Assignment Problem

```
#include <stdio.h>
#include <limits.h>
#define N 3

int min(int a, int b) {
    return a < b ? a : b;
}

int assignmentProblem(int cost[N][N], int mask, int row, int dp[]) {
    if (row >= N) return 0;
    if (dp[mask] != -1) return dp[mask];

    int ans = INT_MAX;
    for (int j = 0; j < N; j++) {
        if (!(mask & (1 << j)))
            ans = min(ans, cost[row][j] + assignmentProblem(cost, mask | (1 << j), row + 1, dp));
    }
    dp[mask] = ans;
    return ans;
}
int main() {
    int cost[N][N] = {{9, 2, 7}, {6, 4, 3}, {5, 8, 1}};
    int dp[1 << N];
    for (int i = 0; i < (1 << N); i++)
        dp[i] = -1;
    printf("Minimum assignment cost = %d\n", assignmentProblem(cost, 0, 0, dp));
    return 0;
}
```

OUTPUT:

```
Minimum assignment cost = 9

Process returned 0 (0x0)   execution time : 0.000 s
Press any key to continue.
```