

RIPHAH INTERNATIONAL UNIVERSITY, LAHORE CAMPUS.

RIPHAH SCHOOL OF COMPUTING & INNOVATION (RSCI)



COMPLEX PROBLEM SOLVING

ASSIGNMENT 01

Issue Date: 09-10-2022

Due Date: 14-10-2022

Semester: FALL 2022

Class: BSCS (7A)

Total Marks: 100

Objectives:

- Practice on problem solving.

Instructions:

- Assignment type is individual, so no sharing is allowed.
- You can use internet and books as helping resources but sharing content with peers is strictly prohibited.
- **Plagiarized assignments will get zero and may fail the course.**
- I am available for your help/guidance.
- **Start early!**

Submission Method:

- Write everything in word file. You can also solve on paper and attach pictures in word file.
 - Submit only MS Word or PDF file at [this link](#).
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Design algorithms for following given problems.

Problem A1-1

Given the array of size **n**, reverse array elements in pair of two. (Assume n is even)

For Example:

Input:

1	2	3	4	5	6	7	8
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Output:

2	1	4	3	6	5	8	7
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Problem A1-2

Given the array of size **n**, and a **target** value. Find the pair of numbers (exactly two) from array whose sum is equal to target.

Note that there could be more than one such pairs in an array. You need to identify just one pair.

For Example:

Input:

4	6	2	1	7	3	8	5
---	---	---	---	---	---	---	---

Target = 9

Output:

2, 7

Problem A1-3

Given the array of size **n**, rotate array elements to left side by one element.

For Example:

Input:

4	6	2	1	7	3	8	5
---	---	---	---	---	---	---	---

Output:

6	2	1	7	3	8	5	4
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SELF STUDY

You must have heard about **“Sorting”**. Its arranging elements in either ascending or descending order.

Study about sorting techniques (Bubble sort, Selection sort, Merge sort and others) that can be applied on arrays. It is recommended to practice sorting techniques on sample arrays.

What is the best sorting technique available?

*Self-study is highly recommended for you before coming to the next class. Anyhow, it is optional in submission.

Good Luck 😊