Campus Recruitment - September 2018

(Set - 1)

Time: 1.5 hours **Total mark: 30 (15*2)**

1. **A flight arrived at an airport at 4:20 AM, and the passengers reach the immigration queue, where the counters open at 4:30 AM. There are 3 counters where the passengers can finish their process. First counter takes 5 mins to complete, 2nd takes 7 mins and the third 10 mins. Counters are filled from leftmost counter first, if that's free and so on towards the last one.**

   Write a program to calculate the time at which Nth passenger **finish** their process and leave the counter. Print the time and the counter that they have done their process

   Eg: Input 10

   Output: Passenger at position 10 in queue leave from counter 1 at 4:55 PM

   Input 74

   Output: Passenger at position 74 in queue leave from counter 2 at 7:18 PM

2. **Treasure hunt game:**

   Given a treasure board of n*m dimensions. Each position in this board is a positive integer denoting the amount of treasure. The player can start at any row in first column. He can move only ***right, right up, right down*** from the current position. Find the row from which he need to start the hunt to collect maximum treasures. Also print the total treasure collected.

Input	Output	Start
1, 3, 3 **2**, 1, 4 0, **6**, **4**	12	(1, 0)

Input	Output	Start
1, 3, 1, 5 2, 2, 4, 1 **5**, 0, **2**, **3** 0, **6**, 1, 2	16	(2, 0)

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(Set - 2)

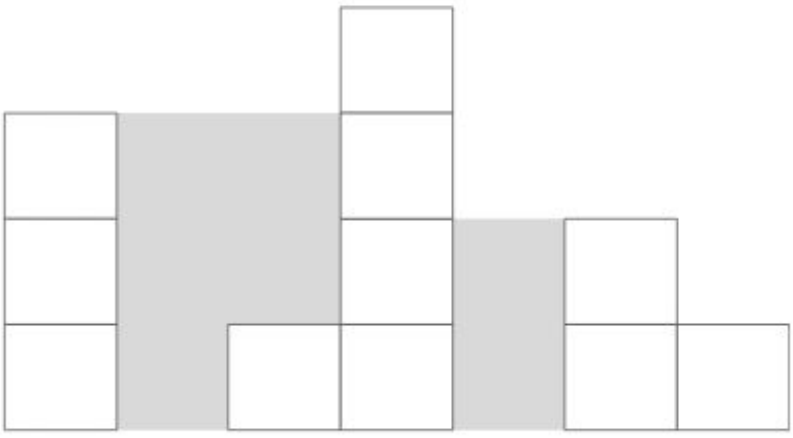
Time: 1.5 hours **Total mark: 30 (15*2)**

1. Rescue operations.

   There are N number of people stranded at a location, and have 2 boats available to rescue them. Each boat has different capacity and rescue time (round trip) as given below. You are required to find the ***minimum time*** required to rescue them all, with N as input
   Boat A: Capacity 15, Rescue time: 10 min
   Boat B: Capacity 30, Rescue time: 25 min

   Input: 30 Output: 20 mins (Boat A 2 times)
   Input: 60 Output: 25 mins (Boat B 1 Time and Boat A 2 times)

2. A rain water harvesting system is built with blocks of 1x1x1 unit dimensions. Water gets collected between blocks. Write a program which collects the number of blocks in each section (total 7 sections) and calculate the volume of water collected. The diagram below represents the rain harvesting system for an input (3,0,1,4,0,2,1) and shaded area represents water.



I/P	3	0	1	4	0	2	1		
O/P	0	3	2	0	2	0	0	=	7