**JAVA FUNDAMENTALS SECTION 4: Creating an Inventory Project**

**PROJECT 1**

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**Data types:**

**Creating classes/objects**

**Instance variables/fields**

**Constructors**

**Methods(getters/accessors, setters/mutators)**

**Overloading**

**Main/tester**

**classes**

**toString()**

**Step 1: Identify traffic signals and create a table**

| **Attribute** | **Sample Data** |
| --- | --- |
| Intersection Name | Elm & Main, Oak & 5th, Pine & 7th, Cedar & 9th, Birch & 3rd, Maple & 6th |
| Signal Cycle Duration (sec) | 90, 120, 60, 75, 100, 110 |
| Average Daily Traffic Count | 15000, 20000, 25000, 18000, 22000, 16000 |
| Signal ID | 101, 102, 103, 104, 105, 106 |

**Step 2: Add data types to the table**

| **Attribute** | **Sample Data** | **Data Type** |
| --- | --- | --- |
| Intersection Name | Elm & Main | String |
| Signal Cycle Duration (sec) | 90 | int |
| Average Daily Traffic Count | 15000 | int |
| Signal ID | 101 | int |

**Step 3-4: Create project and class**

public class TrafficSignal {

private String intersectionName;

private int signalCycleDuration;

private int averageDailyTrafficCount;

private int signalId;

public TrafficSignal(String intersectionName, int signalCycleDuration, int averageDailyTrafficCount, int signalId) {

this.intersectionName = intersectionName;

this.signalCycleDuration = signalCycleDuration;

this.averageDailyTrafficCount = averageDailyTrafficCount;

this.signalId = signalId;

}

public String getIntersectionName() {

return intersectionName;

}

public int getSignalCycleDuration() {

return signalCycleDuration;

}

public int getAverageDailyTrafficCount() {

return averageDailyTrafficCount;

}

public int getSignalId() {

return signalId;

}

public static void main(String[] args) {

TrafficSignal[] signals = {

new TrafficSignal("Elm & Main", 90, 15000, 101),

new TrafficSignal("Oak & 5th", 120, 20000, 102),

new TrafficSignal("Pine & 7th", 60, 25000, 103),

new TrafficSignal("Cedar & 9th", 75, 18000, 104),

};

for (TrafficSignal signal : signals) {

System.out.println("Intersection: " + signal.getIntersectionName());

System.out.println("Signal Cycle Duration: " + signal.getSignalCycleDuration() + " sec");

System.out.println("Average Daily Traffic Count: " + signal.getAverageDailyTrafficCount());

System.out.println("Signal ID: " + signal.getSignalId());

System.out.println();

}

}

}

