

**GIT Department of Computer Engineering**

**CSE 222/505 - Spring 2020**

**Homework 6 Report**

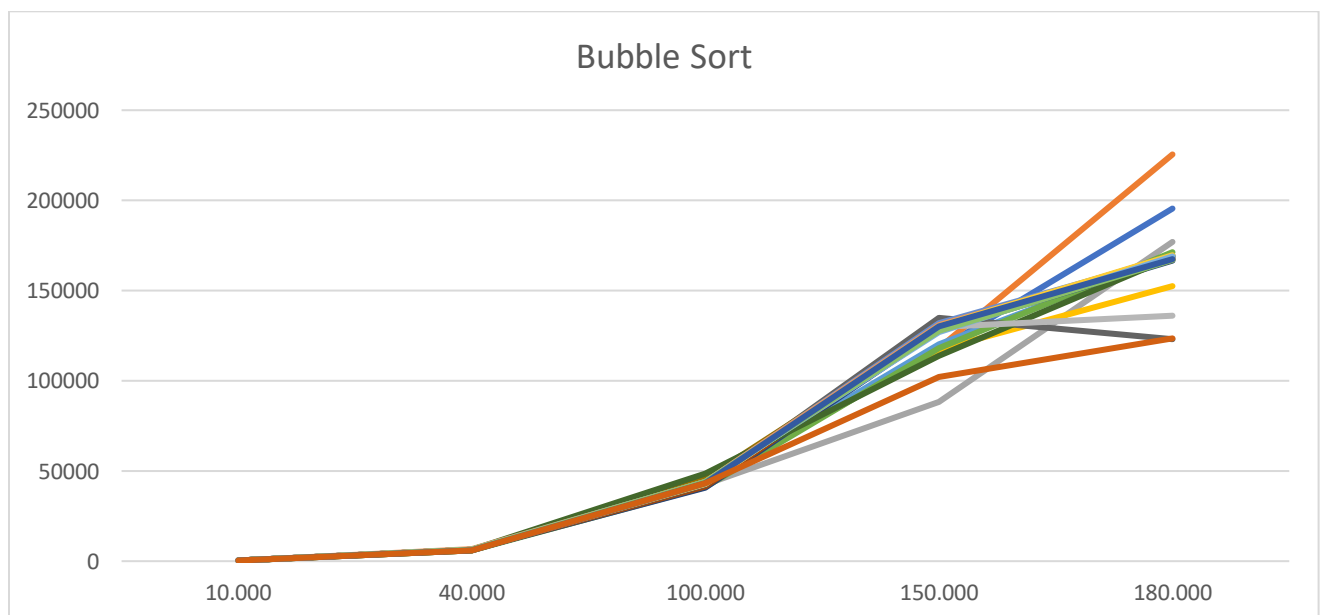
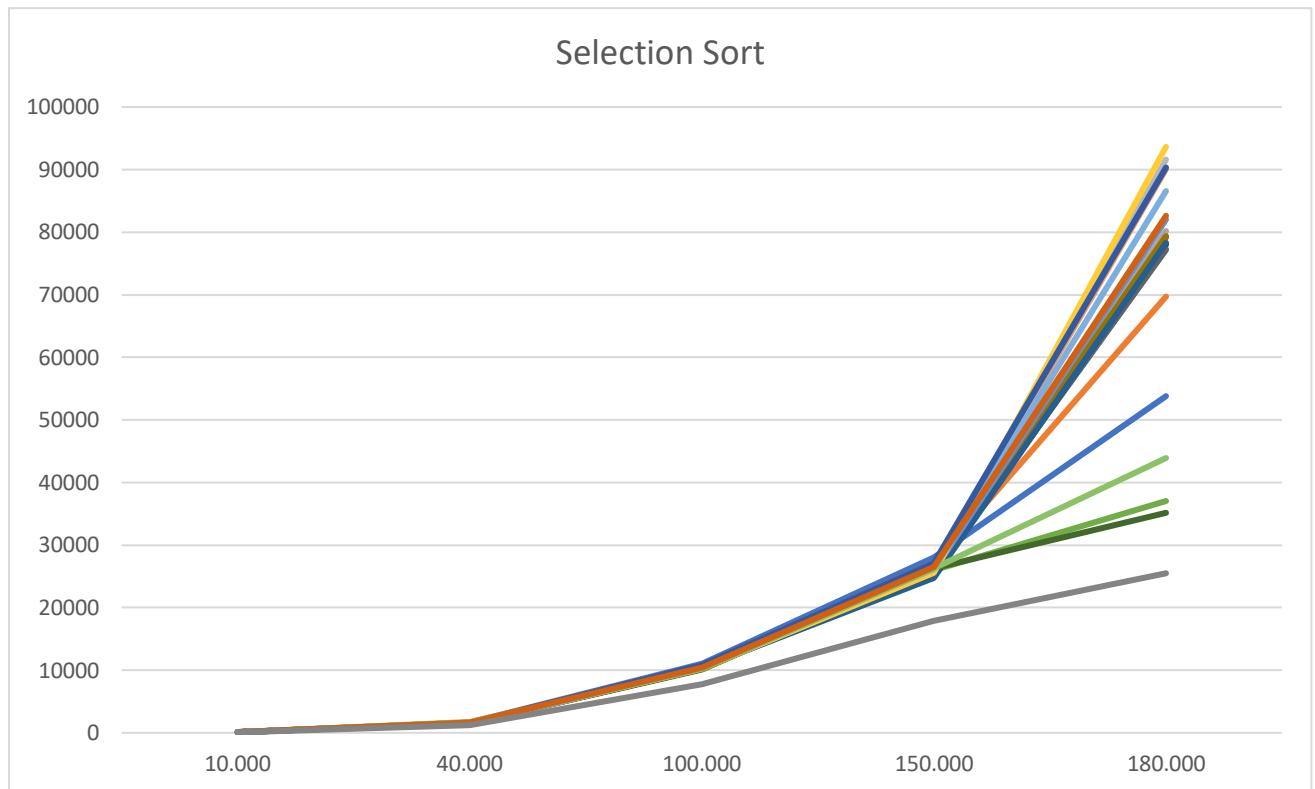
**Berke Belgin**

