-----------	--------------------------------------

**Returns**

Returns a list of dictionaries of student information

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