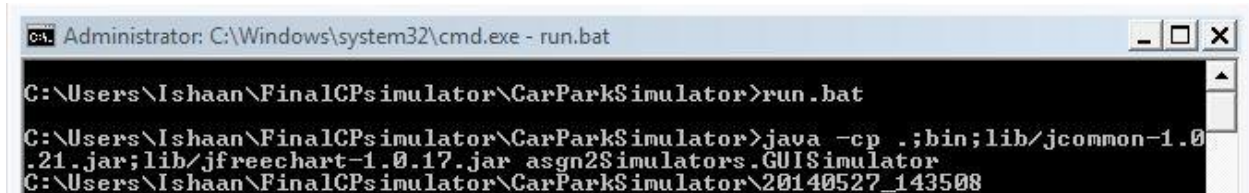


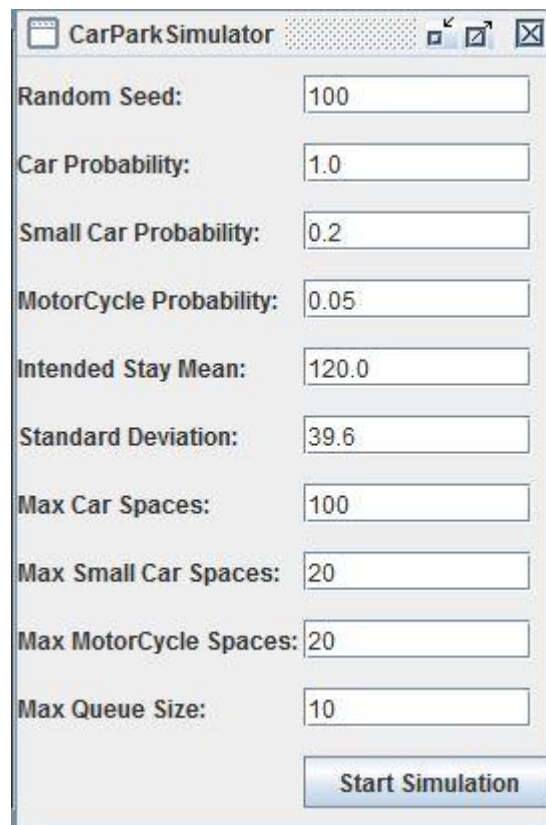
GUI Tests

1. User runs the simulation with default values taken from constants class when no command line parameters are provided.



```
Administrator: C:\Windows\system32\cmd.exe - run.bat
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator>run.bat
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator>java -cp .;bin;lib/jcommon-1.0
.21.jar;lib/jfreechart-1.0.17.jar asgn2Simulators.GUIsimulator
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator\20140527_143508
```

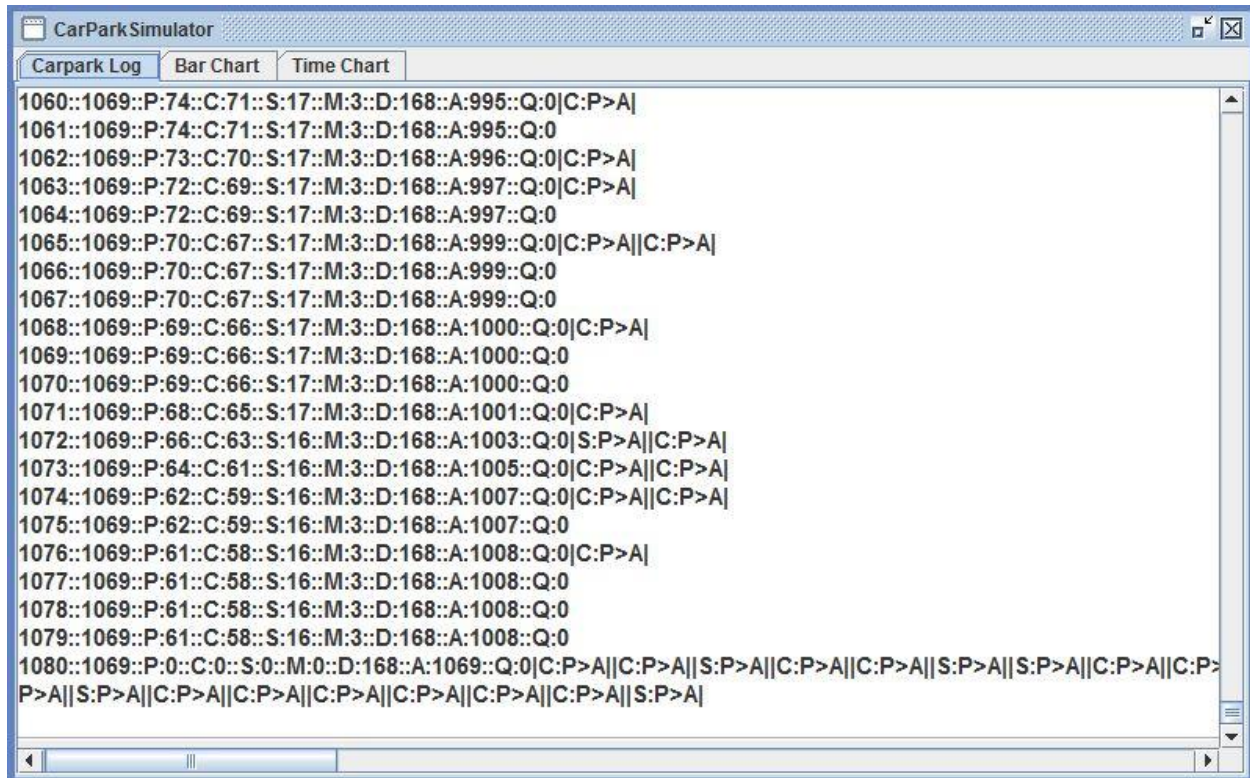
user executes "run.bat" file and executes the program with default constant values



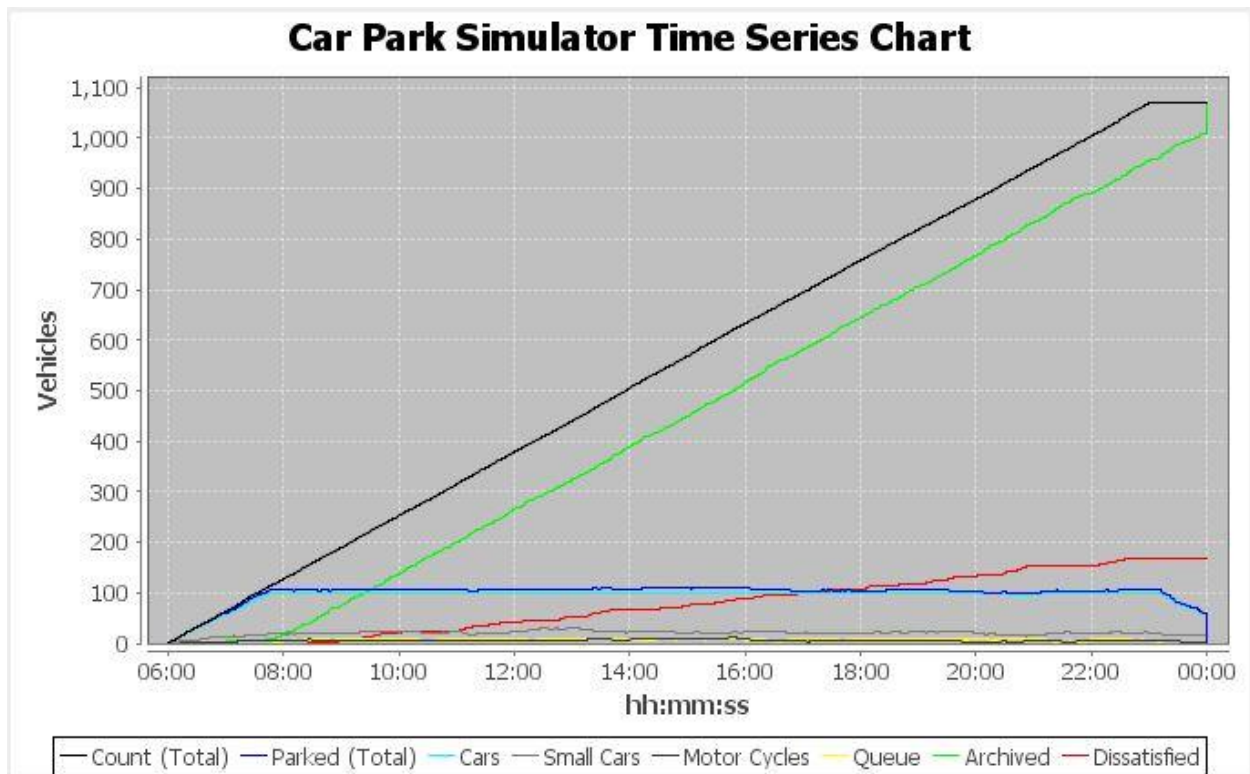
Parameter	Value
Random Seed:	100
Car Probability:	1.0
Small Car Probability:	0.2
MotorCycle Probability:	0.05
Intended Stay Mean:	120.0
Standard Deviation:	39.6
Max Car Spaces:	100
Max Small Car Spaces:	20
Max MotorCycle Spaces:	20
Max Queue Size:	10