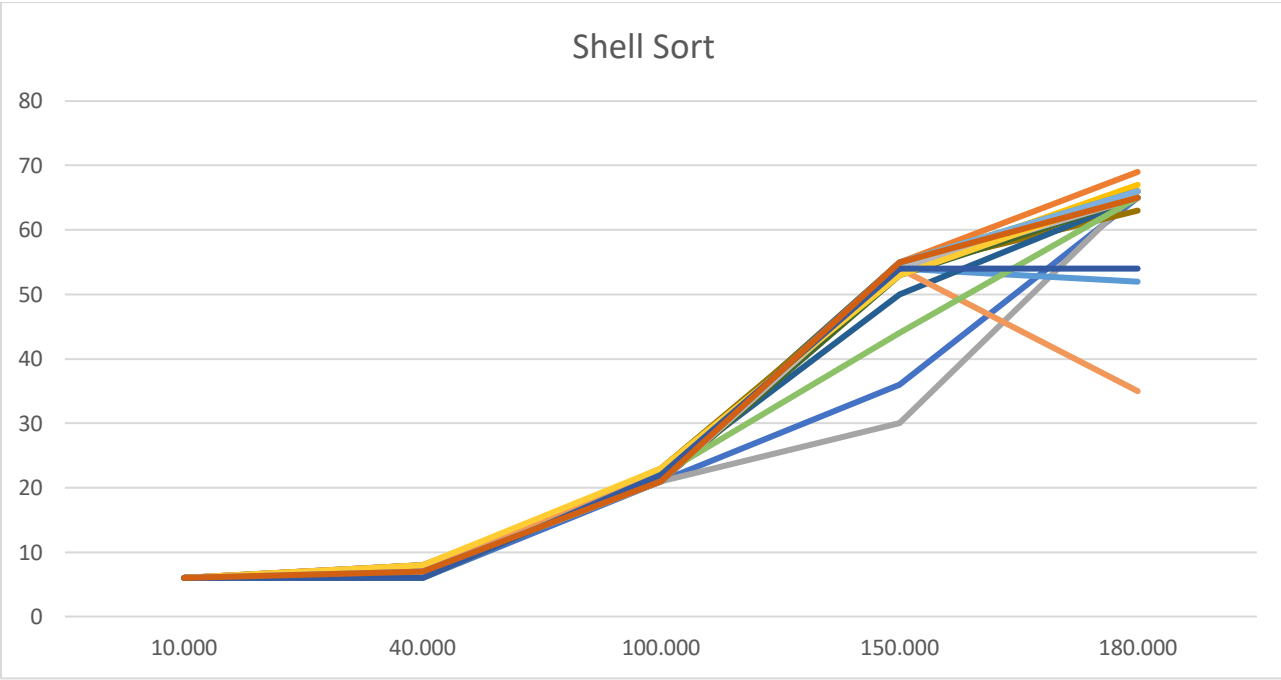
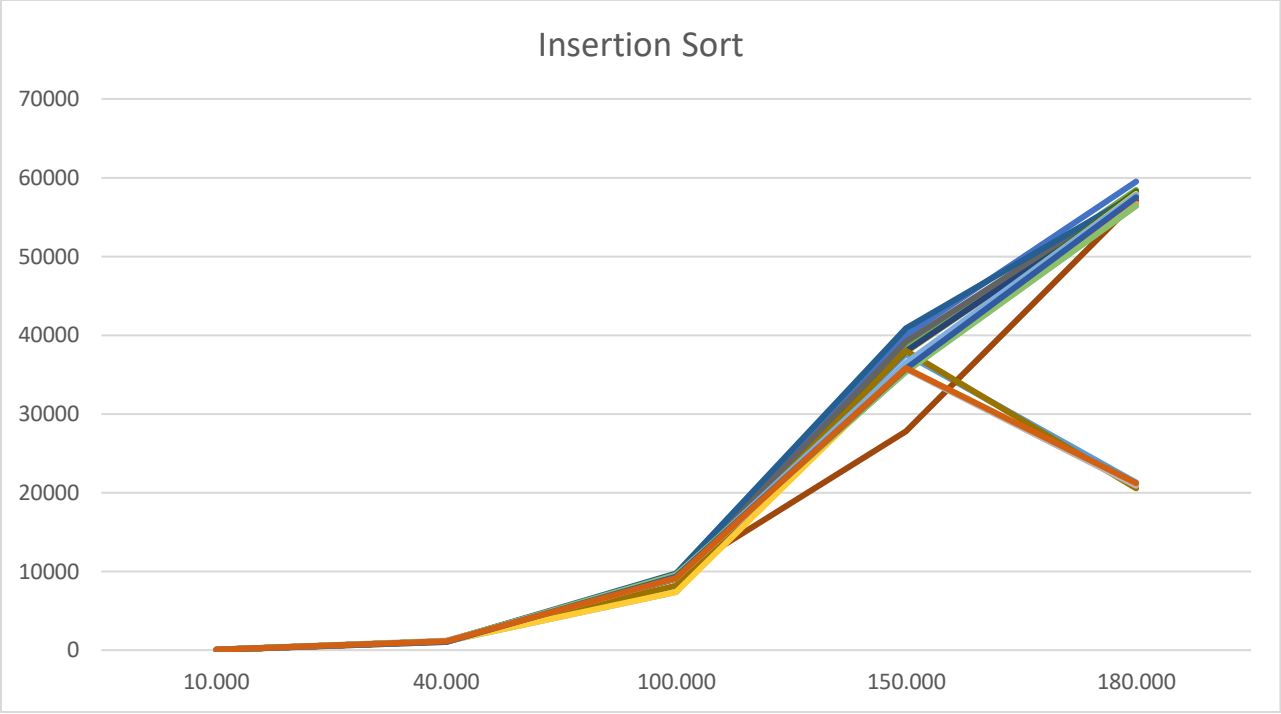
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