**Assignment-0:**

a. Any 20 problems from https://www.hackerrank.com/contests/smart-interviews-basic/challenges

b. At least 25 problems from https://www.hackerrank.com/domains/algorithms

c. Any 15 problems from http://codeforces.com/problemset?order=BY_SOLVED_DESC

d. Any 15 problems from https://www.codechef.com/problems/school?sort_by=SuccessfulSubmission&sorting_order=desc

e. Any 5 problems from https://www.spoj.com/problems/classical/sort=6

f. Any 3 problems from https://www.hackerrank.com/domains/data-structures

**Assignment-1:**

1. At least 15 problems from the 1st 25 problems in https://www.hackerrank.com/contests/smart-interviews/

2. All problems from https://www.interviewbit.com/courses/programming/topics/time-complexity/#problems from "Basic primer", "Math" and "Compare functions".

3. At least 3 problems from https://www.interviewbit.com/courses/programming/topics/bit-manipulation/#problems

4. At least 5 problems from https://www.hackerrank.com/domains/algorithms/bit-manipulation

5. At least 2 problems from https://www.interviewbit.com/courses/programming/topics/math/#problems

6. Go through basic sorting algorithms: Bubble Sort, Selection Sort, Insertion Sort

7. MUST participate in Codeforces Round #686 (Div. 3) on Tuesday, 8PM. You can register right away: https://codeforces.com/contests

**Assignment-2:**

(A) https://www.hackerrank.com/contests/smart-interviews/challenges

1. TOH [Recursion]
2. Triple Triple [Bit-Manipulation]
3. Repeated Numbers [Bit-Manipulation]
4. Compute a power b [2 solutions]
5. Subset Sum Problem [Page-12: 2 solutions]
6. Bubble Sort Adhoc/Selection Sort Adhoc/Insertion Sort Adhoc
7. Compute Factorial [Page-10: T+N instead of TxN]
8. Interleavings

(B) InterviewBit
1. Different Bits Sum Pairwise
2. Repeat and Missing Number Array

(C) https://www.hackerrank.com/challenges/magic-square-forming/problem [2 solutions]

(D) At least 5 more problems from each of the following:
1. CodeChef
2. CodeForces
3. Smart Interviews Basic

(E) At least 2 problems from each of the following:

1. https://www.interviewbit.com/courses/programming/topics/arrays/#problems
2. https://www.interviewbit.com/courses/programming/topics/math/#problems

(F) Few problems on Backtracking from the following:

1. https://www.interviewbit.com/courses/programming/topics/backtracking/#problems
2. https://www.hackerrank.com/interview/interview-preparation-kit/recursion-backtracking/challenges

**Assignment-3:**

1. Any 5 problems from
https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:4

2. BF Backtracking solution for https://www.hackerrank.com/contests/smart-interviews/challenges/si-cabinets-partitioning

3. Following problems from
https://www.hackerrank.com/domains/algorithms/implementation :
a) Migratory Birds
b) Sock Merchant
c) Picking Numbers
d) Non-Divisible Subset

4. Any 5 problems from
https://www.interviewbit.com/courses/programming/topics/two-pointers/#problems

5. Any 3 problems from
https://www.interviewbit.com/courses/programming/topics/binary-search/#problems

6. The following solutions of https://www.hackerrank.com/contests/smart-interviews/challenges/si-finding-frequency
a. Sort + 1BS + Expand
b. Sort + 2BS
c. Sort + Compress to A,B + BS
d. Sort array + Sort queries + 2-pointer + BS in original queries
e. Inbuilt HashMap Library

7. At least 3 problems from https://www.codechef.com/DEC20B

8. https://www.codechef.com/problems/RGAME

9. https://www.hackerrank.com/challenges/crossword-puzzle/problem

10. 1 attempt on https://www.hackerearth.com/codearena/

**Assignment-4:**

1. https://www.hackerrank.com/contests/smart-interviews/challenges/si-sum-of-pairs
a. MS + BSR
b. Unsorted HashMap
c. Unsorted HashSet

2. https://www.hackerrank.com/contests/smart-interviews/challenges/si-repeated-numbers
a. Sorted HashMap
b. Unsorted HashSet