Start Simulation

main page loaded with default values

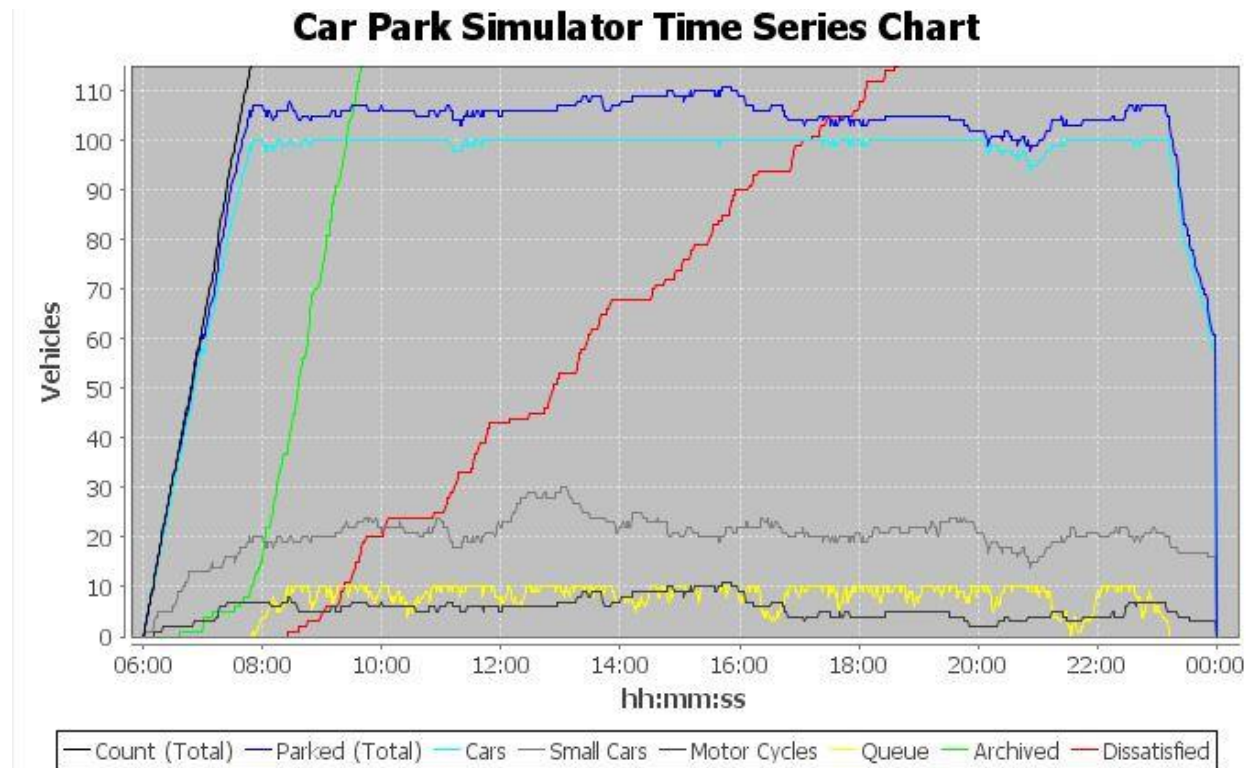


Carpark Log with default values



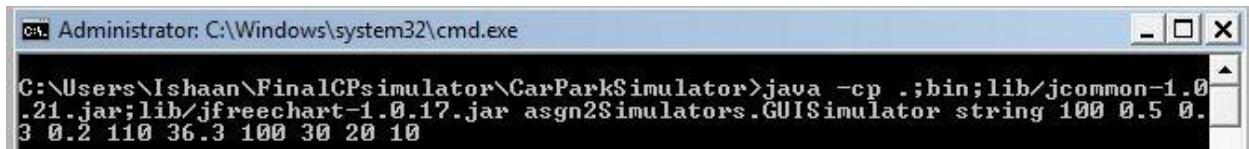
Time chart plotted with default values

The system displays an input panel with default values for the simulation. User clicks “Start Simulation” and is presented with three tabs namely: Carpark Log, Bar Chart and Time Chart.



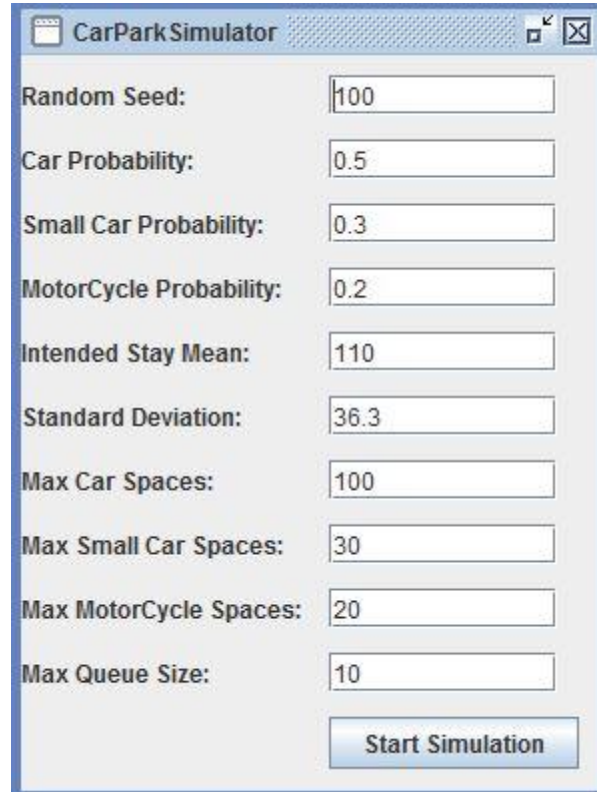
Time chart with default values displaying the trend

2. Users enters command line parameters and executes the simulation program.



```
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator>java -cp .;bin;lib/jcommon-1.0.21.jar;lib/jfreechart-1.0.17.jar asgn2Simulators.GUISimulator string 100 0.5 0.3 0.2 110 36.3 100 30 20 10
```

