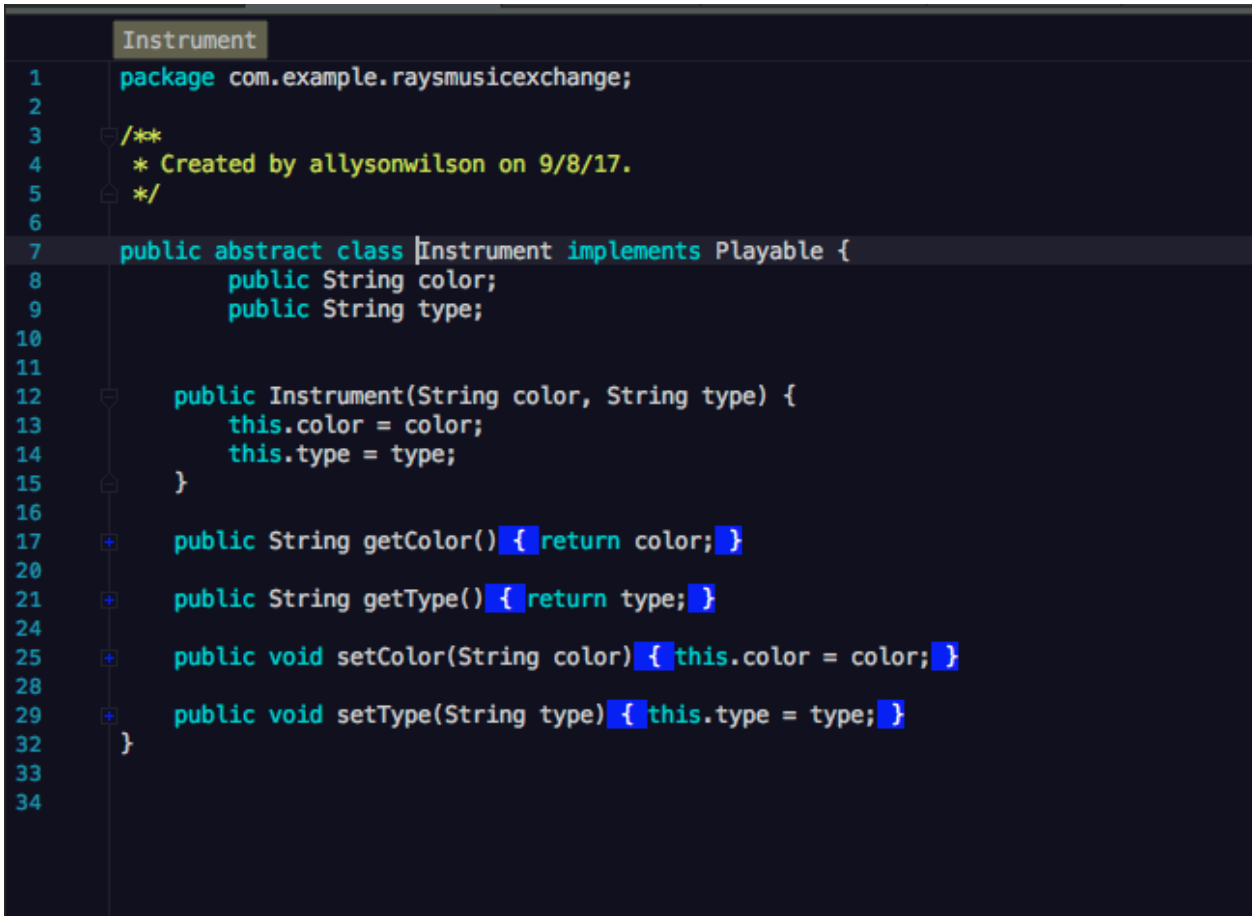
Allyson Wilson
Cohort 15
16/8/17

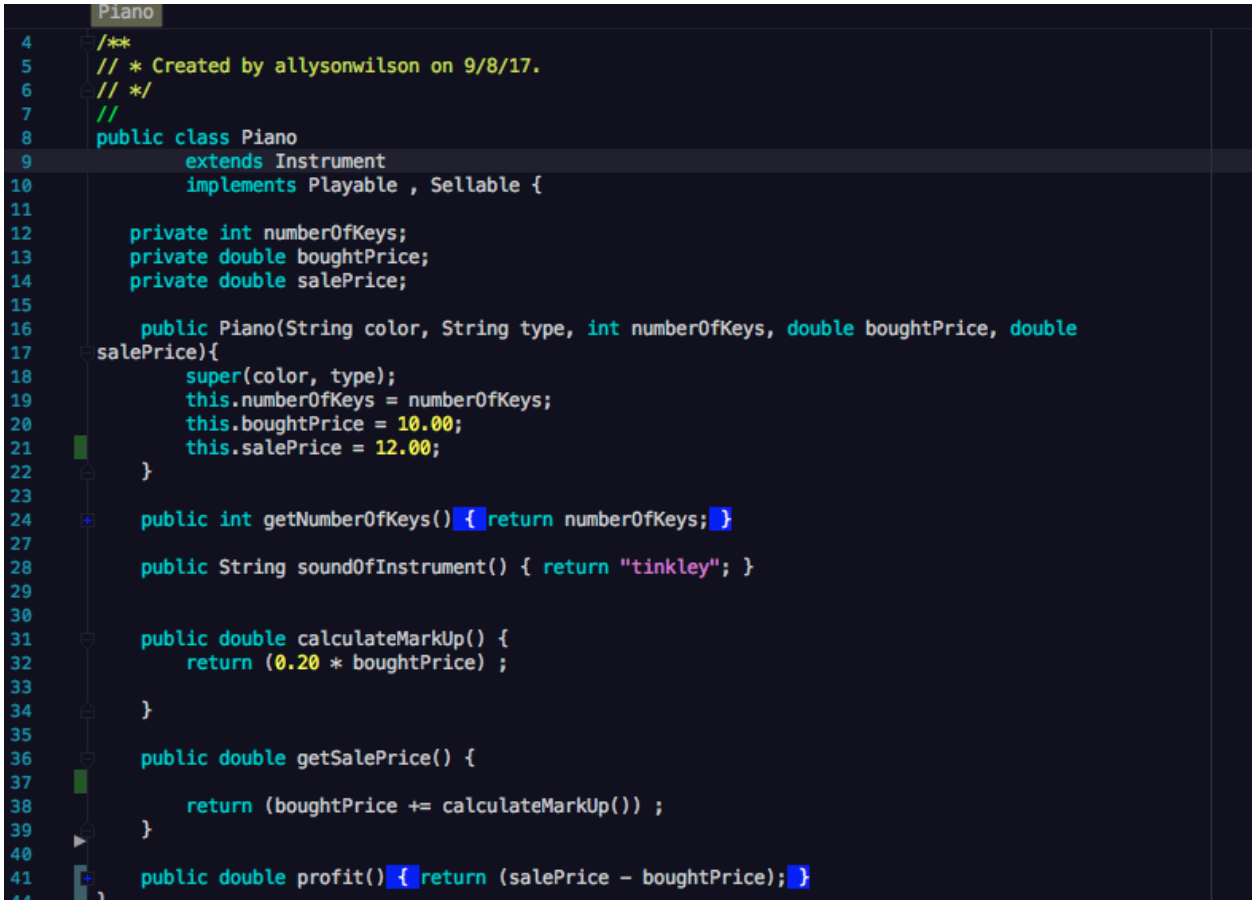
I.T 1 Encapsulation

```
 * Created by allysonwilson on 9/22/17.
 */

public class Patient {

    private String name;
    private Status status;
    public Gender gender;
    private int age;
    private int health;

    public Patient (String name, Status status, Gender gender, int age, int health) {
        this.name = name;
        this.status = status;
        this.gender = gender;
        this.age = age;
        this.health = health;
    }

    public String getName() { return name; }

    public Status getStatus() { return status; }

    public Gender getGender() { return gender; }

    public int getAge() { return age; }
```

