



```
1 require('pry-bybug')
2 require_relative("../db/sql_runner.rb")
3
4 class Album
5   attr_reader :album_name, :genre, :current_stock, :ideal_stock, :id, :artist_id
6
7   def initialize(params)
8     @id = params['id'].to_i if params['id']
9     @album_name = params['album_name']
10    @genre = params['genre']
11    @current_stock = params['current_stock']
12    @ideal_stock = params['ideal_stock']
13    @artist_id = params['artist_id'].to_i
14  end
15
16  def save
17    sql = "INSERT INTO albums (
18      album_name, genre, current_stock, ideal_stock, artist_id)
19    VALUES
20    ($1, $2, $3, $4, $5)
21    RETURNING id"
22    values = [@album_name, @genre, @current_stock, @ideal_stock, @artist_id]
23    results = SqlRunner.run(sql, values)
24    @id = results.first()['id'].to_i
25  end
26
27  def artist
28    sql = "SELECT * FROM artists
29    WHERE id = $1"
30    values = [@artist_id]
31    results = SqlRunner.run(sql, values)
32    return Artist.new( results.first )
33  end
34
35  def self.find(id)
36    sql = "SELECT * FROM albums
37    WHERE id = $1;"
38    values = [id]
39    results = SqlRunner.run(sql, values)
40    return Album.new( results.first )
41  end
42
43  def self.all()
44    sql = "SELECT * FROM albums"
45    values = []
```

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PDA: Software Development

I&T I.T 2

```
StockItem.java x MusicFormat.java x Purchaseable.java x MusicFormatTest.java x
1 package music_shop;
2 import behaviours.*;
3
4 public abstract class StockItem
5 implements Purchaseable {
6     protected int wholesalePrice;
7     protected int retailPrice;
8
9     public StockItem(int wholesalePrice,
10 int retailPrice) {
11     this.wholesalePrice =
12     wholesalePrice;
13     this.retailPrice = retailPrice;
14 }
15
16 public int getWholesalePrice() {
17     return this.wholesalePrice;
18 }
19
20 public int getRetailPrice() {
21     return this.retailPrice;
22 }
23 }
24
25 package music_shop;
26 import behaviours.*;
27
28 public class MusicFormat extends
29 StockItem implements Purchaseable {
30
31     int format_id;
32     String artist;
33     String album;
34     MusicType type;
35
36     public MusicFormat (int format_id,
37 String artist, String album,
38 MusicType type, int wholesalePrice
39 , int retailPrice) {
40     super(wholesalePrice, retailPrice);
41     this.format_id = format_id;
42     this.artist = artist;
43     this.album = album;
44     this.type = type;
45 }
46
47 public int getFormatId() {
48     return this.format_id;
49 }
50
51 public String getArtistName() {
52     return this.artist;
53 }
54
55 public String getAlbumName() {
56     return this.album;
57 }
58
59 public MusicType getType() {
60     return this.type;
61 }
62
63 public int getRetailPrice() {
64     return this.retailPrice;
65 }
66
67 public int calculateMarkup() {
68     return this.retailPrice - this.
69     wholesalePrice;
70 }
71 }
72
73 package behaviours;
74
75 public interface Purchaseable {
76     int calculateMarkup();
77 }
78
79 package behaviours;
80
81 public class MusicFormatTest {
82
83     MusicFormat musicFormat;
84     MusicType type;
85     MusicFormat cassette;
86     MusicFormat compactDisc;
87     MusicFormat record;
88
89     @Before
90     public void before() {
91         cassette = new MusicFormat(202, "Sonic Youth", "Sonic Death",
92 MusicType.CASSETTE, 10, 20);
93         compactDisc = new MusicFormat(203, "Violent Femmes", "American People",
94 MusicType.COMPACT_DISC, 8, 16);
95         record = new MusicFormat(204, "The Doors", "Morrison Hotel",
96 MusicType.RECORD, 15, 30);
97     }
98
99     @Test
100     public void hadFormatId() {
101         assertEquals(204, record.getFormatId());
102     }
103
104     @Test
105     public void hasArtistName() {
106         assertEquals("Sonic Youth", cassette.getArtistName());
107     }
108
109     @Test
110     public void hasAlbumName() {
111         assertEquals("American People", compactDisc.getAlbumName());
112     }
113
114     @Test
115     public void hasType() {
116         assertEquals(MusicType.COMPACT_DISC, compactDisc.getType());
117     }
118
119     @Test
120     public void hasRetailPrice() {
121         assertEquals(30, record.getRetailPrice());
122     }
123
124     @Test
125     public void canGetMarkup() {
126         assertEquals(15, record.calculateMarkup());
127     }
128 }
```

```
public class MusicFormatTest {

    MusicFormat musicFormat;
    MusicType type;
    MusicFormat cassette;
    MusicFormat compactDisc;
    MusicFormat record;

    @Before
    public void before() {
        cassette = new MusicFormat(202, "Sonic Youth", "Sonic Death", MusicType.CASSETTE, 10, 20);
        compactDisc = new MusicFormat(203, "Violent Femmes", "American People", MusicType.COMPACT_DISC, 8, 16);
        record = new MusicFormat(204, "The Doors", "Morrison Hotel", MusicType.RECORD, 15, 30);
    }

    @Test
    public void hadFormatId() {
        assertEquals(204, record.getFormatId());
    }

    @Test
    public void hasArtistName() {
        assertEquals("Sonic Youth", cassette.getArtistName());
    }

    @Test
    public void hasAlbumName() {
        assertEquals("American People", compactDisc.getAlbumName());
    }

    @Test
    public void hasType() {
        assertEquals(MusicType.COMPACT_DISC, compactDisc.getType());
    }

    @Test
    public void hasRetailPrice() {
        assertEquals(30, record.getRetailPrice());
    }

    @Test
    public void canGetMarkup() {
        assertEquals(15, record.calculateMarkup());
    }
}
```