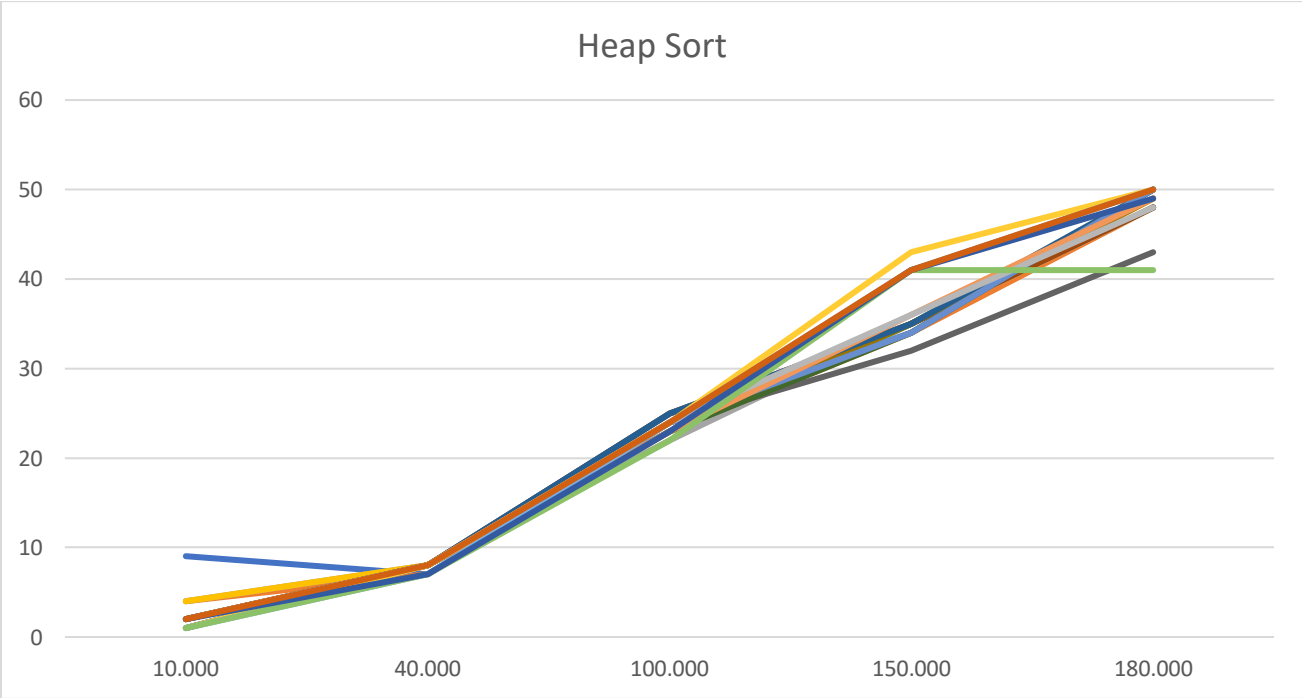
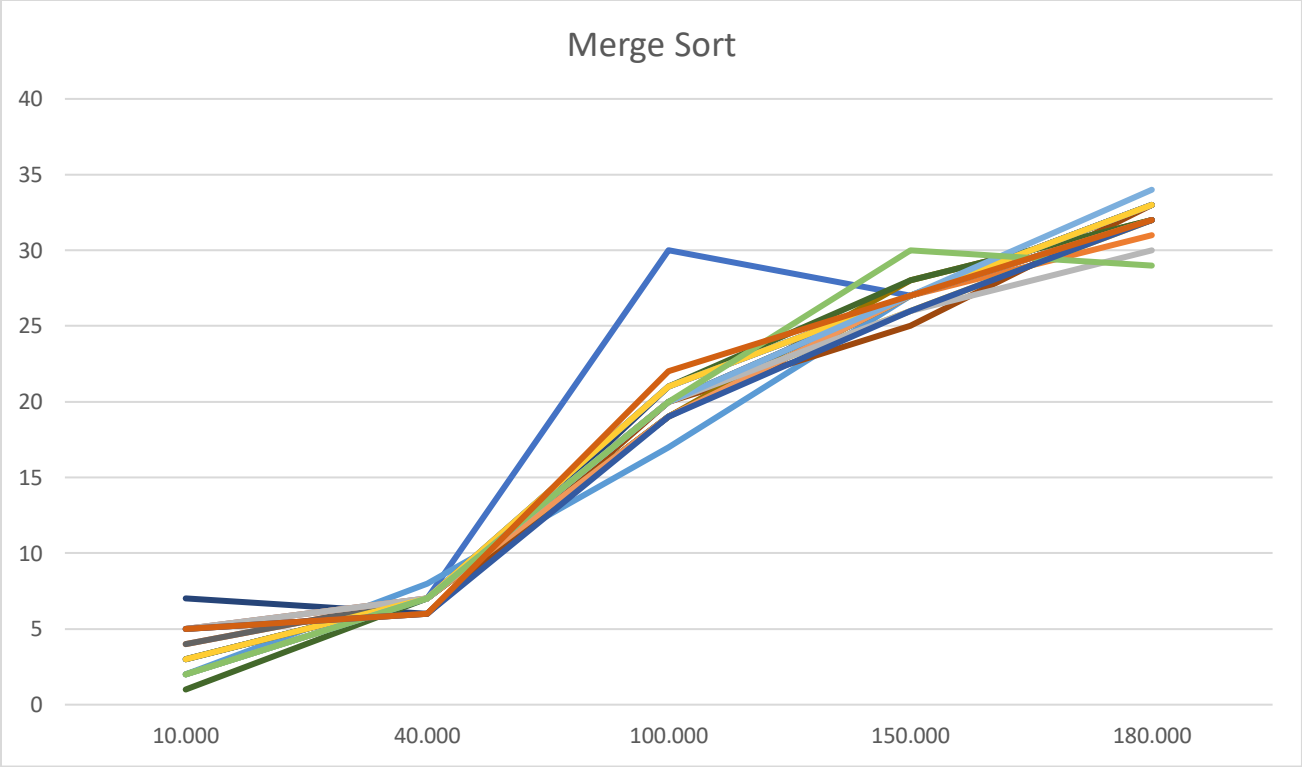
Q1:

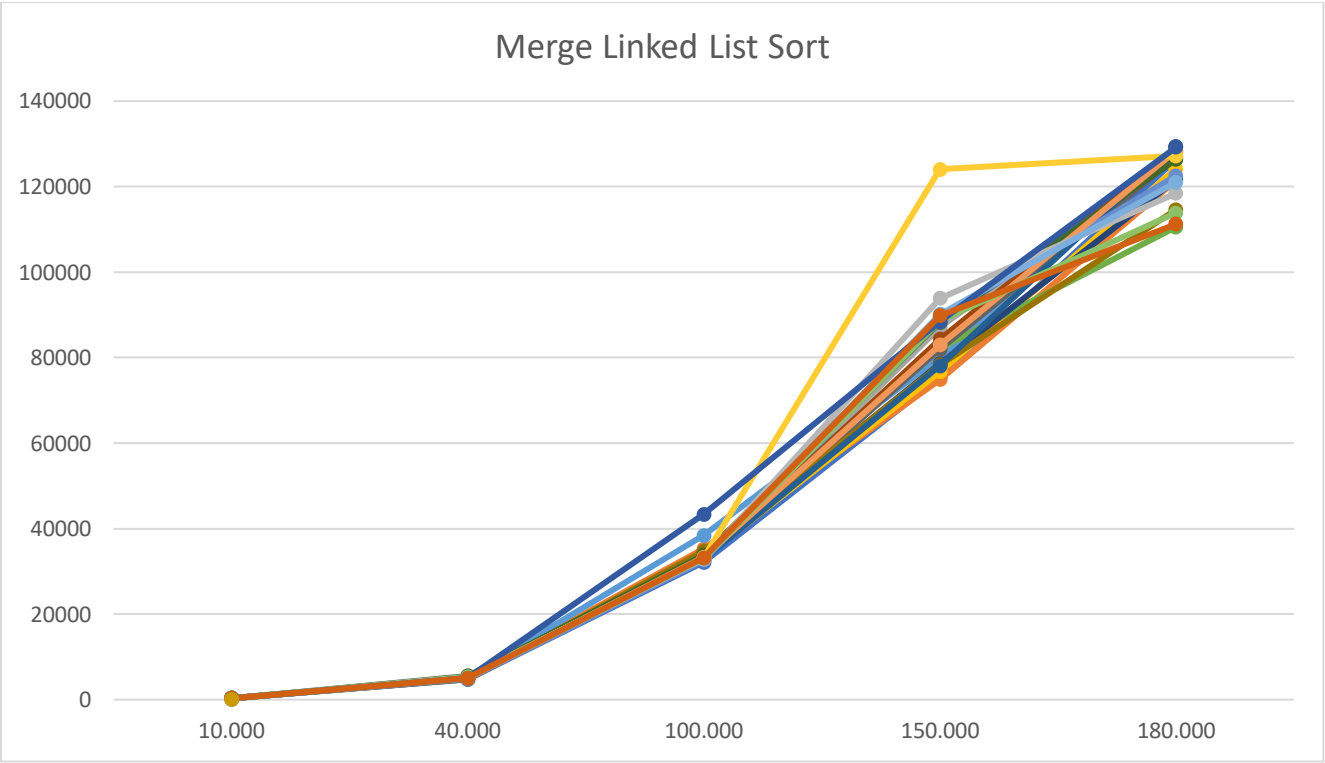
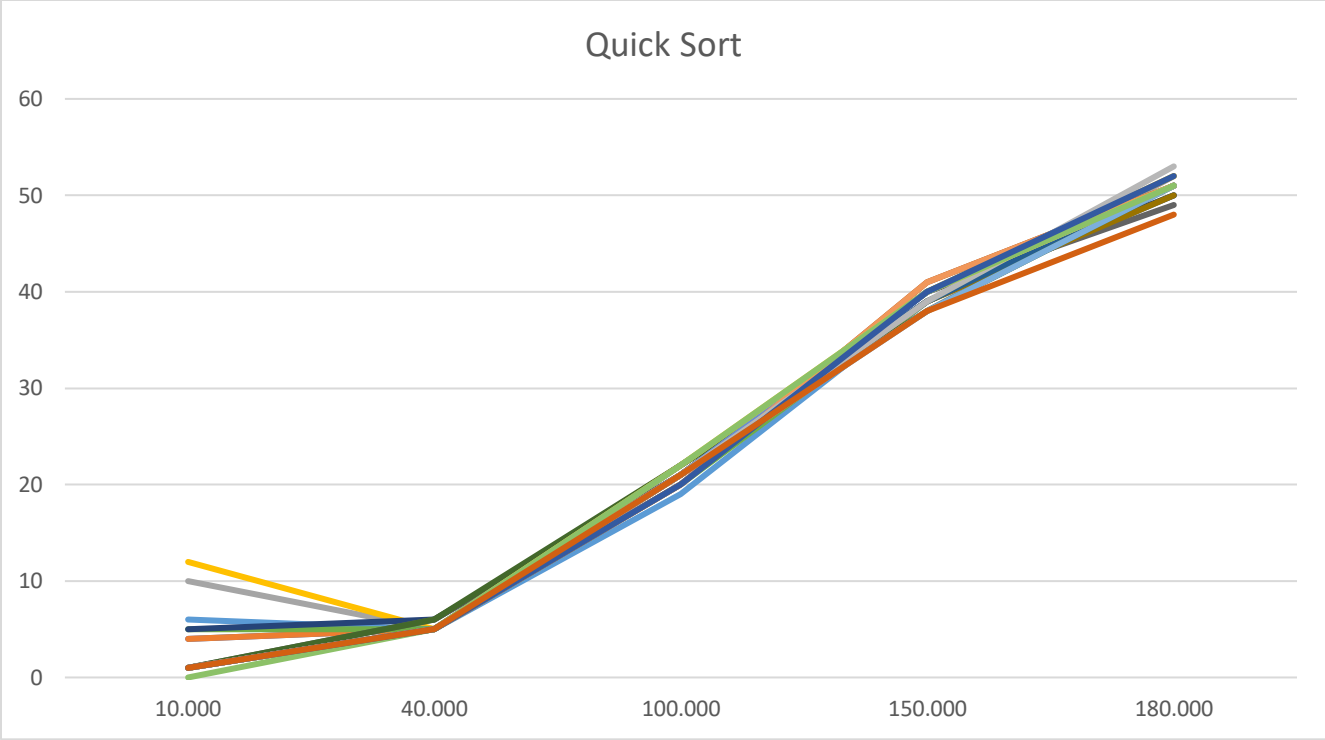
All necessary information is in the Q1 pdf.

