Assignment Three - Programming

Problem 1

Question

Given an integer n, return the count of all numbers with unique digits x, where $0 \leq n < 10$ and $0 \leq x < 10^n$. **Please give a Dynamic Programming solution.**

Example

Case 1

```
Input: n = 2
Output: 91
Explanation: The answer should be the total numbers in the range of 0 ≤ x <
100, excluding 11,22,33,44,55,66,77,88,99
```

Case 2

```
Input: n = 0
Output: 1
```

Problem 2

Question

Given an array of intervals intervals where $intervals[i] = [start_i, end_i]$, return the minimum number of intervals you need to remove to make the rest of the intervals non-overlapping.

Example

Case 1

```
Input: intervals = [[1,2],[2,3],[3,4],[1,3]]
Output: 1
```

Case 2

```
Input: intervals = [[1,2],[1,2],[1,2]]
Output: 2
```

Case 3

```
Input: intervals = [[1,2],[2,3]]
Output: 0
```

Note

Keypoints

- Please use **C++** to implement above algorithm and provide **screenshots of the output results**
- Your program should run **successfully** and output the **correct** answers for every test case
- Please make sure there are **necessary comments** in your source code. Plagiarism is strictly forbidden.

Submission

- Compilable C++ source codes
- A brief documentation (PDF is recommended)
- Pack all above files and compress it into a **ZIP** file. Please rename the ZIP file as '**StudentID_Name_Assignment_3.zip**'
- Send the zip file to the email of TA:
  - **Mon. 3-4** 354207983@qq.com
  - **Mon. 5-6** 792093953@qq.com
- Please send the email **by Jun.14th, 2021**.