122 . Class Problem: P and NP Problem

AIM: To solve the Class problem : p and np probnlem by using Tracibility & approximatiom algorithm

PROGRAM:

```
def subset_sum_approx(nums, target):
    """ Approximation algorithm for Subset Sum using a greedy approach """
    nums.sort(reverse=True)  # Sort in descending order
    subset = []
    current_sum = 0
    for num in nums:
        if current_sum + num <= target:
            subset.append(num)
            current_sum += num
    return subset
nums = [5, 10, 12, 18, 20]
target = 30
print("Subset Sum Problem - Approximation Algorithm:")
print("Set of numbers:", nums)
print("Target sum:", target)
subset = subset_sum_approx(nums, target)
print("Subset that sums up to", target, ":", subset)
print("Sum of subset:", sum(subset))
```

OUTPUT:

```
Subset Sum Problem - Approximation Algorithm:
Set of numbers: [5, 10, 12, 18, 20]
Target sum: 30
Subset that sums up to 30 : [20, 10]
Sum of subset: 30
```

TIME COMPLEXITY: O(N log N)