3. Explore other inbuilt libraries/functions as per your language of choice

4. Any 10 puzzles from https://www.interviewbit.com/puzzles/#problems

5. Any 2 problems from
https://www.interviewbit.com/courses/programming/topics/hashing/#problems

6. Codeforces Round #690 (Div. 3) on Tuesday at 8PM IST. Register now!

7. All pending assignment problems

8. Quick Sort Algorithm
Additional Interesting Problems on BS

1. https://www.hackerrank.com/contests/smart-interviews/challenges/si-cabinets-partitioning

2. https://www.spoj.com/problems/AGGRCOW/

3. https://www.interviewbit.com/problems/matrix-median/

4. http://codeforces.com/contest/913/problem/D

More problems on Hashing

1. https://www.codechef.com/tags/problems/hashing

2. https://codeforces.com/problemset?tags=hashing

3. https://a2oj.com/category?ID=93

[These filters can be used for any topic]

**Assignment-5:**

1. At least 5 new problems from https://www.hackerrank.com/contests/smart-interviews/ [Page-5,6]

2. At least 5 additional problems from https://www.interviewbit.com/courses/programming/topics/strings/#problems

3. At least 20 problems on strings from https://www.hackerrank.com/domains/algorithms/strings

**All assignments combined(6):**

1. At least 50 problems from the first 60 problems in https://www.hackerrank.com/contests/smart-interviews/

2. At least 5 problems from each of the following sections on https://www.interviewbit.com/courses/programming/

Time Complexity/Arrays/Math/Binary Search/Bit Manipulation/Two Pointers/Strings/Hashing/Backtracking

3. http://hackerrank.com/domains/algorithms/game-theory

4. At least 5 problems from each of the sections discussed from https://www.hackerrank.com/domains/algorithms

5. At least 20 problems from spoj, including the following:

TDKPRIME/TDPRIMES/PRIME1/ADACUT/ADAFRIEN/THREENUMBERS/ TBATTLE/AGGRCOW/SUBXOR/WATER

6. https://www.youtube.com/watch?v=u_p1SHtNtck&t=4s

More problems using filters and tags

1. https://www.codechef.com/tags

2. https://codeforces.com/problemset?tags=<topic>

3. https://www.a2oj.com/Categories.html

4. https://problemclassifier.appspot.com

5. https://community.topcoder.com/tc?module=ProblemArchive

**Assignment-7:**

1. Revise entire notes thoroughly

2. Continue working on previous combined assignments

3. Solve few problems from Stacks/Queues from:

a. https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:7

b. https://www.interviewbit.com/courses/programming/topics/stacks-and-queues/#problems

4. Go through basics of LinkedLists

**Assignment-8:**

1. Try solving all problems from https://www.hackerrank.com/contests/smart-interviews-18b/challenges

2. Solve all problems on Stacks/Queues from:

a. https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:7

b. https://www.interviewbit.com/courses/programming/topics/stacks-and-queues/#problems

3. Any 8 problems from http://hackerrank.com/domains/data-structures/linked-lists

4. Any 5 problems from https://www.interviewbit.com/courses/programming/topics/linked-lists/#problems

5. Go through basics of Trees

**Assignment-9:**

1. All problems on Linked Lists froma. http://hackerrank.com/domains/data-structures/linked-lists

b. https://www.interviewbit.com/courses/programming/topics/linked-lists/#problems

2. At least 5 problems on Trees from each of the following links:

a. https://www.hackerrank.com/domains/data-structures/trees

b. https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:8

c. https://www.interviewbit.com/courses/programming/topics/tree-data-structure/#problems

**Assignment-10:**

1. All problems on Trees from:

a. https://www.hackerrank.com/domains/data-structures/trees

b. https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:8

c. https://www.interviewbit.com/courses/programming/topics/tree-data-structure/#problems