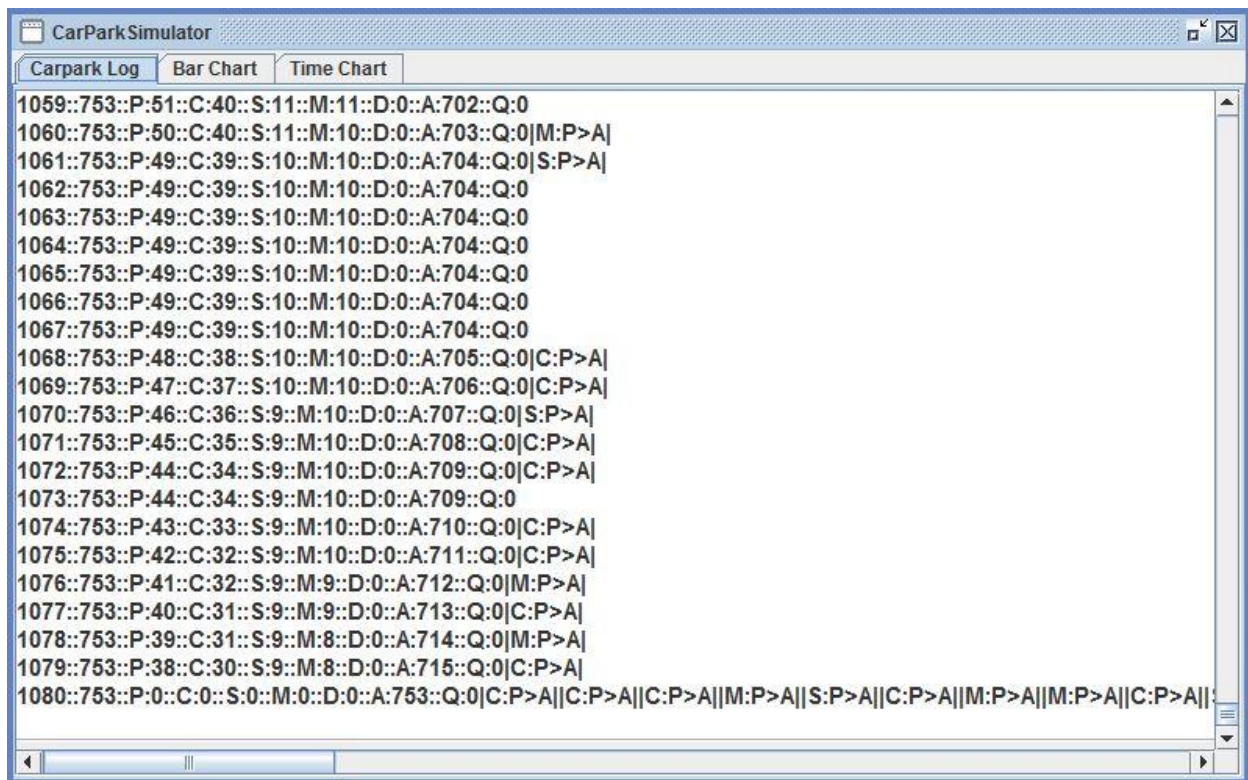
command line parameters are parsed into the simulator by the user



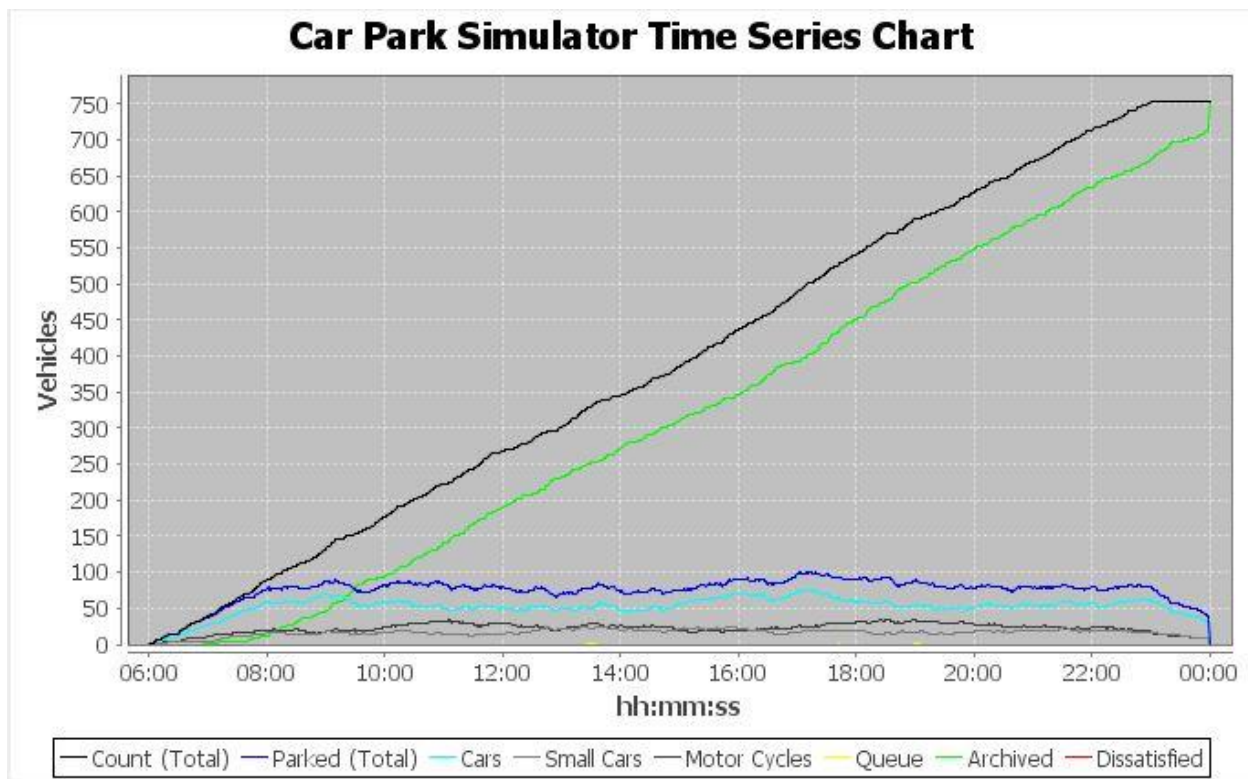
Random Seed:	100
Car Probability:	0.5
Small Car Probability:	0.3
MotorCycle Probability:	0.2
Intended Stay Mean:	110
Standard Deviation:	36.3
Max Car Spaces:	100
Max Small Car Spaces:	30
Max MotorCycle Spaces:	20
Max Queue Size:	10

