

Unit 9 Practice

Name: Key 2-8-23

Refer to the Frog class to do problem 1.

```
class Frog
{
    private int location;

    public Frog()
    {
        location=0;
    }

    public void hop(int n)
    {
        location+=n;
    }

    public int getLocation()
    {
        return location;
    }

    public String toString()
    {
        String temp = "";
        for(int i = 0; i<location; i++)
            temp+=".";
        temp+="("+location+)";
        return temp;
    }
}
```

1. Write an OddFrog class which extends Frog. An OddFrog's location can only ever be zero or an odd number. After hopping, an OddFrog checks if the location is even, and if it is, it adds 1 to location.

```
class OddFrog extends Frog
{
    public void hop(int n)
    {
        super.hop(n);
        if (getLocation() % 2 == 0)
            super.hop(1);
    }
}
```

← it also would have been fine to say this.getLocation() (not necessary, though)

(continued on back)

2. Write code to create a regular Frog named **freddy** and then hop it 10 spaces.

```
Frog freddy = new Frog();  
freddy.hop(10);
```

3. Write code to create an OddFrog named **frankie** and hop it 11 spaces.

```
OddFrog frankie = new OddFrog();  
frankie.hop(11); (or frankie.hop(10); )
```

4. Assuming other code has already imported java.util.ArrayList, write one line of code to create an ArrayList named **pond** that could hold both the Frog and OddFrog that you just created.

```
ArrayList<Frog> pond = new ArrayList<Frog>();
```

5. Write two lines of code to add freddy and frankie to the ArrayList you created in problem 4.

```
pond.add(freddy);  
pond.add(frankie);
```

6. Given the following Book class, write a .equals() method for the Book class that that checks for a null object and then checks all internal values appropriately.

```
public class Book
```

```
{
```

```
    private String title;  
    private String author;
```

```
    public Book(String t, String a)
```

```
{
```

```
        title = t;  
        author = a;
```

```
}
```

```
}
```

```
    public boolean equals(Object other)
```

```
{
```

```
    if (other == null)
```

```
        return false;
```

```
    Book b = (Book) other;
```

```
    if (b.title.equals(this.title) &&
```

```
        b.author.equals(this.author))
```

```
        return true;
```

```
    return false;
```

```
}
```