

Problem 2

Notice 2 things - Length of string matters, string of greater length is automatically greater than string of shorter length. Assume for a certain problem instance the length of greatest string is L. - The contest is between 2 strings of same length L. - Here then we directly look at the leftmost digit of the string and start comparing from there, then we move rightwards.

Example

28 7 5 6 8 5 5 6 10 7

Value to price mapping

1 7 2 5 3 6 4 8 5 5 6 5 7 6 8 10 9 7

- Maximum length string is 5 made by candle of value 2, price 5. So all other length strings discarded. $O(1)$ operation.
 - 22222
- Start from leftmost, remove the 5 and see if other value candles fit there
 - Start from the biggest value 9 and see if it fits, if not then start decreasing.
 - 9 fits because then string will become 92222 which is valid.
- Go to next digit then in this modified string.
 - 7 fits, hence string becomes 97222.
- Repeat till the answer comes 97666.

We are looping through the string of Length L and in each loop looping through all the prices from 1-9.

So time complexity is $O(9 * L)$

Now maximum length of this string can go is when price is 1 and M is max value which is 10^5

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Problem 1

Very equivalent question which was taught in class in which pebbles were merged, using the same greedy approach we get the required answer.

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