```
C:\Users\adity\anaconda3\python.exe C:\Users\adity\tsp\Assingment3_CVRPTW\src\abc.py
Set parameter Username
Academic license - for non-commercial use only - expires 2025-05-14
Gurobi Optimizer version 11.0.1 build v11.0.1rc0 (win64 - Windows 11.0 (22631.2))

CPU model: 11th Gen Intel(R) Core(TM) i5-1135G7 @ 2.40GHz, instruction set [SSE2|AVX|AVX2|AVX512]
Thread count: 4 physical cores, 8 logical processors, using up to 8 threads

Optimize a model with 2916311 rows, 1457870 columns and 10294029 nonzeros
Model fingerprint: 0x57fdad9f
Variable types: 5263 continuous, 1452607 integer (1452607 binary)
Coefficient statistics:
  Matrix range     [1e+00, 1e+05]
  Objective range  [6e+02, 5e+06]
  Bounds range     [1e+00, 1e+00]
  RHS range        [1e+00, 1e+05]
Found heuristic solution: objective 2.105150e+08
Presolve removed 10526 rows and 0 columns (presolve time = 5s) ...
Presolve removed 10526 rows and 0 columns (presolve time = 11s) ...
Presolve removed 10526 rows and 0 columns (presolve time = 15s) ...
Presolve removed 10526 rows and 0 columns (presolve time = 20s) ...
Presolve removed 1463114 rows and 19 columns (presolve time = 25s) ...
Presolve removed 1463114 rows and 19 columns
Presolve time: 25.02s
Presolved: 1453197 rows, 1457851 columns, 7378308 nonzeros
Variable types: 5263 continuous, 1452588 integer (1452588 binary)
Deterministic concurrent LP optimizer: primal simplex
```

```
, dual simplex, and barrier
Showing barrier log only...

Root barrier log...

Ordering time: 0.57s

Barrier statistics:
 Dense cols : 1385
 AA' NZ     : 1.640e+06
 Factor NZ  : 3.848e+06 (roughly 350 MB of memory)
 Factor Ops : 2.491e+09 (less than 1 second per iteration)
 Threads    : 2

                  Objective                Residual
Iter       Primal          Dual         Primal    Dual     Compl     Time
   0   5.46766089e+12 -3.13900849e+09  7.77e+05 0.00e+00  1.26e+07    42s

Barrier performed 0 iterations in 41.71 seconds (35.15 work units)
Barrier solve interrupted - model solved by another algorithm

Concurrent spin time: 0.84s (can be avoided by choosing Method=3)

Solved with dual simplex

Root simplex log...

Iteration    Objective       Primal Inf.    Dual Inf.      Time
     684    1.8621966e+07   0.000000e+00   0.000000e+00     42s

Use crossover to convert LP symmetric solution to basic solution...

```

```
Root crossover log...

      89 DPushes remaining with DInf 0.0000000e+00
                 43s
       0 DPushes remaining with DInf 0.0000000e+00
                 43s

     914 PPushes remaining with PInf 0.0000000e+00
                 43s
       0 PPushes remaining with PInf 0.0000000e+00
                 43s

  Push phase complete: Pinf 0.0000000e+00, Dinf 2.
  5288431e-11     43s


Root simplex log...

Iteration    Objective       Primal Inf.    Dual Inf
  .       Time
    1634    1.8621966e+07   0.000000e+00   0.000000e+
  00     44s

Root relaxation: objective 1.862197e+07, 1634
  iterations, 11.03 seconds (4.93 work units)

    Nodes    |    Current Node    |     Objective
  Bounds      |     Work
 Expl Unexpl |  Obj  Depth IntInf | Incumbent
  BestBd   Gap | It/Node Time

H    0     0                    1.862197e+07 330200.
  000  98.2%     -   44s
     0     0          -    0      1.8622e+07 1.8622e+
  07  0.00%     -   46s

Explored 1 nodes (2150 simplex iterations) in 46.77
  seconds (37.83 work units)
Thread count was 8 (of 8 available processors)

Solution count 2: 1.8622e+07 2.10515e+08
```

```
87
88 Optimal solution found (tolerance 1.00e-04)
89 Best objective 1.862196644600e+07, best bound 1.
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