I.T 2 Superclass



I.T 2 Class inherits from previous class



I.T 2 Object in Inherited Class

```java
import ...
/**
 * Created by allysonwilson on 9/9/17.
 */

public class PianoTest {

    Piano piano;

@Before
    public void before() { piano = new Piano( "white", "string instrument", 88, 10.00, 12.00); }

    @Test
    public void testHasColor() { assertEquals( "white", piano.getColor() ); }

    @Test
    public void testHasType() { assertEquals( "string instrument" , piano.getType() ); }

    @Test
    public void testHasNumberOfKeys() { assertEquals( 88, piano.getNumberOfKeys() ); }

    @Test
    public void testSoundOfInstrument() { assertEquals( "tinkley" , piano.soundOfInstrument()); }

    @Test
    public void testCalculateMarkUp() { assertEquals( 2.00, .01, piano.calculateMarkUp() ); }

    @Test
    public void testHasSalePrice() { assertEquals(12.00, 0.1, piano.getSalePrice() ); }

    @Test
    public void testHasProfit() { assertEquals( 2.00, 0.01, piano.profit() ); }
}
```

I.T 2 Method from inherited class of Sellable

```java
    public double calculateMarkUp() {
        return (0.20 * boughtPrice) ;

    }
```

IT 3 Search Data

```ruby
# adoption.rb
  end

  def self.all()
    sql = "SELECT * FROM adoptions"
    values = []
    results = SqlRunner.run( sql, values )
    return results.map { |adoption| Adoption.new( adoption ) }
  end

  def animal()
    sql = "SELECT * FROM animals
    WHERE id = $1"
    values = [@animal_id]
    results = SqlRunner.run( sql, values )
    return Animal.new( results.first )
  end

  def hero()
    sql = "SELECT * FROM heroes
    WHERE id = $1"
    values = [@hero_id]
    results = SqlRunner.run( sql, values )
    return Hero.new( results.first )
  end
```

Result of function running

```
Shelter_Project — ruby db/seeds.rb — ruby — ruby db/seeds.rb — 113×32
[2] pry(main)> adoption1.hero()
=> #<Hero:0x007ffd4c2b34b8 @id=4, @image="/images/Ona_avatar.png", @name="Ona">
[3] pry(main)> hero1.name()
=> "Ona"
[4] pry(main)> animal1.species()
=> "Basking Shark"
[5] pry(main)>
```

