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DAA:-

Making change Problem using greedy method

Problem Analysis:-

for given a value Amount (let), we want to make change for the given amount. and let's say that
→ we have infinite coins (supply) of {1, 2, 5, 10, 20, 50, 100, 500, 2000} valued coins + notes (some).
→ then, what's the min. no. of coins and/or notes needed to make change?

Example:-

coin[] = {5, 10, 20, 25}
Amount = 50

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⇒ Possible solutions // {coin * count}

{5 * 10} = 50 [10 coins]
{5 * 8 + 10 * 1} = 50 [9 coins]
{10 * 5} = 50 [5 coins]
{25 * 2} = 50 [2 coins], etc.

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Best Solution :- {25 * 2} ⇒ 2 coins

Worst (case) solution :- {5 * 10} ⇒ 10 coins or something else.

we need best solution ie min no. of coins req for change of Amount.

Design of Algorithm:-

1. Sort the array of coins in decreasing order [// higher amount first //]
2. Take coin[i] as much as we can
3. Increment count.
4. If solution found → breaks it
5. otherwise, do step-2 for next coin ie coin[i+1].
6. print the output.