

Assignment # 3

(Handwritten)

CS 302 – Design and Analysis of Algorithm

Spring 2021

Deadline: 28th May 2021 (11:55PM)

Soft Copy Slate Deadline: 29th May 2021 (11:55PM)

(This assignment is for All Sections)

This is a group Assignment.

Cross Section group strictly NOT allowed.

Total Member allowed = Max: 3

Work Division is your responsibility in any case.

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1. A single violation of guideline will lead to Zero mark in your assignment.
 2. Print the document and solve it in your own handwriting. Get it scanned (pdf) or take picture (jpg) and submit on Slate. Try to use White A4 Pages.
 3. Slate address:
<http://slate.nu.edu.pk/portal>
OR
<http://203.124.42.218:8080/portal>
 4. You have been given whole **1 day for only submission** purpose so **NO email submission** will be accepted.
 5. You are encouraged to take help from Internet and books but clearly mention the source.
 6. Support your solution/proves with some examples.
 7. Try to give detailed answer. Shortcuts will lead to partially negative marks.
 8. This is a group Assignment, make groups on your own responsibility. Excuses will not be entertained like a member didn't attempt his/her part.
 9. Cross Section group strictly NOT allowed.
 10. **Total Member allowed = 3, Assignment will be checked as a whole work, not individual work will be marked as full work, so work division is your responsibility.**
 11. Work Division is your responsibility if members are less than 3.
 12. Only one member must Submit all members work in a zip file contains this report and your handwritten solved work.
 13. Zip file must be named as:
Rollnumber1_Rollnumber2_Rollnumber3_Section_Assignment3
For example: 19f0123_19f0345_19f0567_A_Assignment3

Member: 1 Algorithms performed (Green):

Roll No: _____

Section: _____

Name: _____

Member: 2 Algorithms performed (Red):

Roll No: _____

Section: _____

Name: _____

Member: 3 Algorithms performed (Blue):

Roll No: _____

Section: _____

Name: _____

Question : Apply the following Algorithm on the below data. Show complete steps.

a. Insertion sort

3,44,38,5,47,15,36,26,27,2,46,4,19,50,48,43,33,34,25,1

b. Bubble sort

3,44,38,5,47,15,36,26,27,2,46,4,19,50,48,43,33,34,25,1

c. Selection sort

3,44,38,5,47,15,36,26,27,2,46,4,19,50,48,43,33,34,25,1

d. Merge sort

3,44,38,5,47,15,36,26,27,2,46,4,19,50,48,43,33,34,25,1

e. Quick sort

3,44,38,5,47,15,36,26,27,2,46,4,19,50,48,43,33,34,25,1

f. Heap sort

3,44,38,5,47,15,36,26,27,2,46,4,19,50,48,43,33,34,25,1

g. Count sort

2,5,1,6,11,18,14,17,8,16,3,12,9,19,15,20,4,10,7,13

h. Bucket sort

56, 12, 84, 28, 0, -13, 47, 94, 31, 12, -20, 45, 3, 1, -12, -12, 74, 83, 83, 82, 13, 32, 10, -18

i. Radix sort

48937

49362

49029

46822

51190

53565

50344

46312

49280

47871

51456

48369

48481

49849

52474

50028

54048

46132

54187

46246

54137

50157

49294

45618

52699

47285

46976

55355

45385

47421

46776

53641

50059

47244