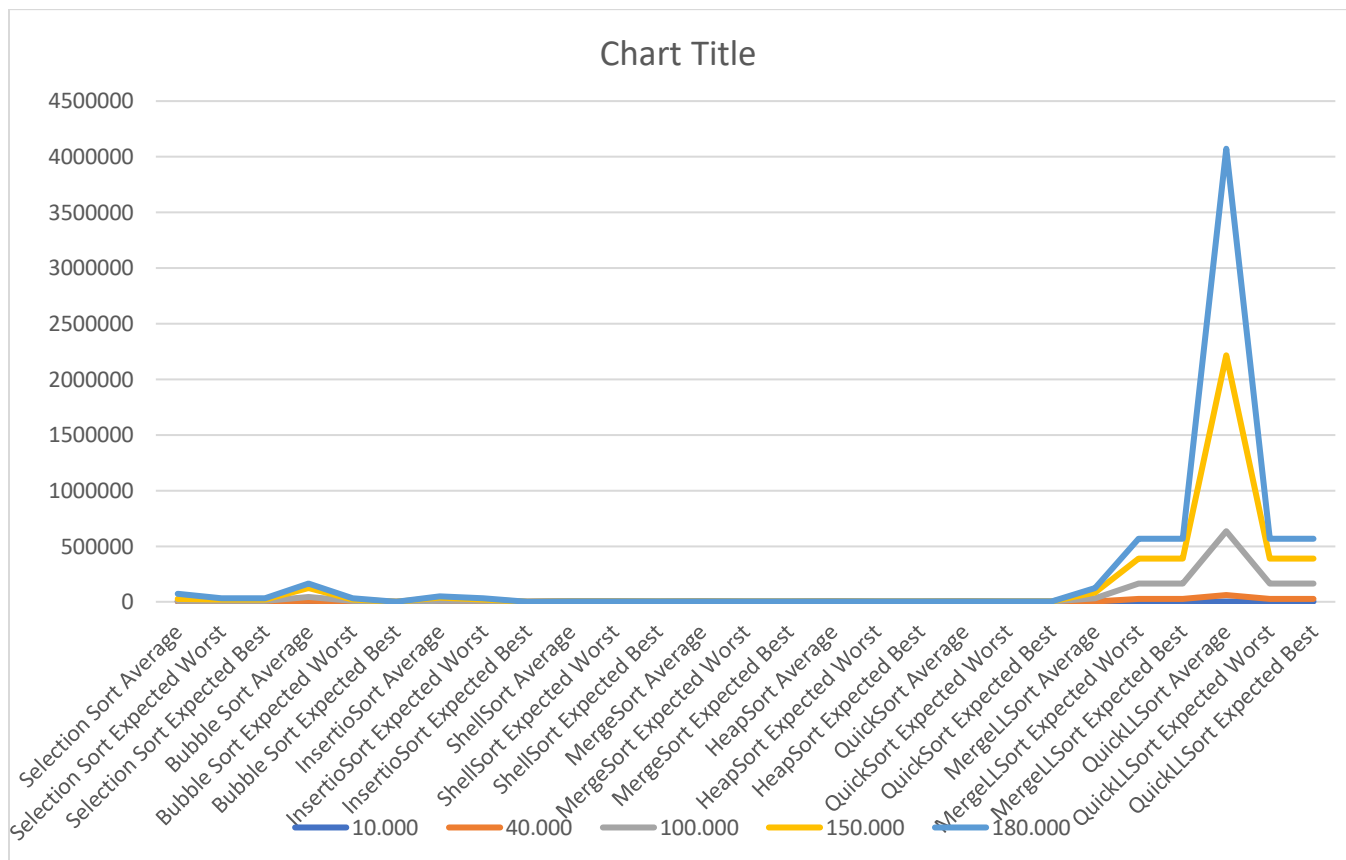
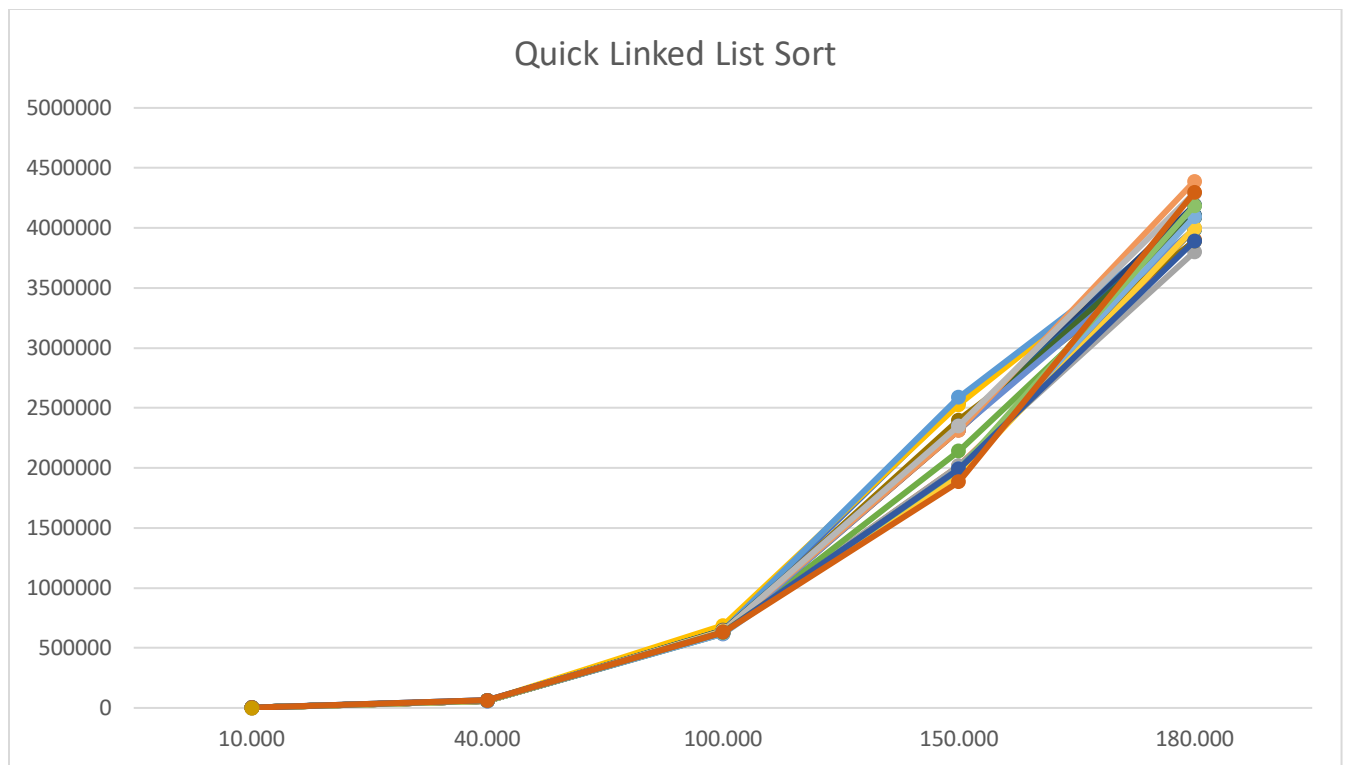
Q2:







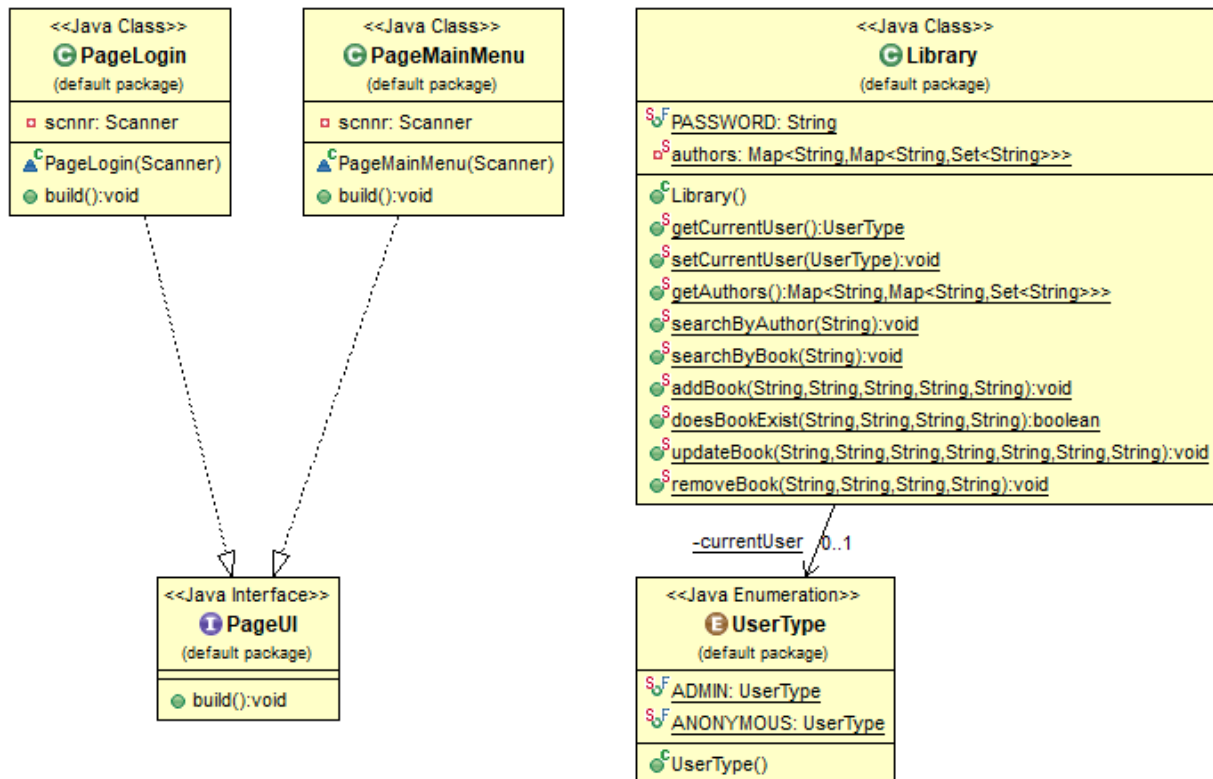




Q3:

Solution Approach: I managed to solve this problem by firstly creating a Library class to encapsulate book handling operations from the rest of the app. I implemented add update remove methods etc. And also I created an interface for UI elements as UIPage interface which lets classes that implements this interface to have a void build() method.