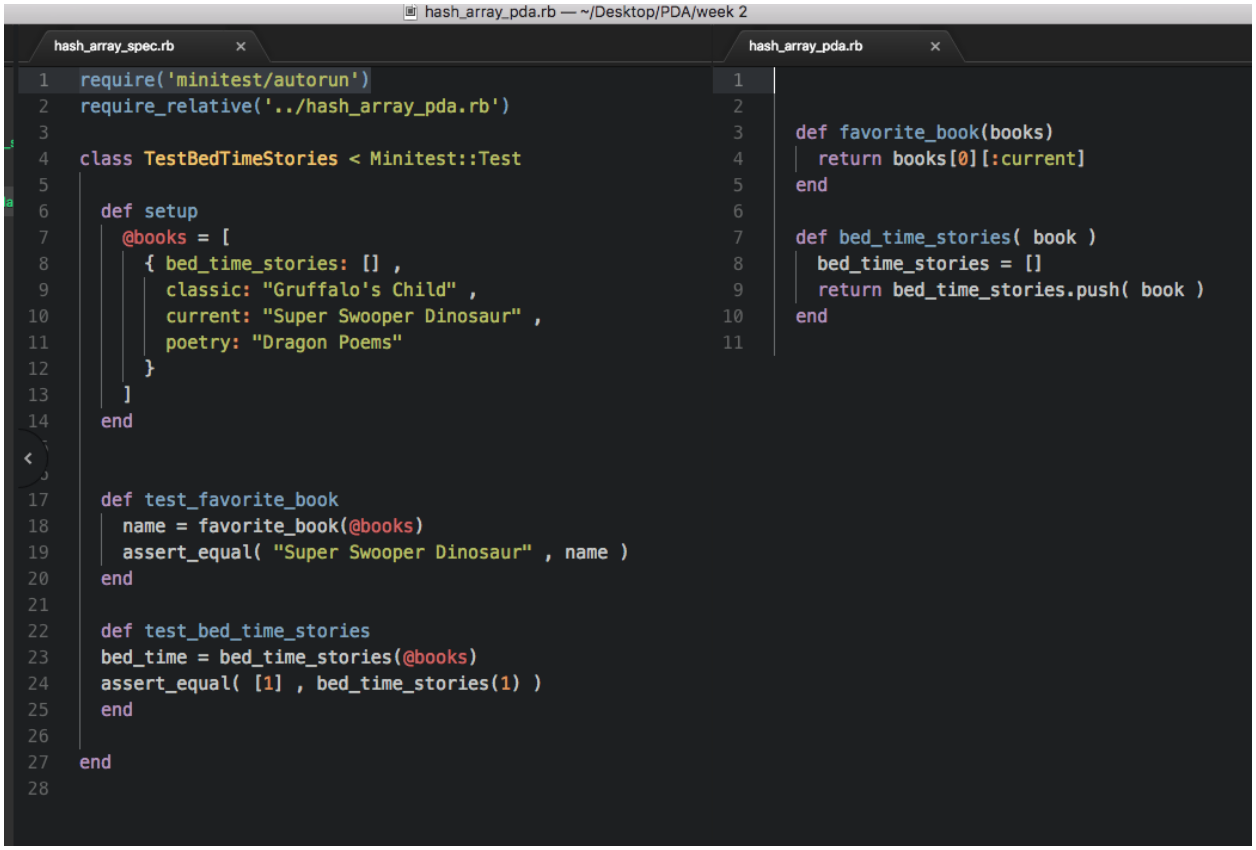
IT 4 Sort Data

```ruby
def self.all()
  sql = "SELECT * FROM heroes ORDER by name"
  values = []
  results = SqlRunner.run( sql, values )
  return results.map { |hash| Hero.new( hash ) }
end
```

