Evidence for Implementation and Testing Unit

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I.T 1 - Demonstrate one example of encapsulation that you have written in a program

```
public class Owner {
    private String name;
    private String email;

    public Owner(String name, String email){
        this.name = name;
        this.email = email;
    }

    public String getName() { return this.name; }

    public String getEmail() { return this.email; }
}
```

I.T 2 - Example the use of inheritance in a program

```
package com.example.alinemokfa.inheritance;

/**
 * Created by alinemokfa on 02/02/2018.
 */

public abstract class Animal {
    String species;
    int weight;


    public Animal(String species, int weight){
        this.weight = weight;
        this.species = species;
    }
}
```

```java
package com.example.alinemokfa.inheritance;

/**
 * Created by alinemokfa on 02/02/2018.
 */

public class Dog extends Animal implements Huggable {

    public Dog(String species, int weight){
        super(species, weight);
    }

    public String getSpecies(){
        return species;
    }

    public int getWeight(){
        return weight;
    }

    @Override
    public int oxytocin() {
        return 10;
    }
}
```

DogTest

```java
/**
 * Created by alinemokfa on 02/02/2018.
 */
public class DogTest {

    Dog dog;

    @Before
    public void before(){
        dog = new Dog( species: "Canis lupus familiaris",  weight: 15);
    }

    @Test
    public void hasSpecies(){
        assertEquals( expected: "Canis lupus familiaris", dog.getSpecies());
    }

    @Test
    public void hasWeight(){
        assertEquals( expected: 15, dog.getWeight());
    }

    @Test
    public void canIncreaseOxytocin(){
        assertEquals( expected: 10, dog.oxytocin());
    }

}
```

All 3 tests passed – 4ms

```
4ms  "/Applications/Android Studio.app/Contents/jre/jdk/Contents/Home/bin/java" ...
4ms
0ms  Process finished with exit code 0
0ms
```

I.T 3 - Example of searching

```ruby
past_addresses = [{name: 'address1', post_code: "EH11 1EE", year: "2007"},
  {name: 'address2', post_code: "EH11 5TB", year: "2010"},
  {name: 'address3', post_code: "EH6 6LU", year: "2017"}]

def find_address_by_year(past_addresses, year)
  return past_addresses.find{ |address|
    address[:year] == year
  }
end

puts find_address_by_year(past_addresses, "2017")
```

```
➜  pda git:(master) ruby pda_practice.rb
{:name=>"address3", :post_code=>"EH6 6LU", :year=>"2017"}
➜  pda git:(master)
```

I.T 4 - Example of sorting

```ruby
num_list = [3, 5, 8, 2, 9, 1, 4, 6, 7]

def sort_num(array)
  array.sort
end

puts sort_num(num_list)
```

```
➜  pda git:(master) ✗ ruby pda_practice.rb
1
2
3
4
5
6
7
8
9
➜  pda git:(master) ✗
```

I.T 5 - Example of an array, a function that uses an array and the result

```ruby
alines_favourite_colours = ["red", "purple", "black"]

def count_colours (colours)
  total_colours = 0

  for colour in colours
    total_colours += 1
  end

  return "Aline's has " + total_colours.to_s + " favourite colours."
end

puts count_colours(alines_favourite_colours)
```

```
➜  pda git:(master) ✗ ruby pda.rb
Aline's has 3 favourite colours.
➜  pda git:(master) ✗
```

I.T 6 - Example of a hash, a function that uses a hash and the result

```ruby
pet1 = {
  name: "Margaret",
  type: "chicken",
  onomatopoeia: "Cluck cluck!",
  can_make_sound: true}

def pet_sound (pet)
  if pet[:can_make_sound] == true
    return pet[:onomatopoeia]
  else
    return "I don't make sounds."
  end
end

puts pet_sound(pet1)
```

```
➜  pda git:(master) ✗ ruby pda_practice.rb
Cluck cluck!
➜  pda git:(master) ✗
```

I.T 7 - Example of polymorphism in a program

```java
package com.example.alinemokfa.polymorphism;

/**
 * Created by alinemokfa on 02/02/2018.
 */

public interface Wearable {
    int warmth();
}
```

```java
package com.example.alinemokfa.polymorphism;

/**
 * Created by alinemokfa on 02/02/2018.
 */

public class Coat implements Wearable {

    @Override
    public int warmth() {
        return 50;
    }
}
```

```java
package com.example.alinemokfa.polymorphism;

/**
 * Created by alinemokfa on 02/02/2018.
 */

public class Shirt implements Wearable {

    @Override
    public int warmth() {
        return 10;
    }
}
```

```java
package com.example.alinemokfa.polymorphism;

import java.util.ArrayList;

/**
 * Created by alinemokfa on 02/02/2018.
 */

public class Model {
    private String name;
    private ArrayList<Wearable> wearing;

    public Model(String name){
        this.name = name;
        this.wearing = new ArrayList<Wearable>();
    }

    public void wear(Wearable item){
        wearing.add(item);
    }
}
```