정보구조 과제 10

정은주 독어교육과 2014-19498

In [1]:
```
#problem 1
```

In [2]:
```
import pandas as pd
```

In [4]:
```
D = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew',
'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'i', 'j']
```

In [5]:
```
S = pd.Series(D)
```

In [7]:
```
print(S)
```

```
name        [Anastasia, Dima, Katherine, James, Emily, Mic...
score         [12.5, 9, 16.5, 17.3, 9, 20, 14.5, 25.1, 8, 19]
attempts                        [1, 3, 2, 3, 2, 3, 1, 1, 2, 1]
qualify          [yes, no, yes, no, no, yes, yes, no, no, yes]
dtype: object
```

In [8]:
```
df = pd.DataFrame(D)
```

In [9]:
```
df.mean(axis= 0)
```

Out[9]:
```
score       15.09
attempts     1.90
dtype: float64
```

Problem 2

[1, 3, 7, 9, 10, 8, 12, 13, 15, 19]

Problem 3

[13, 10, 3, 9, 12, 14, 17, 15, 19, 16]

In [23]:
```
#problem 4
```

In [40]:
```
L3 = [-1, 3, 0, 10, -4]
```

In [60]:
```
def merge_square_sort(L):
    square_L = []
    for kk in L:
        square_L.append(kk**2)

    if len(L) > 1:
        mid = len(L) // 2
        left = L[:mid]
        right = L[mid:]

        merge_square_sort(left)
        merge_square_sort(right)

        i = j = k = 0

        while i< len(left) and j < len(right):
            if left[i]**2 < right[j]**2:
                L[k] = left[i]
                square_L[k] = left[i]**2
                i += 1
            else:
                L[k] = right[j]
                square_L[k] = right[j]**2
                j += 1
            k += 1

        while i < len(left):
            L[k] = left[i]
            square_L[k] = left[i]**2
            i += 1
            k += 1

        while j < len(right):
            L[k] = right[j]
            square_L[k] = right[j]**2
            j+= 1
            k+= 1

        return square_L
```

In [61]:
```
merge_square_sort(L3)
```

Out[61]:
```
[0, 1, 9, 16, 100]
```