Jared Bumgardner

Data Structures & Algorithms 2

Project 3

Functional Decomposition

User-defined data structures used as parameters in the functions

n/a

Files and Functions in the Program

/\*This file controls the execution of the project\*/

main.c

/\*This function controls the program execution\*/

/\*It returns an integer indicating a successful or failed completion\*/

int main();

/\*This file contains input data\*/

distances.txt

/\*This file contains the implementation for a Brute Force solution to the Traveling Salesman Problem\*/

bruteForceTSP.c

/\*This function calculates the factorial of an integer n\*/

int factorial(int n);

/\*This function evaluates the cost for a given tour\*/

double evaluateCost(int \*tour, int nCities, double cGraph[INPUTFILECITIES

[INPUTFILECITIES])

/\*This function drives the solving of the TSP by brute force\*/

int bruteForceSolve(int nCities, double cGraph[INPUTFILECITIES][INPUTFILECITIES])

/\*This file contains prototypes for the brute force solution to the TSP\*/

bruteForceTSP.h

n/a

/\*This file would contain implementations for the complete graph adt\*/

completeGraph.c

n/a

/\*This file would contain prototypes for the complete graph adt\*/

completeGraph.h

n/a

/\*This file would contain implementations for the genetic algorithm solution to the TSP\*/

geneticTSP.c

/\*This function would solve the TSP by genetic algorithm\*/

void geneticSolve();

/\*This file would contain prototypes for the genetic algorithm solution to the TSP\*/

geneticTSP.h

n/a

/\*This file contains functions and values necessary throughout program\*/

globals.c

/\*This function would produce output & potentially run required tests\*/

void produceOutput();

/\*This file contains prototypes for program necessary functions\*/

globals.h

n/a