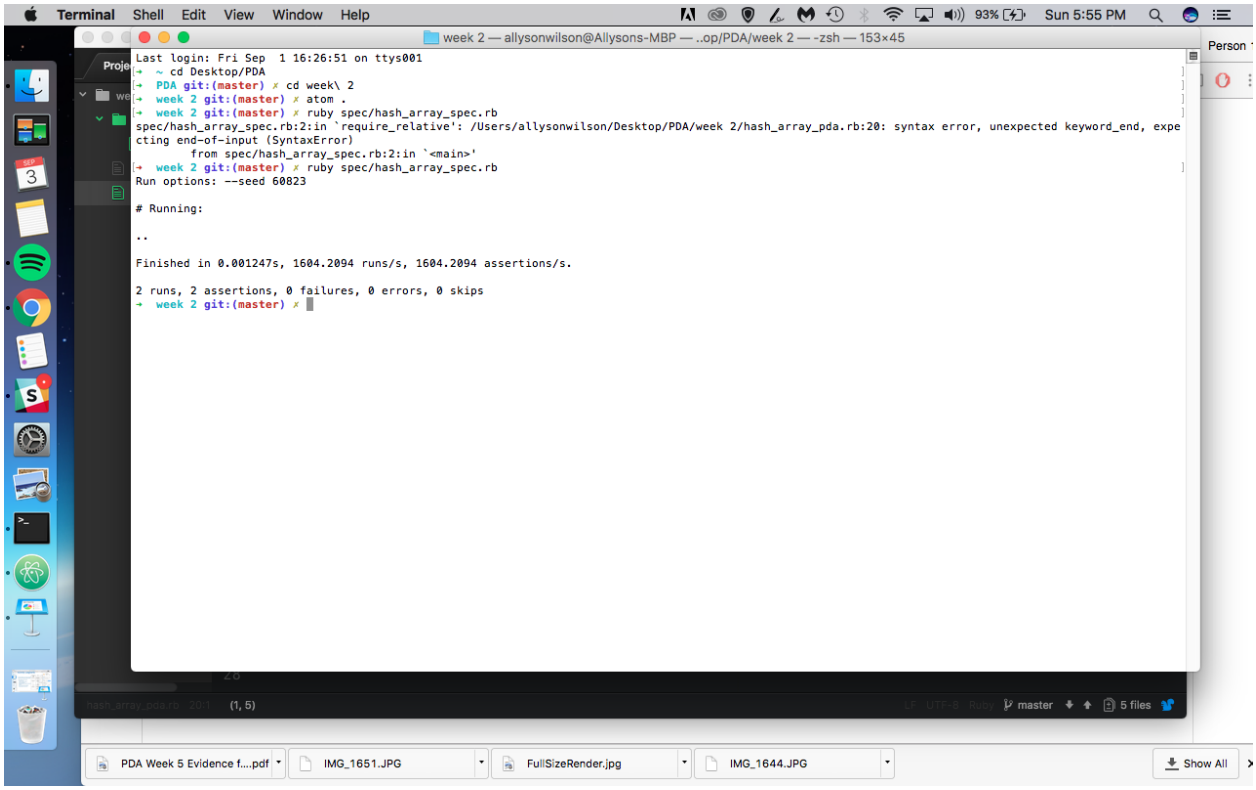
```ruby
def self.all()
  sql = "SELECT * FROM heroes ORDER by name"
  values = []
  results = SqlRunner.run( sql, values )
  return results.map { |hash| Hero.new( hash ) }
end
```

```
→  Shelter_Project git:(master) ✗ ruby db/seeds.rb

From: /Users/allysonwilson/Desktop/Shelter_Project/db/seeds.rb @ line 62 :

    57:   'hero_id' => hero1.id
    58: })
    59: adoption1.save()
    60:
    61: binding.pry
 => 62: nil

[1] pry(main)> Hero.all()
=> [#<Hero:0x007fc97183cc68 @id=8, @image="/images/Granny.png", @name="Granny">,
 #<Hero:0x007fc971836ca0 @id=9, @image="/images/Fraser_avatar.png", @name="Joe">,
 #<Hero:0x007fc971835aa8 @id=7, @image="/images/Ona_avatar.png", @name="Ona">]
[2] pry(main)>
```

IT 5 and IT 6 Hash and Array with TDD



Terminal Print out of successful tests below:



IT 7 Polymorphism in a program

```
public class Shop {
    private ArrayList<Sellable> stock;

    public Shop() { this.stock = new ArrayList<>(); }

    public ArrayList<Sellable> getStock() { return this.stock; }

    public void addStock(Sellable sellable) { this.stock.add(sellable); }
}
```

```
public interface Sellable {
    double calculateMarkUp();
}
```

```java
public class Piano
        extends Instrument
        implements Playable , Sellable {

    private int numberOfKeys;
    private double boughtPrice;
    private double salePrice;

    public Piano(String color, String type, int numberOfKeys, double boughtPrice, double
salePrice){
        super(color, type);
        this.numberOfKeys = numberOfKeys;
        this.boughtPrice = 10.00;
    }

    public int getNumberOfKeys() { return numberOfKeys; }

    public String soundOfInstrument() { return "tinkley"; }


    public double calculateMarkUp() {
        return (0.20 * boughtPrice) ;

    }

    public double getSalePrice() { return (boughtPrice += calculateMarkUp()) ; }
}
```

```java
public class SheetMusic
        implements Sellable {

    private double boughtPrice;
    private double salePrice;
    private String type;

    public SheetMusic( double boughtPrice, double salePrice, String type){
        this.boughtPrice = boughtPrice;
        this.salePrice = salePrice;
        this.type = type;
    }

    public double calculateMarkUp() { return (0.20 * boughtPrice); }

    public double getSalePrice() { return (boughtPrice += calculateMarkUp()) ; }

    public double getBoughtPrice() { return boughtPrice; }
        public String getType() { return type; }
}
```

```
    }

    @Test
    public void canAddItemToStock(){
        shop = new Shop();
        shop.addStock(piano1);
        shop.addStock(sheetMusic1);
        assertEquals( 2 , shop.getStock().size() );
    }
```