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CNG 315 Assignment#2 Report

I cannot determine cpu and memory because I am doing my project on a computer in IT, and it doesn't allow to see this PC's properties. Operating system is Windows 10.

Bucket sorting in Hybrid algorithm (4 input):

```
input - Notepad
File Edit Format View Help
4
0.234545343454
0.454364132323
0.767567575757
0.342342423423
|
```

```
C:\Users\labuser\Desktop\zeyir\1.exe
bucket range is :0.250000
Bucket 1 : 1 element(s)
Bucket 2 : 2 element(s)
Bucket 3 : 0 element(s)
Bucket 4 : 1 element(s)
Will we use bucket sort or quicksort (1:bucket,0:quick):1
-----
Process exited after 0.03903 seconds with return value 0
Press any key to continue . . .
```

Bucket sorting in Hybrid algorithm (8 input):

```
input - Notepad
File Edit Format View Help
8
0.234545343454
0.454364132323
0.767567575757
0.342342423423
0.454364132323
0.717567575757
0.342342423423
0.234545343454
```

```
C:\Users\labuser\Desktop\zeyir\1.exe
bucket range is :0.125000
Bucket 1 : 0 element(s)
Bucket 2 : 2 element(s)
Bucket 3 : 2 element(s)
Bucket 4 : 2 element(s)
Bucket 5 : 0 element(s)
Bucket 6 : 1 element(s)
Bucket 7 : 1 element(s)
Bucket 8 : 0 element(s)
Will we use bucket sort or quicksort (1:bucket,0:quick):1
-----
Process exited after 0.05501 seconds with return value 0
Press any key to continue . . .
```

Quicksort in Hybrid algorithm (4 input):

```
input - Notepad
File Edit Format View Help
4
0.274545343454
0.342342423423
0.342342423423
0.342342423423
```

```
C:\Users\labuser\Desktop\zeyir\1.exe
bucket range is :0.250000
Bucket 1 : 0 element(s)
Bucket 2 : 4 element(s)
Bucket 3 : 0 element(s)
Bucket 4 : 0 element(s)
Will we use bucket sort or quicksort (1:bucket,0:quick):0
-----
Process exited after 0.05244 seconds with return value 0
Press any key to continue . . .
```

Quicksort in Hybrid algorithm (8 input):

```
input - Notepad
File Edit Format View Help
8
0.274545343454
0.342342423423
0.342342423423
0.342342423423
0.372342423423
0.352342423423
0.454364132323
0.767567575757
```

```
C:\Users\labuser\Desktop\zeyir\al.exe
bucket range is :0.125000
Bucket 1 : 0 element(s)
Bucket 2 : 0 element(s)
Bucket 3 : 6 element(s)
Bucket 4 : 1 element(s)
Bucket 5 : 0 element(s)
Bucket 6 : 0 element(s)
Bucket 7 : 1 element(s)
Bucket 8 : 0 element(s)
Will we use bucket sort or quicksort (1:bucket,0:quick):0
-----
Process exited after 0.05542 seconds with return value 0
Press any key to continue . . .
```

Quicksort is better for worst case. Bucketsort is good at first but it grows faster as we can see in samples.

Now ,I will test only bucketsort without hybrid algorithm(4 input):

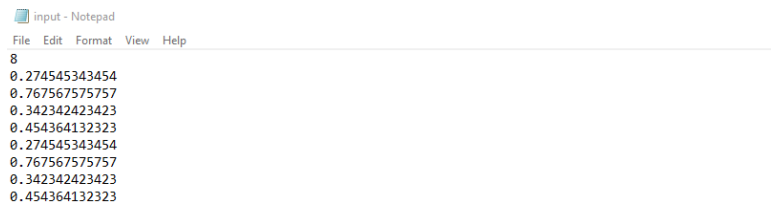
```
input - Notepad
File Edit Format View Help
4
0.274545343454
0.767567575757
0.342342423423
0.454364132323
```

```
C:\Users\labuser\Desktop\zeyir\al.exe
-----
Process exited after 1.062 seconds with return value 3221225477
Press any key to continue . . .
```

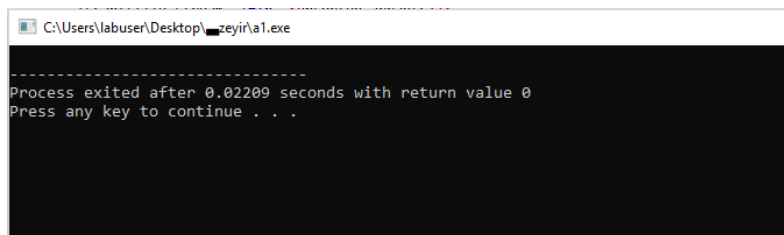
Quicksort with same input without hybrid algorithm:

```
C:\Users\labuser\Desktop\zeyir\al.exe
-----
Process exited after 0.03485 seconds with return value 0
Press any key to continue . . .
```

Quicksort with 8 input without hybrid algorithm:



```
input - Notepad
File Edit Format View Help
8
0.274545343454
0.767567575757
0.342342423423
0.454364132323
0.274545343454
0.767567575757
0.342342423423
0.454364132323
```



```
C:\Users\labuser\Desktop\zeyir\al.exe
-----
Process exited after 0.02209 seconds with return value 0
Press any key to continue . . .
```

Quicksort without hybrid algorithm far faster than hybrid one. Bucketsort without hybrid algorithm is worst for performance.

Comparison scaling:

Quicksort alone > Hybrid Algorithm > bucketsort alone