6.Travelling sales person problem

```c
#include <stdio.h>

#define MAX 10
#define INF 9999

int n, cost[MAX][MAX], visited[MAX], min_cost = INF;

void tsp(int city, int count, int current_cost) {
    if (count == n && cost[city][0]) {
        if (current_cost + cost[city][0] < min_cost)
            min_cost = current_cost + cost[city][0];
        return;
    }

    for (int i = 0; i < n; i++) {
        if (!visited[i] && cost[city][i]) {
            visited[i] = 1;
            tsp(i, count + 1, current_cost + cost[city][i]);
            visited[i] = 0;
        }
    }
}

int main() {
    printf("Enter number of cities: ");
    scanf("%d", &n);

    printf("Enter cost matrix:\n");
    for (int i = 0; i < n; i++)
        for (int j = 0; j < n; j++)
```

```c
        scanf("%d", &cost[i][j]);

    for (int i = 0; i < n; i++)
        visited[i] = 0;

    visited[0] = 1;
    tsp(0, 1, 0);

    printf("Minimum cost: %d\n", min_cost);

    return 0;
}
```

```
Output

Enter number of cities: 2
Enter cost matrix:
3
69
96
89
Minimum cost: 165


=== Code Execution Successful ===
```