Start Simulation

The values entered can be reflected evidently

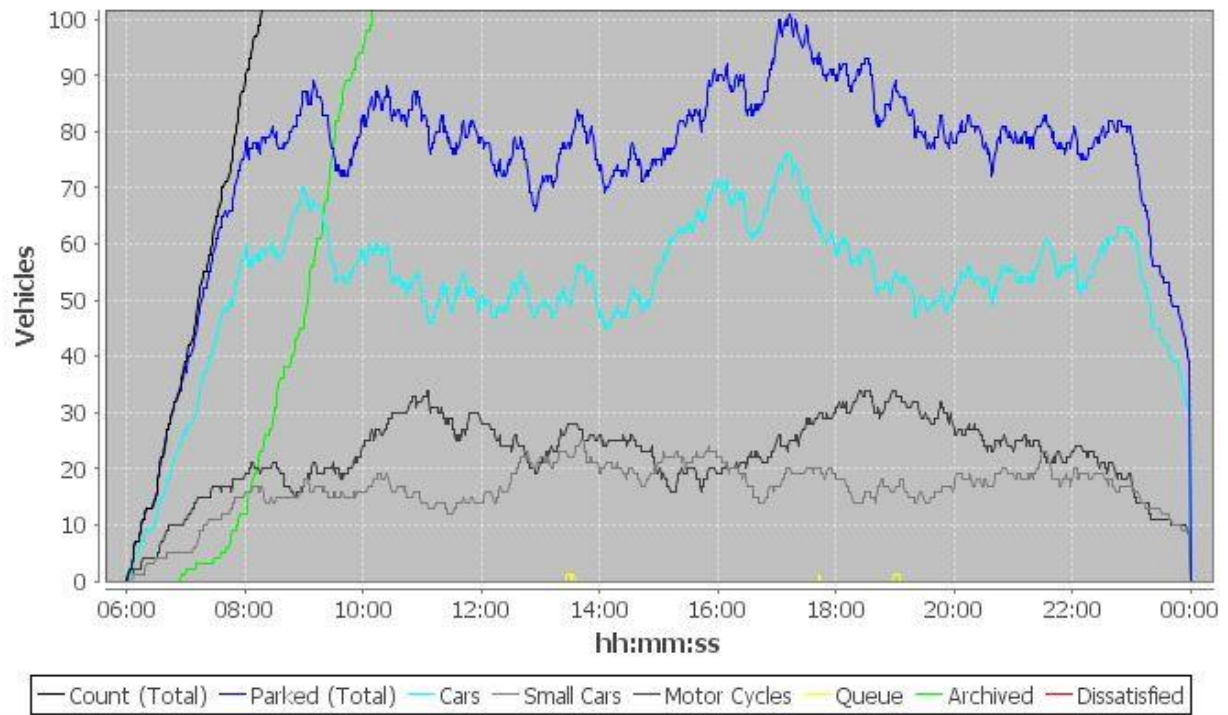


A different log is generated for the values entered



Time chart for new values indicating a different graph

Car Park Simulator Time Series Chart

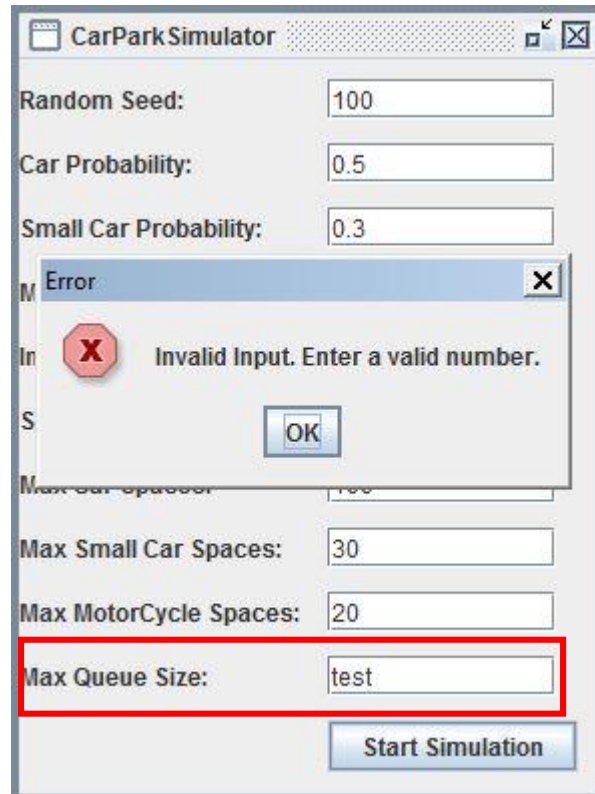


Time chart with modified values displaying the trend

3. User enters a string instead of int or double and is denied from running the simulation.

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator>java -cp .;bin;lib/jcommon-1.0
.21.jar;lib/jfreechart-1.0.12.jar asgn2Simulators.GUIsimulator string 100 0.5 0.
3 0.2 110 36.3 100 30 20 test
```

a word "test" is inserted as a parameter for maxQueueSize field

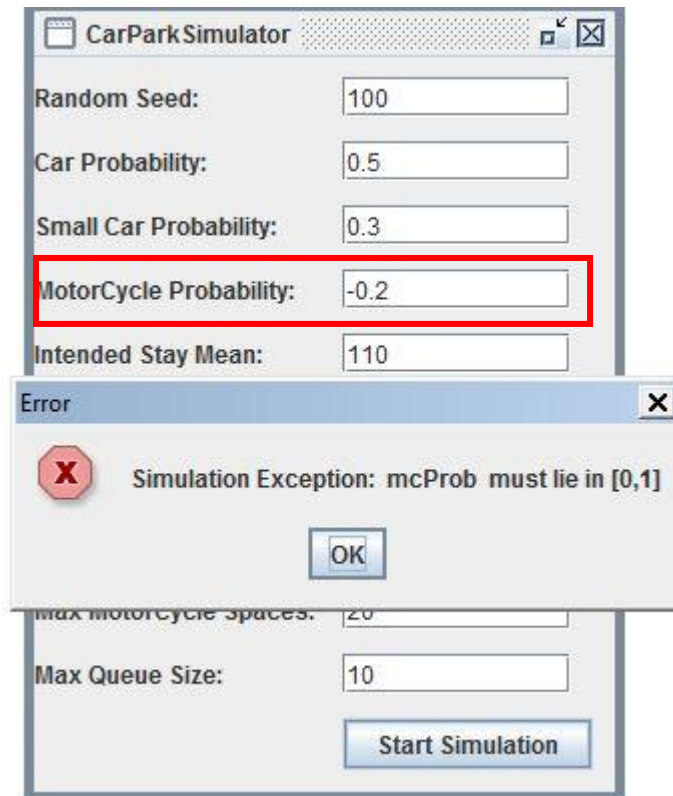


the word "test" can be seen within the gui. However, when the user hits the button he receives the error message

4. User enters a value less than zero for probabilities and is informed of the error.

