**TRAVELLING SALES MAN PROBLEM**

#include <stdio.h>

int matrix[25][25], visited\_cities[10], limit, cost = 0;

int tsp(int c)

{

int count, nearest\_city = 999;

int minimum = 999, temp;

for(count = 0; count < limit; count++)

{

if((matrix[c][count] != 0) && (visited\_cities[count] == 0))

{

if(matrix[c][count] < minimum)

{

minimum = matrix[count][0] + matrix[c][count];

}

temp = matrix[c][count];

nearest\_city = count;

}

}

if(minimum != 999)

{

cost = cost + temp;

}

return nearest\_city;

}

void minimum\_cost(int city)

{

int nearest\_city;

visited\_cities[city] = 1;

printf("%d ", city + 1);

nearest\_city = tsp(city);

if(nearest\_city == 999)

{

nearest\_city = 0;

printf("%d", nearest\_city + 1);

cost = cost + matrix[city][nearest\_city];

return;

}

minimum\_cost(nearest\_city);

}

int main()

{

int i, j;

printf("Enter Total Number of Cities:\t");

scanf("%d", &limit);

printf("\nEnter Cost Matrix\n");

for(i = 0; i < limit; i++)

{

printf("\nEnter %d Elements in Row[%d]\n", limit, i + 1);

for(j = 0; j < limit; j++)

{

scanf("%d", &matrix[i][j]);

}

visited\_cities[i] = 0;

}

printf("\nEntered Cost Matrix\n");

for(i = 0; i < limit; i++)

{

printf("\n");

for(j = 0; j < limit; j++)

{

printf("%d ", matrix[i][j]);

}

}

printf("\n\nPath:\t");

minimum\_cost(0);

printf("\n\nMinimum Cost: \t");

printf("%d\n", cost);

return 0;

}

