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COP4534, Coffey

# Project 3 - User's Manual

## Setup and Compilation

1. Download and unzip the submission from eLearning on a Linux box in the multi-platform lab.

2. The submission includes:

- distances.txt
- main.cpp
- Makefile
- permutation.cpp
- permutation.hpp
- Results.csv
- tourManager.cpp
- tourManager.hpp
- uml diagram.png
- user's manual

3. *Environment*: This program has been tested in the multi-platform lab and will run there.

4. *Compiling*: This program includes a Makefile. At the command line in Linux, type **make**. The program produces an executable entitled **p2.**

5. *Running the program*: Issue the command **./p2** No command line arguments are required or checked.

> User input: the user will be prompted individual variables **Number of Cities**, **Number of Tours**, **Number of Generation**, and **Percent Mutation** to initialize the simulation. Each variable prompt will require only 1 number.

6: *Output*: All output goes to the console. Output will be similar to this:

```
Enter the number of cities to run: 11

Enter the number of tours in a given generation: 100

Enter the number of generations to run: 2000

Enter the percentage of mutation in a generation: .2
```

```
11 CITIES | 100 TOURS | 2000 GENS | 0.2 %MUTATE

| Brute Force | Best Tour:
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  Optimal Cost: 424.88

  Elapsed Time: 3.00 seconds

| Genetic Alg | Best Tours:
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  Elite Cost 1: 480.45
  Elite Cost 2: 475.68

  Elapsed Time: 0.46 seconds

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Percent Optimal 1 = 112.28
Percent Optimal 2 = 111.28
```