```
Administrator: C:\Windows\system32\cmd.exe - java -cp .;bin;lib/jcommon-1.0.21.jar;lib/jfreechart-1.0.17.jar...
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator>java -cp .;bin;lib/jcommon-1.0.21.jar;lib/jfreechart-1.0.17.jar asgn2Simulators.GUI Simulator string 100 0.5 0.3 -0.2 110 36.3 100 30 20 10
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator\20140527_150944
```

User enters -0.2 instead of 0.2

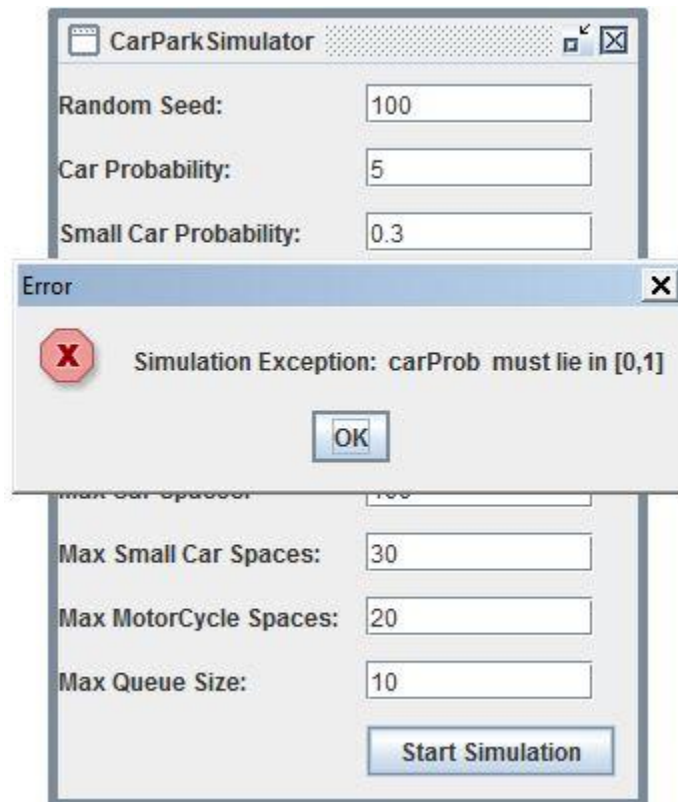


The program throws a SimulationException error when the user runs the simulation

5. User enters a value greater than one for probabilities and is informed of the error.

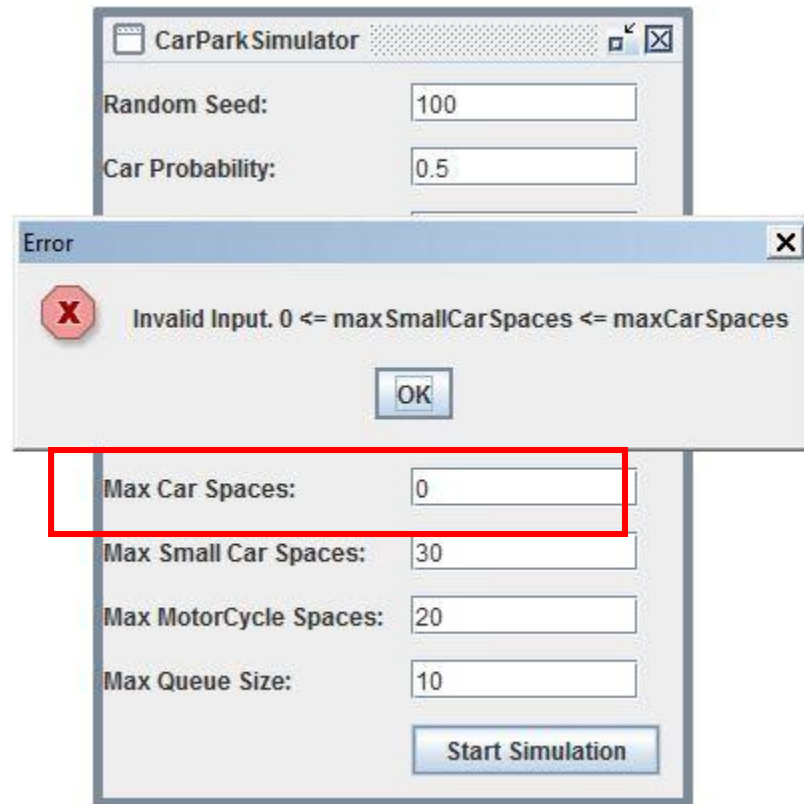
```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\Ishaan\FinalCPsimulator\CarParkSimulator>java -cp .;bin;jcommon-1.0.21.jar;lib/jfreechart-1.0.17.jar asgn2Simulators.GUISimulator string 100 5 0.3
0.2 110 36.3 100 30 20 10
```

User enters 5 instead of a value between 0 and 1 for car probability



User gets a SimulationException message for entering a value greater than 1

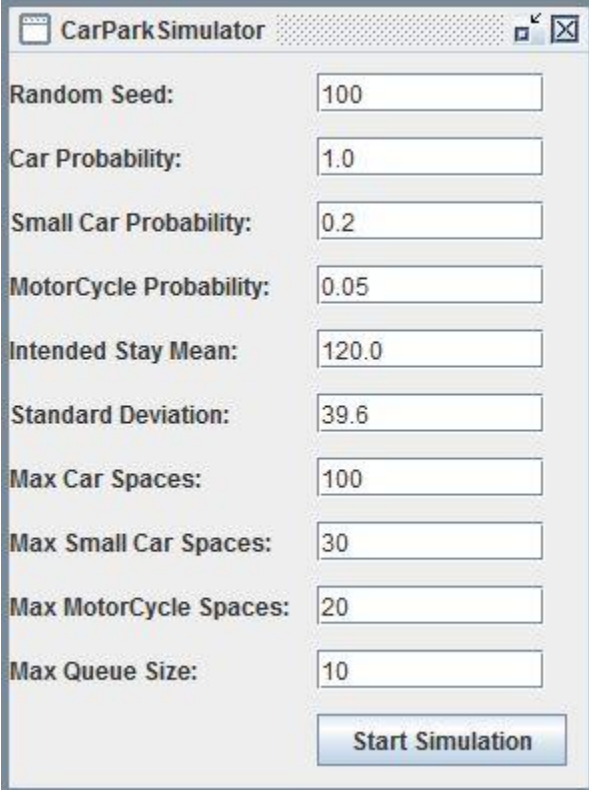
6. User tries to execute the program with empty text fields and fails to launch the program.



User enters the car slots as zero. The program fails as car spaces cannot be less than or equal to zero

Log Tests

1. Default.log

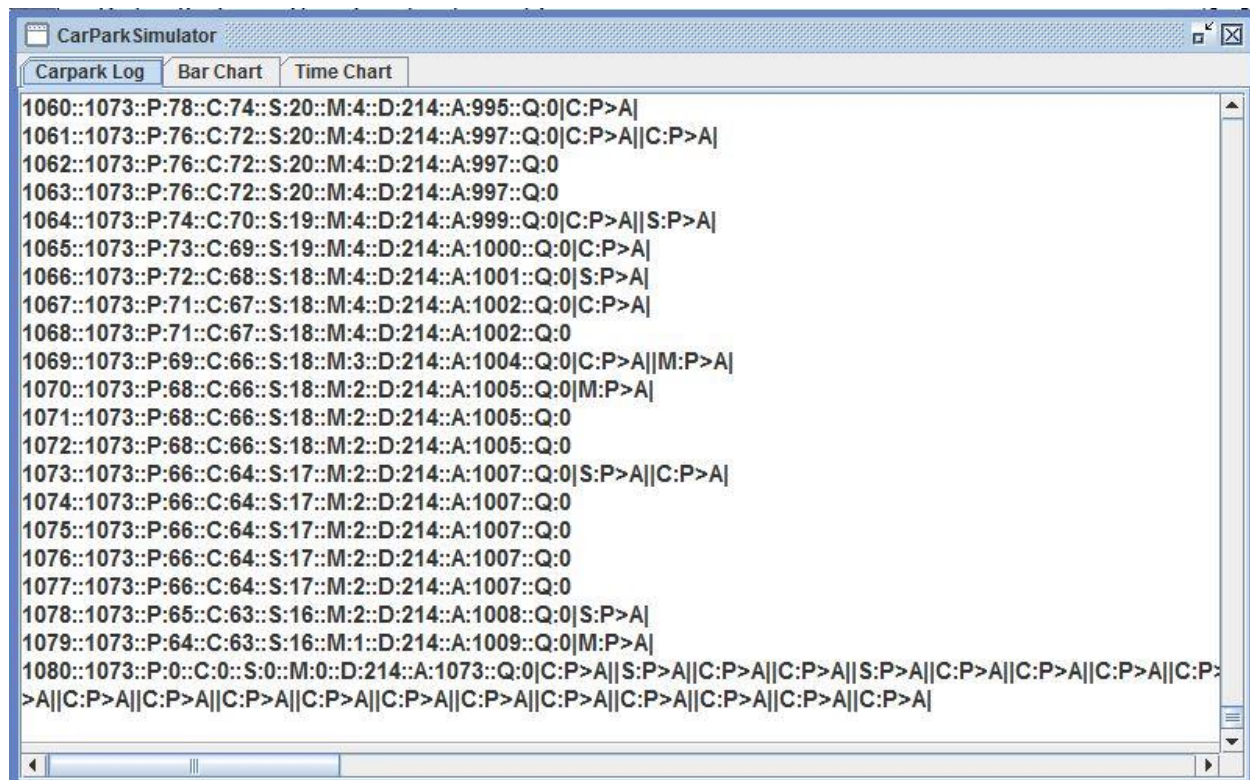


