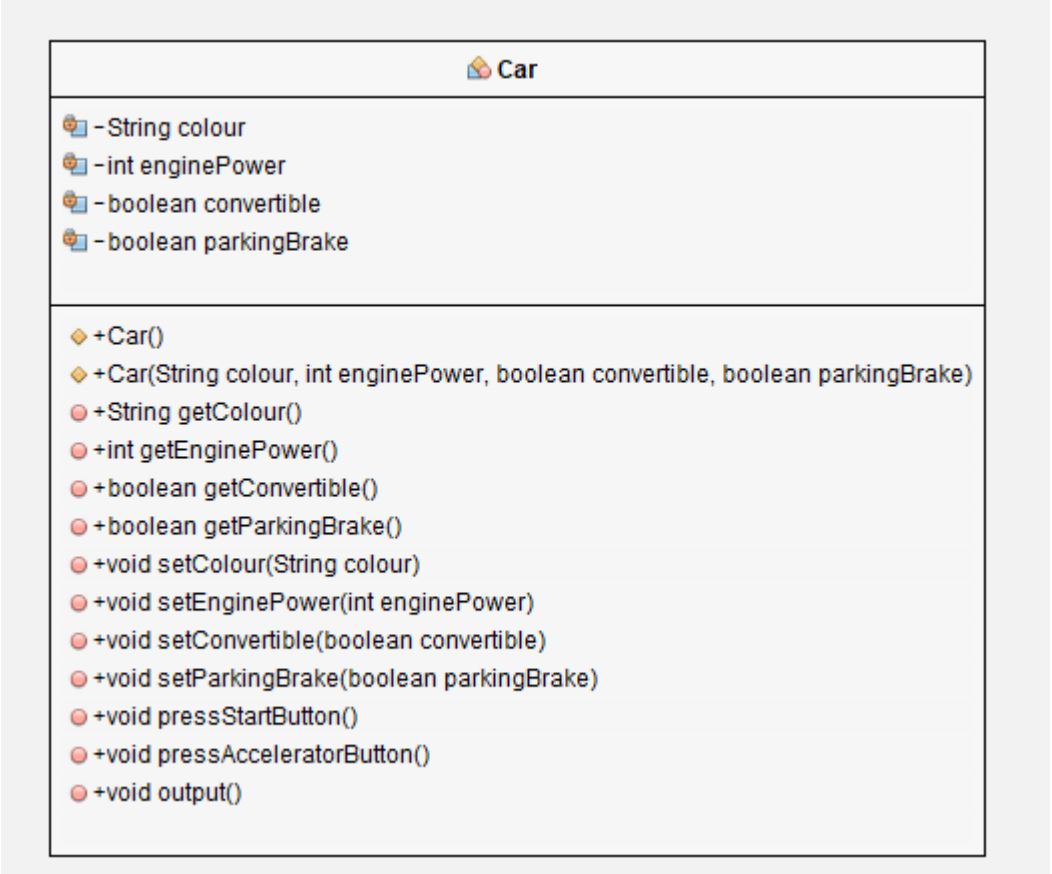
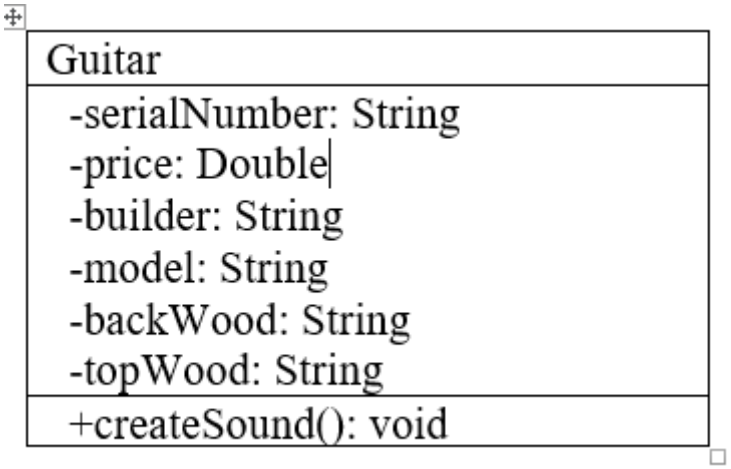
Workshop3

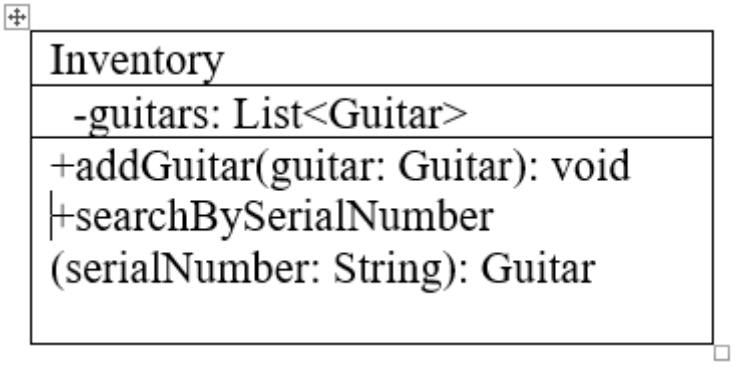
Part 1:



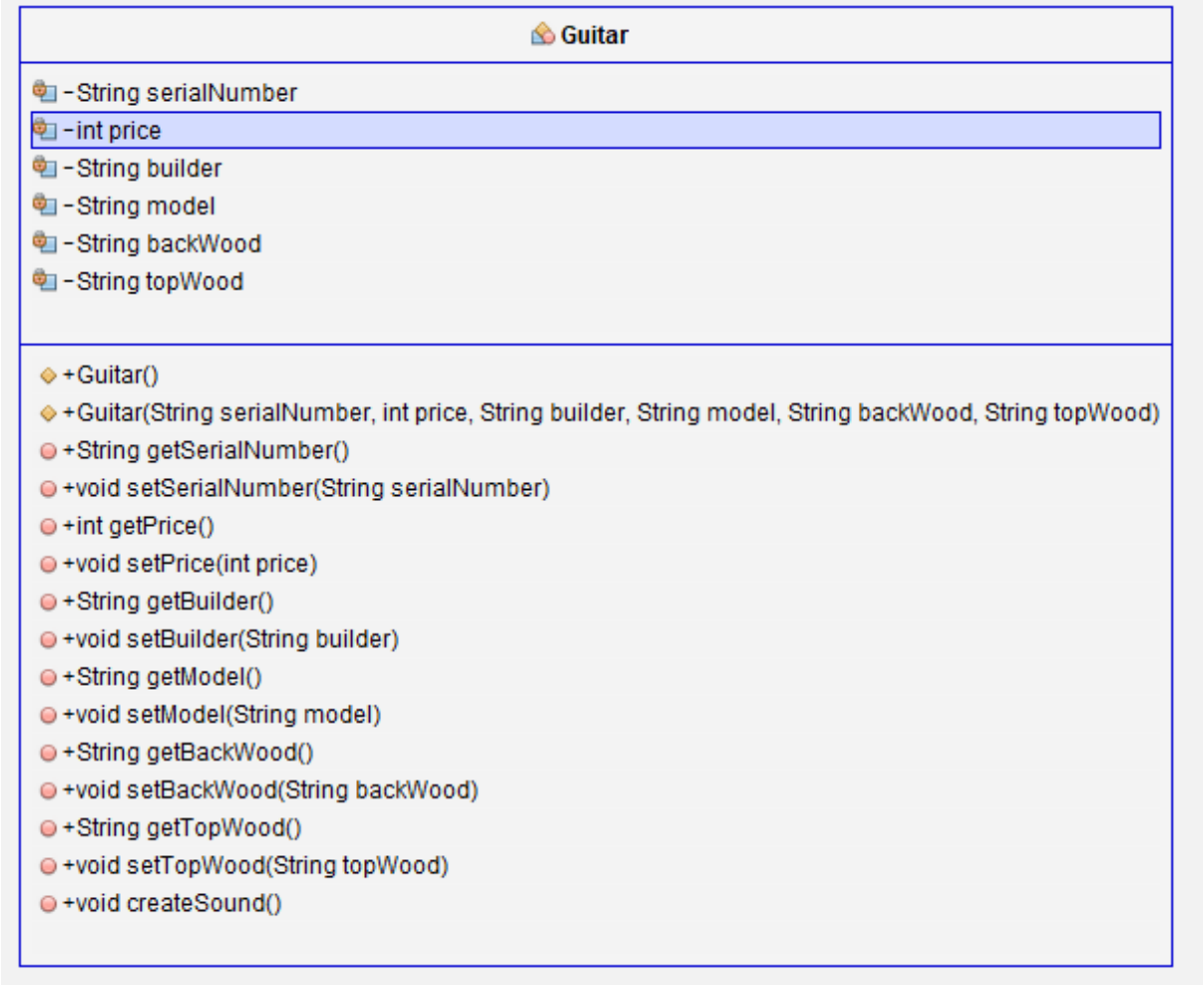
Part 2:

- Classes:
    1. Guitar:
        - Fields: serialNumber, price, builder, model, backWood, topWood
        - Methods: createSound
    2. Inventory:
        - Fields: list of guitars
        - Methods: addGuitar, searchBySerialNumber
- UML:





Part 3:


Guitar
-String serialNumber
-int price
-String builder
-String model
-String backWood
-String topWood
+Guitar()
+Guitar(String serialNumber, int price, String builder, String model, String backWood, String topWood)
+String getSerialNumber()
+void setSerialNumber(String serialNumber)
+int getPrice()
+void setPrice(int price)
+String getBuilder()
+void setBuilder(String builder)
+String getModel()
+void setModel(String model)
+String getBackWood()
+void setBackWood(String backWood)
+String getTopWood()
+void setTopWood(String topWood)
+void createSound()

Part 4:

- **What is stored in the static heap, stack, dynamic heap?**
  - Static heap, the class objects and static variables are stored.
  - Stack, the method calls, local variables, and object references are stored.
  - Dynamic heap, the objects are stored.

- **What are objects in the program?**
  - The objects in the program are *obj1* and *obj2*.

- **What is the state of obj1, obj2?**
  - The state of obj1 is empty values for all fields.
  - The state of obj2 is the values assigned during its constructor.

- **Do you access all fields of obj1 in the class Tester.java? Why?**
  - No.
  - Because *obj1*'s fields are private and we can access all fields of *obj1* in its class.

- **What is the current object when the program runs to the line “obj2.createSound();”?**
    - It’s *obj2*.

- **In the method main, can you use the keyword “this” to access all fields of obj2? Why?**
    - No.
    - Reason 1: main is a static method.
    - Reason 2: main is in Tester class, not in Guitar class.