Class Diagram:



Running Results:

Login Menu  
Admin Login: a  
Anonymous Login: n  
Exit: e  
a

Please enter the password: wrong\_password

Login Menu  
Admin Login: a  
Anonymous Login: n  
Exit: e  
a

Please enter the password: 1234

a: Search by author

o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back  
d

Author name: JJR Tolkien  
Book name: LOTR  
Corridor index: 12  
Shelf Index: 12  
Book Index: 12

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back  
d

Author name: JJR Tolkien  
Book name: Silmarillion  
Corridor index: 11  
Shelf Index: 11  
Book Index: 11

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back  
d

Author name: Berke Belgin  
Book name: LOTR  
Corridor index: 13  
Shelf Index: 13  
Book Index: 13

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back  
a

Author name: Berke Belgin  
Berke Belgin - LOTR - c13s13.13

a: Search by author  
o: Search by book title  
d: Add book



e: Delete book  
u: Update book  
b: back

a

Author name: JJR Tolkien  
JJR Tolkien - LOTR - c12s12.12  
JJR Tolkien - Silmarillion - c11s11.11

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back

o

Book name: LOTR  
JJR Tolkien - LOTR - c12s12.12  
Berke Belgin - LOTR - c13s13.13

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back

e

Book name: LOTR  
Corridor index: 13  
Shelf Index: 13  
Book Index: 13

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back

o

Book name: LOTR  
JJR Tolkien - LOTR - c12s12.12

a: Search by author  
o: Search by book title  
d: Add book  
e: Delete book  
u: Update book  
b: back

