

TD 01

Questions and Answers

1. By creating an index the data will increase in term of size:
 True.
 False.
2. Unstructured data means:
 Has clear semantic forms.
 Has not clear semantic forms.
3. Information retrieval goal is:
 Build index of data.
 Retrieve largest document in the collection.
 Retrieve non-relevant documents to a user query.
 Retrieve relevant documents to a user query.
4. Information retrieval match query directly to document data (ex: PDF file):
 True.
 False.
5. Describe steps for the following: Given a set of documents, find the documents that contain information about a particular topic

Data Structure & Algorithms

1. Write an algorithm to sort a binary array in linear time. The output should print all zeroes (0), followed by all ones (1).

Input: { 1, 0, 1, 0, 1, 0, 0, 1 }

Output: { 0, 0, 0, 0, 1, 1, 1, 1 }

2. Write an algorithm to delete all duplication from a sorted linked list:

Example: Input: 1->1->2->3->3->4

Output: 1->2->3->4

3. Given an integer x, return x with its digits reversed.

4. Given the following code:

```
int i = 0, j = 0, m = 0, c = 0;
while (i < array.Count)
{
    if (array[i] == array[j])
        c++;
    j++;
    if (j >= array.Count)
    {
        if (c > m)
            m = c;
        c = 0;
        i++;
        j = i;
    }
}
```

5. Write an algorithm to extract commune values in two sorted list, the algorithm must executed in linear time complexity.

- Given **array** = {15, 25, 36, 1, 1, 25, 63, 8, 8, 8, 1, 1, 1, 8, 9, 8, 96, 8}, what is the value of the variable **m**
- What does the code do, knowing that the variable m is the result?
- What is the complexity of the code
- Describe another algorithm that would be better in time complexit