2. Solve https://www.hackerrank.com/contests/smart-interviews/challenges/si-implement-min-heap using own implementation

3. Solve https://www.hackerrank.com/contests/smart-interviews/challenges/si-implement-min-heap using inbuilt library

**Assignment-11:**

1. All problems from "Implement MinHeap" to "Rhymes" from https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:10

2. All problems from https://www.hackerrank.com/domains/data-structures/trie

3. All problems on heaps from https://www.interviewbit.com/courses/programming/topics/heaps-and-maps/

4. All problems from https://www.hackerrank.com/domains/data-structures/heap

5. https://www.spoj.com/problems/SUBXOR/

6. 3-5 total problems on DP from:

a) https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:11

b) https://www.interviewbit.com/courses/programming/topics/dynamic-programming/

c) https://www.hackerrank.com/domains/algorithms/dynamic-programming

7. Few more basic problems from CodeChef/Codeforces/Spoj

**Final Assignment:**

1. All problems on Graphs from https://www.hackerrank.com/contests/smart-interviews/challenges/filters/page:12

2. At least 10 problems from https://www.interviewbit.com/courses/programming/topics/graph-data-structure-algorithms/#problems

3. At least 5 problems from https://www.hackerrank.com/domains/algorithms/graph-theory

4. Problems listed at the bottom in "Graph Theory" PDF material.

**PDF Materials:**

1. Programming Essentials - https://drive.google.com/file/d/1EuYeu29E0aIMcagdQ5ndSSv7frdzNTre/view?usp=sharing

2. Data Types, Operators and Bit Manipulations - https://drive.google.com/file/d/1PpT8Vqwb9NaTWwv_QVpgMfA_ZItx6CVX/view?usp=sharing

3. Complexity Analysis of Algorithms - https://drive.google.com/file/d/1rRKCo1BPZU8TQ0SdPOvyiZ8FBvhgyC4B/view?usp=sharing

4. Complexity Analysis Problem Set - https://drive.google.com/file/d/1FjAn3TdmY9ej03X4bNCrWNtfJ9S2OFx0/view?usp=sharing

5. Complexity Analysis Solution Set - https://drive.google.com/file/d/1zZXTQFpbRtaBRA_ryhr7VOR0qP8qDYAQ/view?usp=sharing

6. Recursion - https://drive.google.com/file/d/19YF-ImSsdbUebJkg_h-lXXzMIg9Rmis9/view?usp=sharing

7. Sorting - https://drive.google.com/file/d/15xfXxH3hBcv28Whthqmtty96murPKLss/view?usp=sharing

8. Searching - https://drive.google.com/file/d/15QapSt_S8ki2EOfJffpWBnQqsiW47JGm/view?usp=sharing

9. Hashing - https://drive.google.com/file/d/11hqPCUhg31vzzV_NBI8xwyaDTsud0W6K/view?usp=sharing

10. Strings - https://drive.google.com/file/d/1v9ESPnUmIAUY5LOLM3X7SrG9nfCp4kI5/view?usp=sharing

11. Mixed-bag - https://drive.google.com/file/d/1rtVH32Sxgc6D_4miMd9zZJQrHpz6pqgf/view?usp=sharing

12. Stacks - https://drive.google.com/file/d/1JlWKMlSIoTuLtg0oP3VWjIFSiOmujmuY/view?usp=sharing

13. Queues - https://drive.google.com/file/d/1mqqOjVoPykB6LuxATsJOMVHSD6K6rAmZ/view?usp=sharing

14. Linked Lists - https://drive.google.com/file/d/1umIwWpSEzN9xVtU7KqlXZCtjSk6fFqHA/view?usp=sharing

15. Trees - https://drive.google.com/file/d/1TQaV30IxpeyGYB3OQPV82mXMXb923tR7/view?usp=sharing

16. Heaps - https://drive.google.com/file/d/1cT0-uHGP87SNhO0Z1E30yQhXKuD3eIVJ/view?usp=sharing

17. Trie - https://drive.google.com/file/d/1gsxqBj1gwub34iiNWt-6QwMT2EBK9UUX/view?usp=sharing

18. Greedy Paradigm - https://drive.google.com/file/d/1QAe7LldDkSDK_23-LIc9iutxGtUSRaZz/view?usp=sharing

19. Dynamic Programming - https://drive.google.com/file/d/1nmZtaCgntAI9zG6tgUKY2QDdKDcsbzhT/view?usp=sharing

20. Graph Theory - https://drive.google.com/file/d/1y9oRcTIBU2Hafm9XoAUDsUUMK3dwlEnE/view?usp=sharing