Test-1 (Set-B)

1. A number is called an armstrong number, $\quad pqrs... = p^d + q^d + r^d + s^d + ...$
    where d is the total number of digits in the number.
    For a 3 digit number, a number that is equal to the sum of the cube of its digit:
      For example, $153 = 1^3 + 5^3 + 3^3$
    For a 4 digit number, a number that is equal to the sum of the cube of its digit:
      For example, $1634 = 1^4 + 6^4 + 3^4 + 4^4$
    Read an integer number, say N from the keyboard and print all the Armstrong numbers less than or equal to N. (Assume $N < 10^6$)
    [Time: 35 minutes]   [30]

#	INPUT	OUTPUT
1	0	Invalid Input
2	200	1 2 3 4 5 6 7 8 9 153
3	-300	Invalid input
4	2000	1 2 3 4 5 6 7 8 9 153 370 371 407 1634

2. Write a program that prints out a pattern based on the user input
    (Assume input is in the range [2 , 10])
    [Time: 35 minutes]   [30]

#	INPUT	OUTPUT
1	3	1 2 2 3 3 3
2	4	1 2 2 3 3 3 4 4 4 4
3	5	1 2 2 3 3 3 4 4 4 4 5 5 5 5 5
4	6	1 2 2 3 3 3 4 4 4 4 5 5 5 5 5 6 6 6 6 6 6

3. Write a program that will prompt the user to enter a sequence of positive integer values. At any time, your program should display the two largest values so far entered. When the user has entered only one value, for the second largest number your program should display "Value not yet entered". Your program should terminate when the user enters any negative number.

    [Time: 50 minutes]   [40]

#	INPUT	OUTPUT
1	Enter numbers: 1	Largest number: 1 Second largest number: Value Not yet entered
2	Enter numbers: 1 2 5 4	Largest number: 5 Second largest number: 4
3	Enter numbers: 1 2 5 4 8 2	Largest number: 8 Second largest number: 5
4	Enter numbers: 1 2 5 4 8 2 1 1 -10	<Program terminates>

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