

name _____ name _____

NOTE: As you do this exercise, focus on **understanding** every piece of code you write. Copying code examples without understanding leads to ugly code and bad exam grades.

NOTE2: Today's exercise is disposable. Make everything public and do not write any methods you don't absolutely need.

1. The following code works correctly. What improvement(s) could you make to the main()? Make a type-safe Collection in Java that can hold Dogs, Cows, and Fish. Represent that they all make different noises, but Dogs and Cows move the same way.

Modify the code so that your Collection holds a mix of all three types, and you can traverse the collection and have them all move or make noise.

```
public static void main(String[] arugula){

    Animal a = null;

    switch (1 + (int)(Math.floor(Math.random() * 3))){
    case 1: a = new Cow(); break;
    case 2: a = new Dog(); break;
    case 3: a = new Fish(); break;
    }

    if (a instanceof Dog)
        System.out.println( ((Dog)a).getNoise() );
    else if (a instanceof Cow)
        System.out.println( ((Cow)a).getNoise() );
    else if (a instanceof Fish)
        System.out.println( ((Fish)a).getNoise() );

    return;
}
```

Please ask questions as you develop your approach.