EXPERIMENT NO. :- 04

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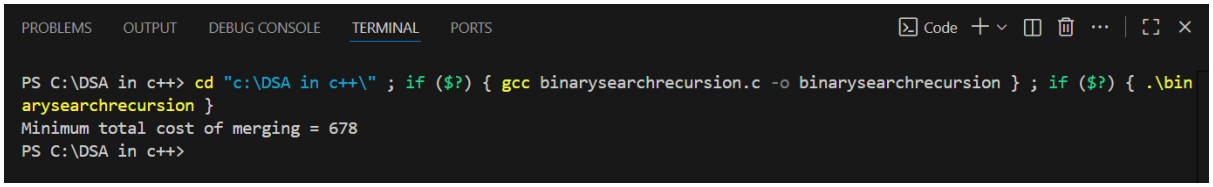
Batch no.:- I2

```
#include <stdio.h>
#include <limits.h>

// Function to find index of smallest element in array
int findMinIndex(int arr[], int n, int skip) {
    int min = INT_MAX, index = -1;
    for (int i = 0; i < n; i++) {
        if (arr[i] != -1 && arr[i] < min && i != skip) {
            min = arr[i];
            index = i;
        }
    }
    return index;
}

int optimalMerge(int files[], int n) {
    int totalCost = 0;

    for (int step = 1; step < n; step++) {
        // Find two smallest files
        int first = findMinIndex(files, n, -1);
        int second = findMinIndex(files, n, first);

        int cost = files[first] + files[second];
        totalCost += cost;

        // Merge them → replace one with new file size, mark other as used
        files[first] = cost;
        files[second] = -1;
    }
    return totalCost;
}

int main() {
    int files[] = {20, 30, 10, 5};
    int n = sizeof(files) / sizeof(files[0]);

    int result = optimalMerge(files, n);
    printf("Minimum total cost of merging = %d\n", result);

    return 0;
}
```


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
PS C:\DSA in c++> cd "c:\DSA in c++\" ; if ($?) { gcc binarysearchrecursion.c -o binarysearchrecursion } ; if ($?) { .\bin
arysearchrecursion }
Minimum total cost of merging = 678
PS C:\DSA in c++>