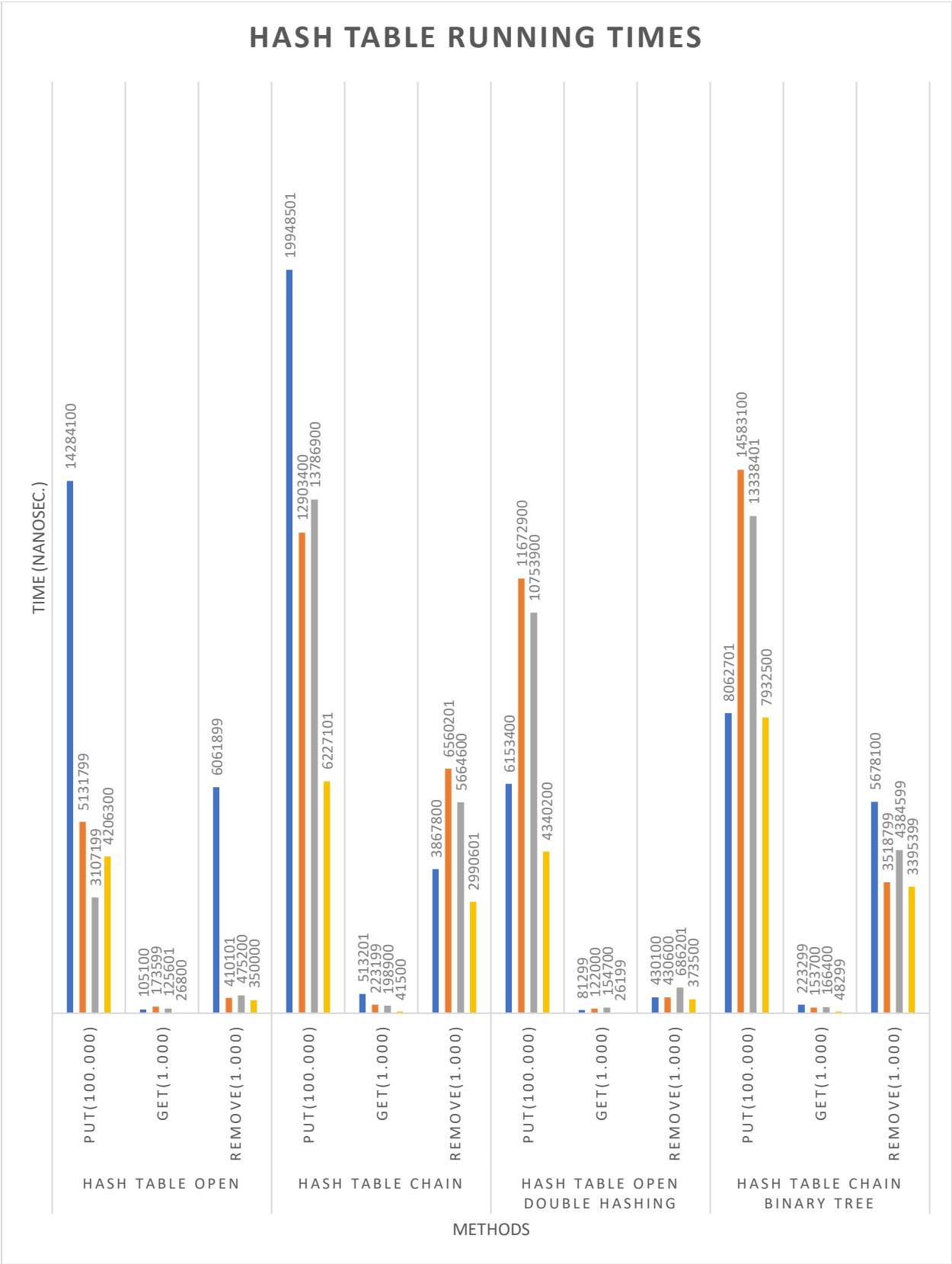
B

a: Search by author  
o: Search by book title

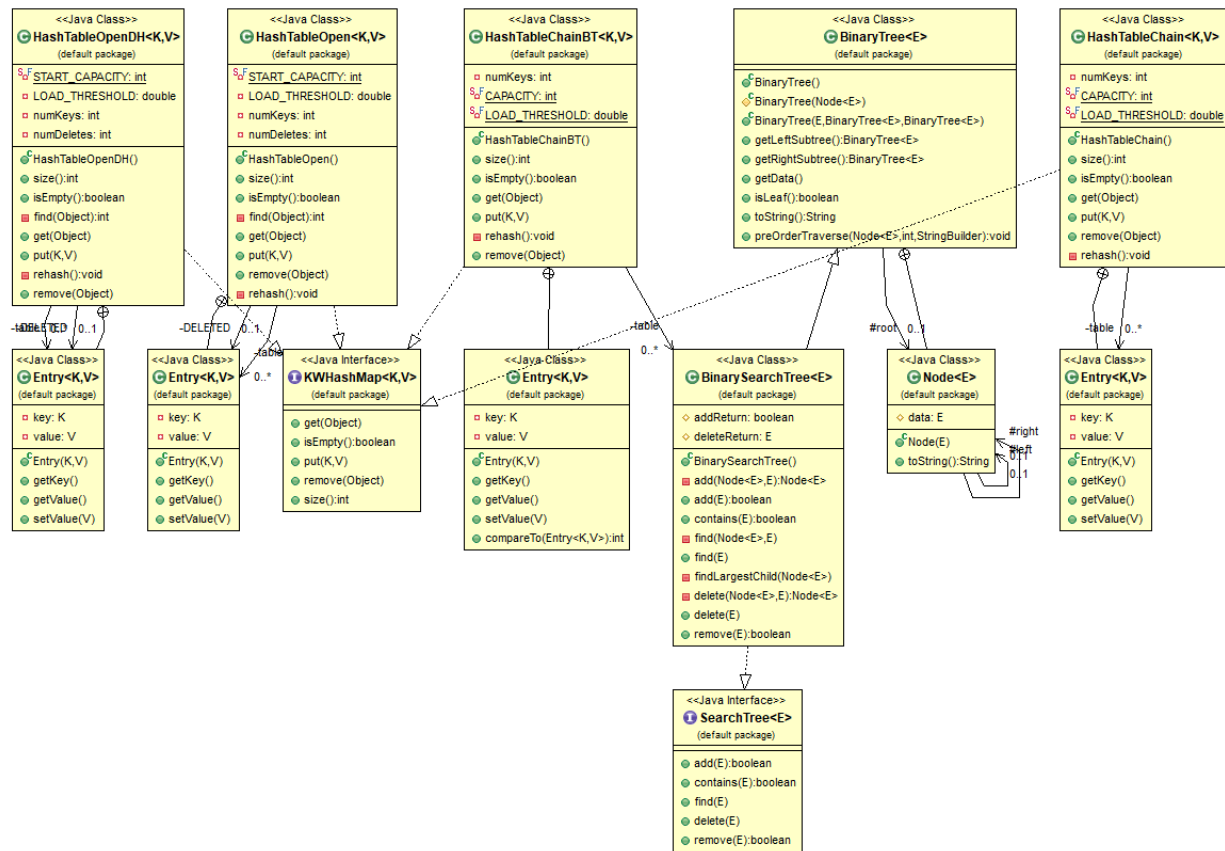
d: Add book  
e: Delete book  
u: Update book  
b: back  
b

Login Menu  
Admin Login: a  
Anonymous Login: n  
Exit: e  
e

Q4:



### Class Diagram:



## Running Results:

```
Console Problems Progress Debug Shell (x)= Variab
<terminated> Main (1) [Java Application] C:\Program Files\Java\jre1.8.0_25
Put Hash Table Open: 13656200
Put Hash Table Chain: 21498800
Put Hash Table Open Double Hashing: 9960300
Put Hash Table Chain Binary Tree: 16752499

Get Hash Table Open: 267501
Get Hash Table Chain: 357201
Get Hash Table Open Double Hashing: 191300
Get Hash Table Chain Binary Tree: 265600

Remove Hash Table Open: 913601
Remove Hash Table Chain: 12444200
Remove Hash Table Open Double Hashing: 898599
Remove Hash Table Chain Binary Tree: 7074701

348
514
372
532
Put Hash Table Open: 7126900
Put Hash Table Chain: 15935100
Put Hash Table Open Double Hashing: 9688699
Put Hash Table Chain Binary Tree: 15293700

Get Hash Table Open: 131100
Get Hash Table Chain: 269700
Get Hash Table Open Double Hashing: 129901
Get Hash Table Chain Binary Tree: 232700

Remove Hash Table Open: 869999
Remove Hash Table Chain: 8601500
Remove Hash Table Open Double Hashing: 1186801
Remove Hash Table Chain Binary Tree: 12332200

366
524
370
512
Put Hash Table Open: 9059001
Put Hash Table Chain: 14351900
Put Hash Table Open Double Hashing: 7495999
Put Hash Table Chain Binary Tree: 13473901

Get Hash Table Open: 42799
Get Hash Table Chain: 103000
Get Hash Table Open Double Hashing: 43700
Get Hash Table Chain Binary Tree: 85599

Remove Hash Table Open: 1244700
Remove Hash Table Chain: 6956500
Remove Hash Table Open Double Hashing: 1770300
Remove Hash Table Chain Binary Tree: 8477700

368
537
362
496
```