A screenshot of a software window titled "CarPark Simulator". The window contains a list of configuration parameters, each with a text label on the left and a corresponding input field on the right. The parameters and their values are: Random Seed (100), Car Probability (1.0), Small Car Probability (0.2), MotorCycle Probability (0.05), Intended Stay Mean (120.0), Standard Deviation (39.6), Max Car Spaces (100), Max Small Car Spaces (30), Max MotorCycle Spaces (20), and Max Queue Size (10). At the bottom right of the window is a button labeled "Start Simulation".

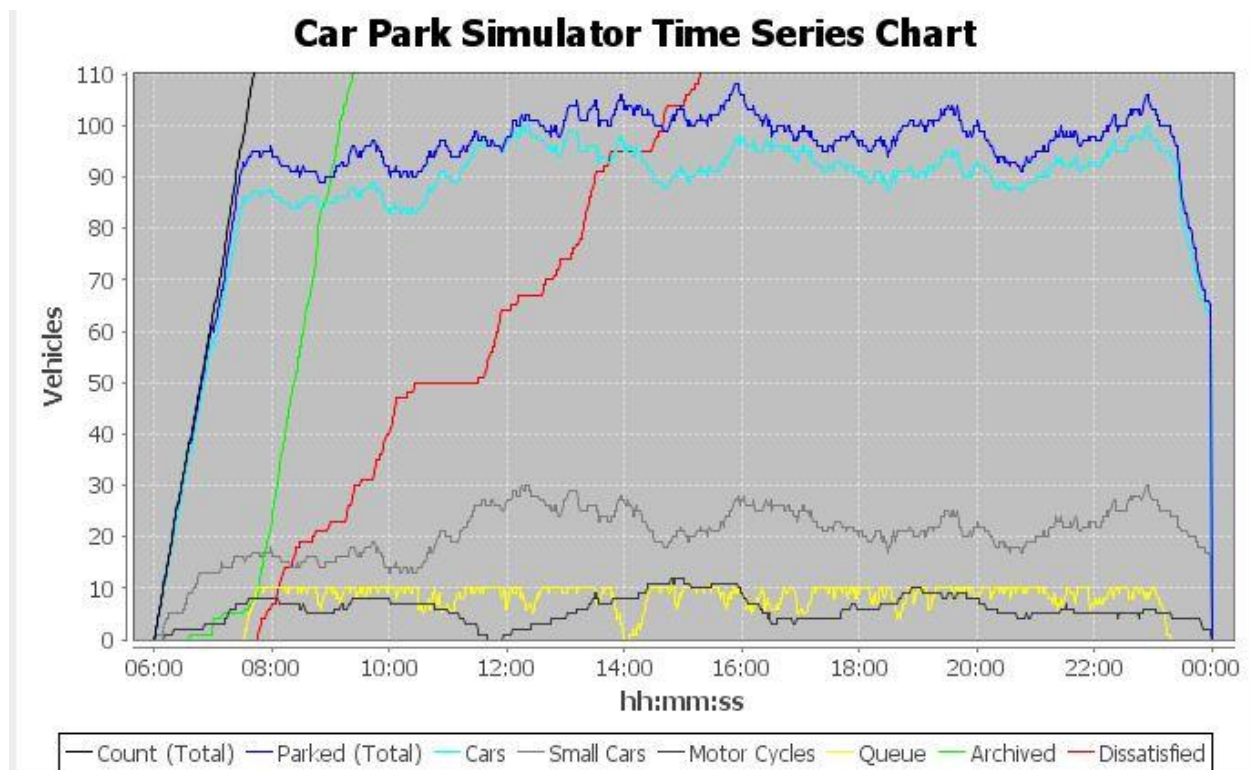
Random Seed:	100
Car Probability:	1.0
Small Car Probability:	0.2
MotorCycle Probability:	0.05
Intended Stay Mean:	120.0
Standard Deviation:	39.6
Max Car Spaces:	100
Max Small Car Spaces:	30
Max MotorCycle Spaces:	20
Max Queue Size:	10

Start Simulation

default.log values

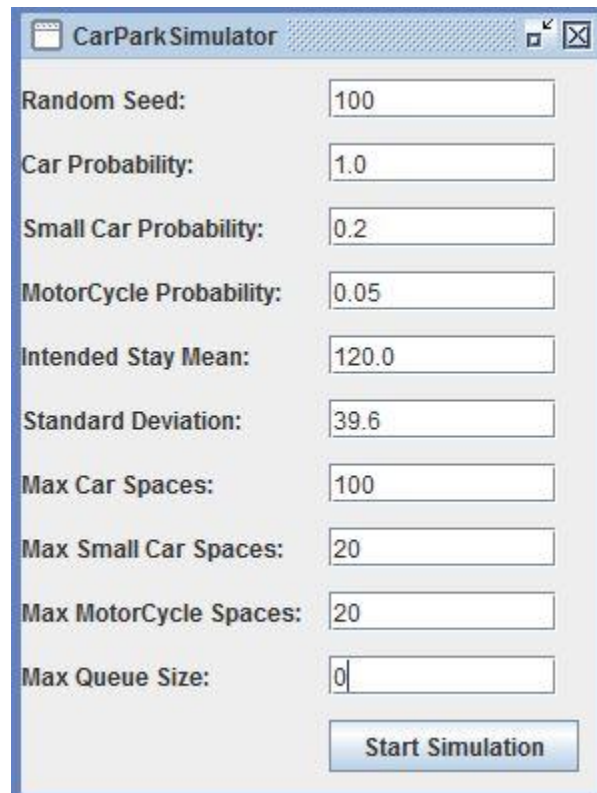


Output of default.log according to the values provided



Time chart of default.log

2. Noqueue.log



CarPark Simulator

Random Seed: 100

Car Probability: 1.0

Small Car Probability: 0.2

MotorCycle Probability: 0.05

Intended Stay Mean: 120.0

Standard Deviation: 39.6

Max Car Spaces: 100

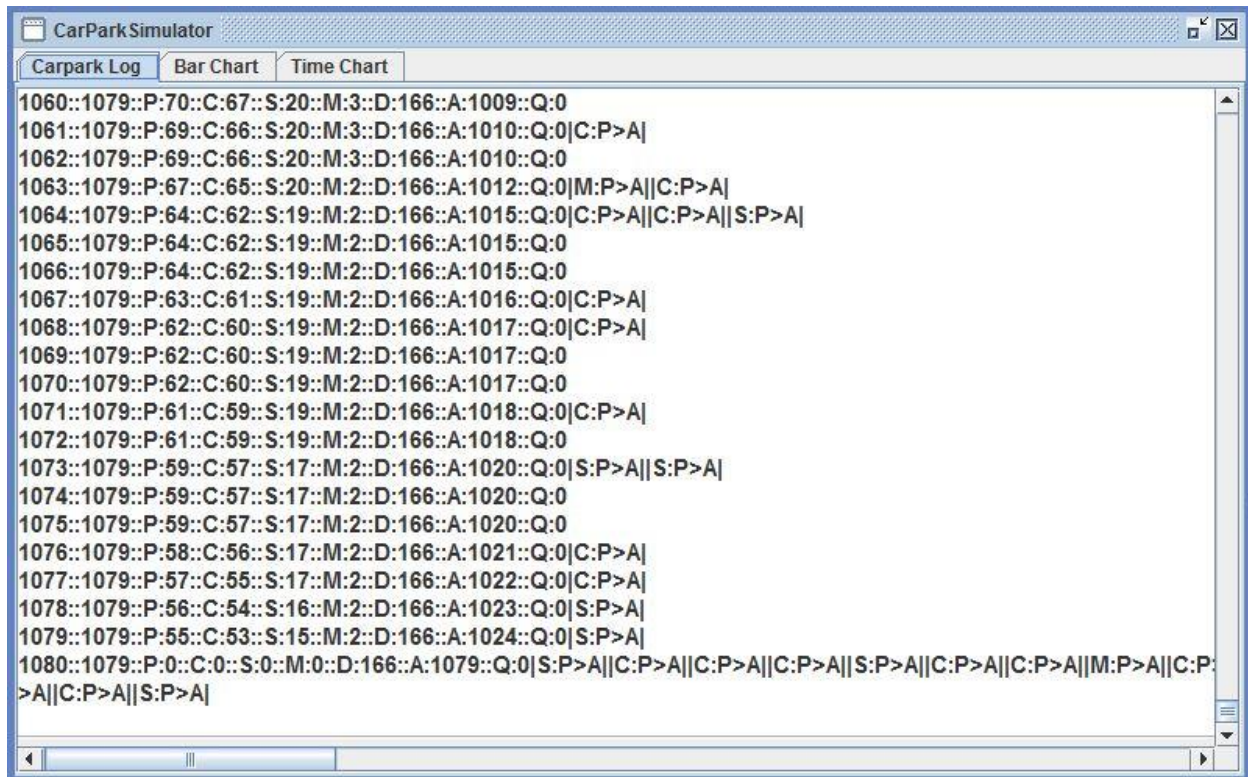
Max Small Car Spaces: 20

Max MotorCycle Spaces: 20

Max Queue Size: 0

Start Simulation

MaxQueueSize is zero

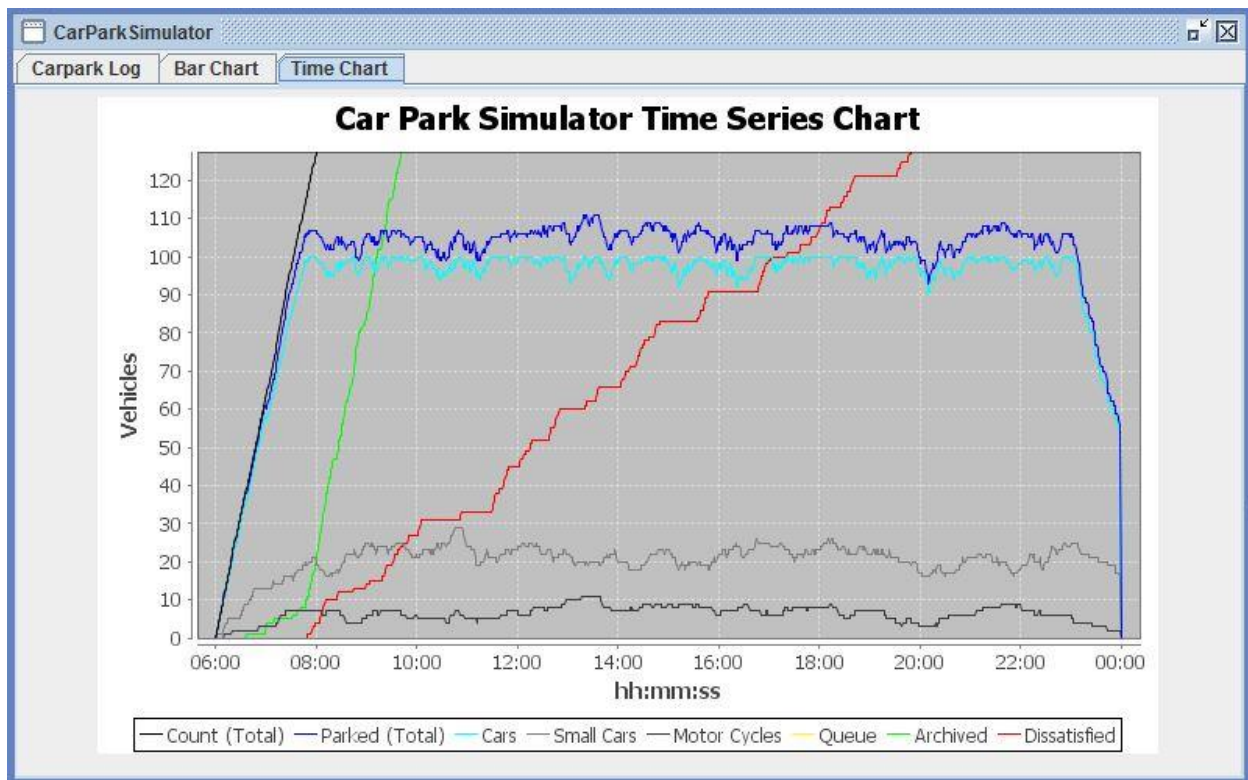


CarPark Simulator

Carpark Log Bar Chart Time Chart

