Lab 08 Solutions:

Student

```
public class Student {

	private String name;
	private int age;
	private double

	// Methods

	public Student() {
	}
	public Student(String name, int age, double GPA) {
		this.name = name;
		this.age = age;
		this.GPA = GPA;
	}

	public void setName(String name){
		this.name = name;
	}
		public String getName(){
		return name;
	}
		public void setAge(int age){
		this.age = age;
	}
		public int getAge(){
		return age;
	}
		public void setGPA(double GPA){
		this.GPA = GPA;
	}
		public double getGPA(){
		return GPA;
	}

	public void printInfo() {
		System.out.println("------------------------");
		System.out.println("Student name: "+name);
		System.out.println("Student age: "+age);
		System.out.println("Student GPA: "+GPA);
		System.out.println("------------------------");
	}
}
```

```
======================  Class testStudent  ========================

import java.util.Scanner;
public class testStudent {
	public static void main(String[] args) {
		Scanner kb = new Scanner (System.in);

		// Using empty constructor
		Student s1 = new Student ();
		System.out.print("Please enter the name, age and GPA ");
		s1.setName(kb.next());
		s1.setAge(kb.nextInt());
		s1.setGPA(kb.nextDouble());

		// Print student info
		s1.printInfo();

		// Using second constructor
		System.out.print("Please enter the name, age and GPA ");
		Student s2 = new Student( kb.next(), kb.nextInt(), kb.nextDouble()
);

		// Print student info
		s2.printInfo();

		// Print student info using getters
		System.out.println("The first student name is "+s1.getName()+" and
his age is "+s1.getAge()+" his GPA is "+s1.getGPA());

		// Which student has a higher GPA?

		if (s1.getGPA() > s2.getGPA())
			System.out.println(s1.getName()+" has a higher GPA than
"+s2.getName());
		else
			if (s1.getGPA() < s2.getGPA())
				System.out.println(s2.getName()+" has a higher GPA than
"+s1.getName());
			else System.out.println(s1.getName()+" and "+s2.getName()+"
have same GPA");

		kb.close();
	}
}
```

Building

```
public class Building {

	private int apts;
	private int normal = 0;
	private int delux = 0;
	private double rent;

// Methods

	public Building () { }
	public Building (int apts, double rent) {
		this.apts = apts;
		this.rent = rent;
	}
	public void setApts(int apts){
	this.apts = apts;
	}
	public int getApts() {
	return this.apts;
	}
	public void setRent(double rent) {
		this.rent = rent;
	}
	public double getRent() {
		return rent;
	}
	public int getNormal () {
		return normal;
	}
	public int getDelux () {
		return this.delux;
	}
	public int howManyRented() {
	return normal+delux;
}
	public boolean rentApt(int n, String type) {
	if (n+normal+delux > apts ) return false;
	else {
		if (type.equalsIgnoreCase("normal")) normal = normal +n;
		else if (type.equalsIgnoreCase("delux")) delux = delux +n;
		return true;
	}
}
	public void printInfo() {
		System.out.println("\n================== Building Info
=========================");
```

```
            System.out.println("The Building has "+apts+" appartment.\n"
                  +"Only "+howManyRented()+" have been rented. \n"+normal
                  +" normal appartments with rent = "+rent+" SR per month.\nAnd
"
                  +delux+" delux appartments with rent "+rent*1.2+" SR per
month");

      System.out.println("=================================================
=======\n");
}
} // class
```

```
======================== testBuilding Class ======================
```

```
import java.util.Scanner;
public class testBuilding {
      public static void main(String[] args) {
            Scanner kb = new Scanner(System.in);
            Building b1;
            System.out.print("Enter number of appartments and rent amount :");
            b1 = new Building(kb.nextInt(), kb.nextDouble());

            Building b2 = new Building();
            System.out.print("How many normal appartments would you like to
rent? ");
            int n = kb.nextInt();
            if (b1.rentApt(n,"normal") == false )
                  System.out.println("Requested number of appartments exceeds
availability");
            else System.out.println(n+" normal Appartments have been rented");

            System.out.print("How many delux appartments would you like to
rent? ");
             n = kb.nextInt();
            if (b1.rentApt(n,"delux") == false )
                  System.out.println("Requested number of appartments exceeds
availability");
            else System.out.println(n+" delux Appartments have been rented");

            b1.printInfo();


            kb.close();
      }
}
```

Stock

```
public class Stock {
private String symbol;
private String name;
private double previousClosingPrice;
private double currentPrice;

// Methods starts here

public void setSymbol(String newSymbol){
      symbol = newSymbol;
      }
public String getSymbol() {
      return symbol;
      }
public void setName(String newName){
      name = newName;
      }
public String getName() {
      return name;
      }
public void setCurrentPrice(double newCurrentPrice) {
      currentPrice = newCurrentPrice;
      }
public void setPreviousClosingPrice(double newPreviousClosingPrice) {
      previousClosingPrice = newPreviousClosingPrice;
      }
public double getChangePercent() {
      return (currentPrice - previousClosingPrice) / previousClosingPrice;
      }
public double getPreviousClosingPrice() {
      return previousClosingPrice;
      }
public double getCurrentPrice() {
      return currentPrice;
      }

}
```

```
==================== testStock Class ======================

import java.util.Scanner;
public class testStock {
      public static void main(String[] args) {
            Scanner input = new Scanner(System.in);
            Stock stock = new Stock();
```

```
            System.out.print("Enter symbol of stock:");
            stock.setSymbol(input.next());
            System.out.print("Enter company name:");
            stock.setName(input.next());
            System.out.print("Enter previous closing price:");
            double prevPrice = input.nextDouble();
            stock.setPreviousClosingPrice(prevPrice);
            System.out.print("Enter curret price:");
            double currentPrice = input.nextDouble();
            stock.setCurrentPrice(currentPrice);

            // Display stock info

            System.out.println("For the stock "+stock.getSymbol()+" of the
company "+stock.getName()+" :");
            System.out.println("Previous Closing Price: "
            + stock.getPreviousClosingPrice());
            System.out.println("Current Price: " + stock.getCurrentPrice());
            System.out.println("Price Change: " + stock.getChangePercent() *
100 + "%");
      }
}
```