**CSE204 :Data Structures and Algorithms Sessional**

Offline-2: Problem 2

Report on:

Generation of all Distinct Subsets of a Given Set

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**Time Complexity Analysis:**

Power set algorithm is of order O(n\*2n). There are 2 loops in total. The outer loop runs 2n times, going through all possible power sets of a set. The inner loop runs n times each step, as the loop traverses set size.

**Machine Configuration:**

Processor: Intel® Core(TM) i7-7500U CPU @ 2.70GHz 2.90GHz

RAM : 8.00 GB (7.80 GB usable)

Operating System : 64 bit Windows 10 pro

**Output:**

Set Size-Time in microseconds

1 0

2 997

3 1992

4 3989

5 1456919

6 2375592

7 3264381

8 1782977

9 1180025

10 895000

11 3668243

12 3301071

13 2953587

14 3840326

15 5685623

16 64634373

17 17049982

18 16831157

19 16360084

20 67762312

21 34608699

22 139486785

23 13049033

24 26814088

25 429705778

26 108350243

27 233693282

28 581790262

29 1015375454

30 1596597453