1060::1079::P:70::C:67::S:20::M:3::D:166::A:1009::Q:0
1061::1079::P:69::C:66::S:20::M:3::D:166::A:1010::Q:0|C:P>A|
1062::1079::P:69::C:66::S:20::M:3::D:166::A:1010::Q:0
1063::1079::P:67::C:65::S:20::M:2::D:166::A:1012::Q:0|M:P>A||C:P>A|
1064::1079::P:64::C:62::S:19::M:2::D:166::A:1015::Q:0|C:P>A||C:P>A||S:P>A|
1065::1079::P:64::C:62::S:19::M:2::D:166::A:1015::Q:0
1066::1079::P:64::C:62::S:19::M:2::D:166::A:1015::Q:0
1067::1079::P:63::C:61::S:19::M:2::D:166::A:1016::Q:0|C:P>A|
1068::1079::P:62::C:60::S:19::M:2::D:166::A:1017::Q:0|C:P>A|
1069::1079::P:62::C:60::S:19::M:2::D:166::A:1017::Q:0
1070::1079::P:62::C:60::S:19::M:2::D:166::A:1017::Q:0
1071::1079::P:61::C:59::S:19::M:2::D:166::A:1018::Q:0|C:P>A|
1072::1079::P:61::C:59::S:19::M:2::D:166::A:1018::Q:0
1073::1079::P:59::C:57::S:17::M:2::D:166::A:1020::Q:0|S:P>A||S:P>A|
1074::1079::P:59::C:57::S:17::M:2::D:166::A:1020::Q:0
1075::1079::P:59::C:57::S:17::M:2::D:166::A:1020::Q:0
1076::1079::P:58::C:56::S:17::M:2::D:166::A:1021::Q:0|C:P>A|
1077::1079::P:57::C:55::S:17::M:2::D:166::A:1022::Q:0|C:P>A|
1078::1079::P:56::C:54::S:16::M:2::D:166::A:1023::Q:0|S:P>A|
1079::1079::P:55::C:53::S:15::M:2::D:166::A:1024::Q:0|S:P>A|
1080::1079::P:0::C:0::S:0::M:0::D:166::A:1079::Q:0|S:P>A||C:P>A||C:P>A||C:P>A||S:P>A||C:P>A||C:P>A||M:P>A||C:P>A||C:P>A||S:P>A|

output of noqueue.log



Time chart of noqueue.log

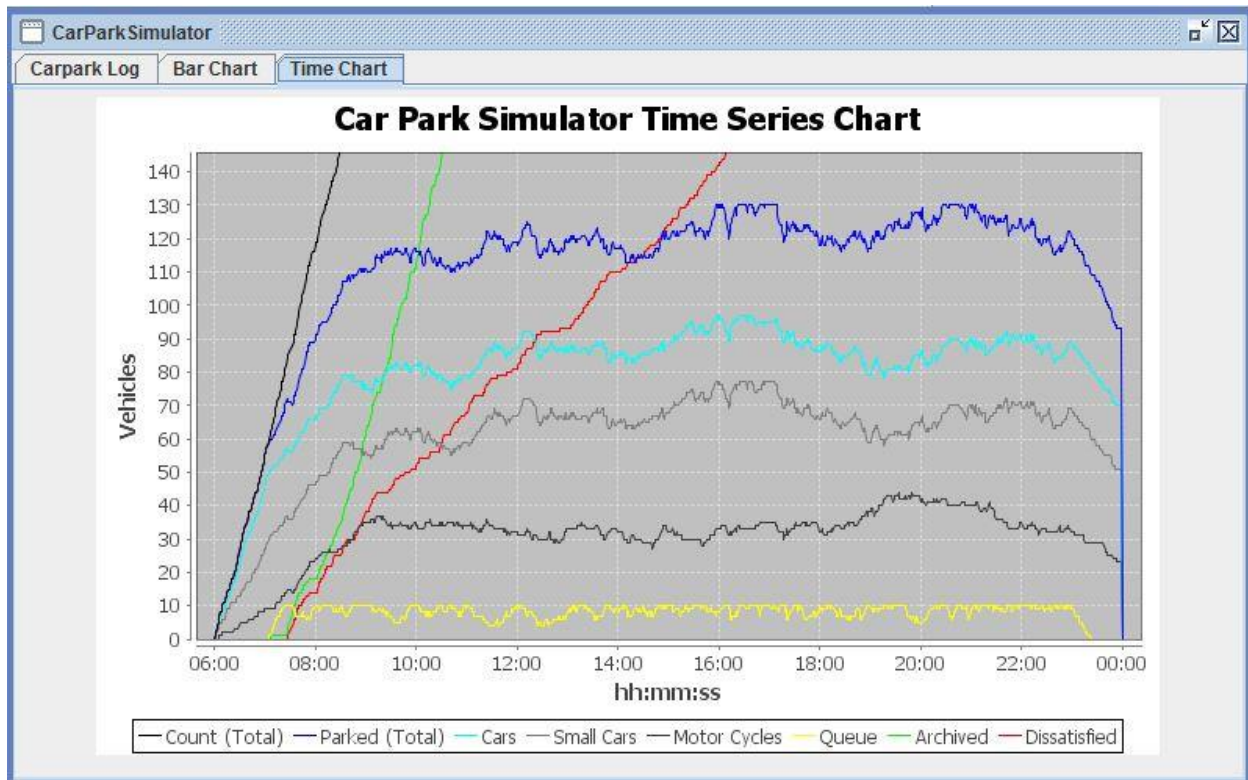
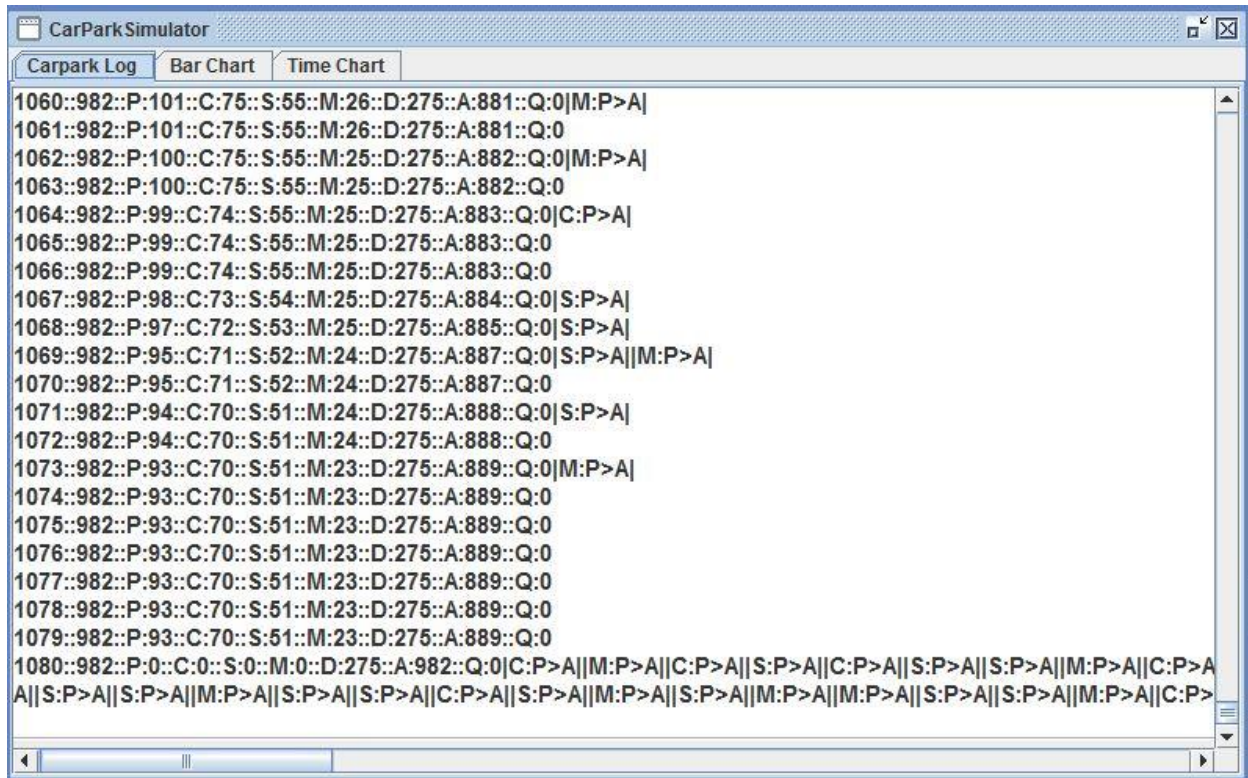