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PDA: Software Development

I&T I.T 3

```
pda_evidence_week3.rb
1 # I.T 3 & 4
2 # Demonstrate searching data in a program.
3 # Function that searches data
4 # The result of the function running
5
6
7 rounds = [72,74,68,72,75, 71, 68, 71]
8
9 def golf_average_par(rounds)
10   total = 0
11   for round in rounds
12     total = total + round
13   end
14   return total/rounds.length
15 end
16
17 result = golf_average_par(rounds).to_s + " is my average score per round of golf!"
18
19 puts result
20 puts "-----"
21 puts rounds.collect { |x| x.to_s + " is par for this round"}
22 puts "-----"
23 puts rounds.sort { |x,y| y <=> x}
24 puts "-----"
25 puts rounds.reverse
26
```

```
Evidence — craiglynagh@craigs-MacBook-Pro — ../PDA/Evidence — -zsh — 8...
74
72
→ Evidence git:(master) x ruby pda_evidence_week3.rb
71 is my average score per round of golf!
-----
72 is par for this round
74 is par for this round
68 is par for this round
72 is par for this round
75 is par for this round
71 is par for this round
68 is par for this round
71 is par for this round
-----
75
74
72
72
71
71
68
68
-----
71
68
71
75
72
68
74
72
→ Evidence git:(master) x
```

I&T I.T 4

```
pda_evidence_week3.rb
1 # I.T 3 & 4
2 # Demonstrate searching data in a program.
3 # Function that searches data
4 # The result of the function running
5
6
7 rounds = [72,74,68,72,75, 71, 68, 71]
8
9 def golf_average_par(rounds)
10   total = 0
11   for round in rounds
12     total = total + round
13   end
14   return total/rounds.length
15 end
16
17 result = golf_average_par(rounds).to_s + " is my average score per round of golf!"
18
19 puts result
20 puts "-----"
21
22 rounds = [72,74,68,72,75, 71, 68, 71]
23 def golf_par_comparison(rounds)
24   return rounds.sort.collect { |x| (x - 76) }
25 end
26
27 scores = golf_par_comparison(rounds).to_s + " is the par scores for the individual rounds"
28
29 puts scores
30
```

```
..2 PDA Example
→ codeclan_work ruby pda_evidence_week3.rb
71 is my average score per round of golf!
-----
[-8, -8, -5, -5, -4, -4, -2, -1] is the par scores for the individual rounds
→ codeclan_work []
```

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PDA: Software Development

I&T: I.T 5

```
pda_evidence.rb x
1 # I.T 5
2 # Demonstrate the use of an array in a program
3 # An array in a program
4 # A function that uses the array
5 # The result of the function running
6
7
8 rounds = [72,74,68,72,75, 71, 68, 71]
9
10 def golf_average_par(rounds)
11   total = 0
12   for round in rounds
13     total = total + round
14   end
15   return total/rounds.length
16 end
17
18 result = golf_average_par(rounds).to_s + " is my par average"
19
20 puts result
```

```
Evidence git:(master) x ruby pda_evidence.rb
71 is my par average
Radiohead has 4 members
Nirvana has 3 members
Sonic Youth has 4 members
Evidence git:(master) x ruby pda_evidence.rb
71 is my par average
Evidence git:(master) x
```