3. smallCars.log

The figure is a screenshot of the 'CarPark Simulator' application window, showing the configuration settings for the 'smallCars.log' simulation. The window contains several input fields and a 'Start Simulation' button. The settings are as follows:

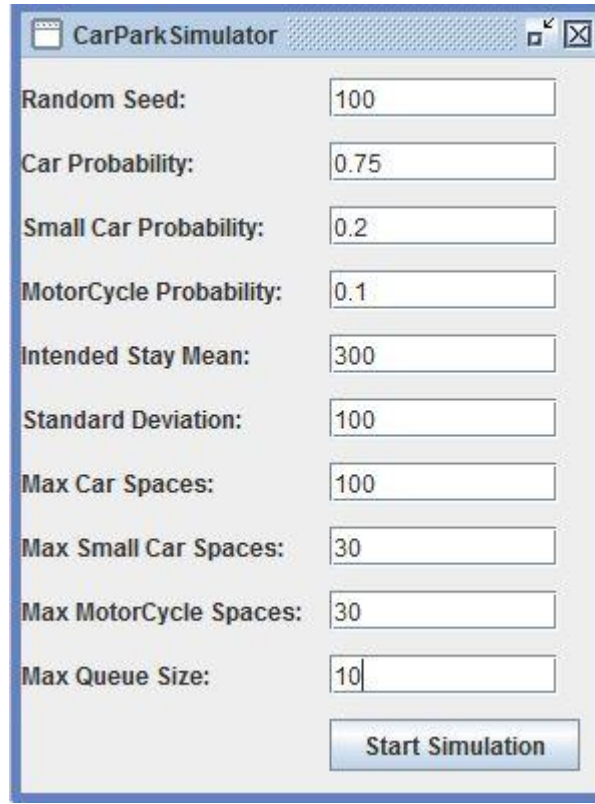
Parameter	Value
Random Seed:	100
Car Probability:	0.75
Small Car Probability:	0.5
MotorCycle Probability:	0.2
Intended Stay Mean:	180
Standard Deviation:	60
Max Car Spaces:	100
Max Small Car Spaces:	80
Max MotorCycle Spaces:	30
Max Queue Size:	10

Start Simulation

smallCars.log values



4. longStay.log



A screenshot of a Java Swing window titled "CarPark Simulator". The window contains ten text input fields for simulation parameters, each with a label to its left. The values entered in the fields are: Random Seed: 100, Car Probability: 0.75, Small Car Probability: 0.2, MotorCycle Probability: 0.1, Intended Stay Mean: 300, Standard Deviation: 100, Max Car Spaces: 100, Max Small Car Spaces: 30, Max MotorCycle Spaces: 30, and Max Queue Size: 10. A "Start Simulation" button is located at the bottom right of the window.

Parameter	Value
Random Seed:	100
Car Probability:	0.75
Small Car Probability:	0.2
MotorCycle Probability:	0.1
Intended Stay Mean:	300
Standard Deviation:	100
Max Car Spaces:	100
Max Small Car Spaces:	30
Max MotorCycle Spaces:	30
Max Queue Size:	10

Start Simulation

longStay.log values