I&T: I.T 6

```
pda_evidence.rb
22 # I.T 6
23 # Demonstrate the use of a hash in a program
24 # An hash in a program
25 # A function that uses the hash
26 # The result of the function running
27
28
29 bands = [
30
31   band1 = {
32     band_name: "Radiohead",
33     members: 4,
34     albums: 11,
35     names: ["Thom","Jonny","Ed", "Colin", "Philip"],
36     genre: "alternative"
37   },
38
39   band2 = {
40     band_name: "Nirvana",
41     members: 2,
42     albums: 5,
43     names: ["Kurt","Krist","Dave"],
44     genre: "grunge"
45   },
46
47   band3 = {
48     band_name: "Sonic Youth",
49     members: 4,
50     albums: 9,
51     names: ["Kim","Thurston","Lee", "Steve"],
52     genre: "alternative"
53   },
54 ]
55
56
57 def band_total_members(bands)
58   band_members = []
59   for band in bands
60     band_members.push(band[:band_name]) if band[:members] > 3
61   end
62   return band_members
63 end
64
65 band = band_total_members(bands)
66
67 puts band
```

```
..2 PDA Example -zsh
Evidence ruby pda_evidence.rb
Radiohead
Sonic Youth
Evidence
```

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PDA: Software Development

I&T: I.T 7

```
MusicPlayer.java
1 package music_shop;
2 import behaviours.*;
3
4 public class MusicPlayer extends
  StockItem implements Purchaseable
  {
5
6     private int player_id;
7     private String name;
8     private PlayerType type;
9
10    public MusicPlayer (int player_id,
11                       String name, PlayerType type,
12                       int wholesalePrice, int
13                       retailPrice){
14        super(wholesalePrice,
15              retailPrice);
16        this.player_id = player_id;
17        this.name = name;
18        this.type = type;
19    }
20
21    public int getPlayerId(){
22        return this.player_id;
23    }
24
25    public String getPlayerName(){
26        return this.name;
27    }
28
29    public PlayerType getType(){
30        return this.type;
31    }
32
33    public int calculateMarkup(){
34        return this.retailPrice - this.
35            wholesalePrice;
36    }
37 }

Purchaseable.java
1 package behaviours;
2
3 public interface Purchaseable {
4     int calculateMarkup();
5 }

Shop.java
1 package music_shop;
2 import java.util.ArrayList;
3 import java.util.HashMap;
4 import behaviours.*;
5
6 public class Shop {
7
8     String name;
9     HashMap<Purchaseable> stock;
10    int totalFunds;
11
12    public Shop(String name){
13        this.name = name;
14        this.stock = new HashMap<Purchaseable
15            >();
16        this.totalFunds = 1000;
17    }
18
19    public String getName() {
20        return this.name;
21    }
22
23    public int getRetailPrice(Purchaseable
24        stock){
25        stock.put(stock.getFormatId(), stock)
26        ;
27        return stock.get(type.format_id).
28            getRetailPrice();
29    }
30
31    public void addItemToStockList(
32        Purchaseable stock) {
33        stock.put(stock.getFormatId(), stock)
34        ;
35    }
36
37    public String getAlbumNameFromStockList
38        (Integer format_id){
39        return stock.get(format_id).
40            getAlbumName();
41    }
42
43    public int countItems() {
44        return this.stock.size();
45    }
46 }

StockItem.java
1 package music_shop;
2 import behaviours.*;
3
4 public abstract class StockItem
  implements Purchaseable {
5     protected int wholesalePrice;
6     protected int retailPrice;
7
8     public StockItem(int
9        wholesalePrice, int retailPrice)
10    {
11        this.wholesalePrice =
12            wholesalePrice;
13        this.retailPrice = retailPrice;
14    }
15
16    public int getWholesalePrice() {
17        return this.wholesalePrice;
18    }
19
20    public int getRetailPrice() {
21        return this.retailPrice;
22    }
23 }
```

I & T Static & Dynamic Testing Task A

```
Terminal
Shell Edit View Window Help

FOLDERS
  Static and Dynamic Tasks A
  Implementation and Testing
  testing_task_1.rb
  testing_task_2.rb

testing_task_2.rb
1 ## Testing task 2 code:
2
3 # Carry out dynamic testing on the code below.
4 # Connect the errors below that you spotted in task 1.
5
6 def func1 val
7     if val == 1
8         return true
9     else
10        return false
11    end
12
13
14 def max a, b
15     if a > b
16         return a
17     else
18         b
19     end
20 end
21
22 def loopier
23     for i in 1..10
24         puts i
25     end
26
27     failures = 0
28
29     if loopier.count() == 10
30         puts "loopier passed"
31     else
32         puts "loopier failed"
33         failures = failures + 1
34     end
35
36     if func1(3) == false
37         puts "func1(3) passed"
38     else
39         puts "func1(3) failed"
40         failures = failures + 1
41     end
42
43
44     if max(100,1) == 100
45         puts "max(100,1) passed"
46     else
47
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