Consider the class:

```
public class CC {
    private int cint;
    private String cstring;
    public CC(int ii, String jj) {}
}
```

1. write a useful toString method for this class

```
    public String toString() {
       return "cint:["+cint+"]   cstring:["+cstring+"]";
    }
```

2. Extend the constructor to actually store the passed in values

```
public CC(int ii, String jj) {
        cint = ii;
        cstring = jj;
    }
```

3. Write as loop to create 10 instances of this class withe the arguements
   1, “JJ1”
   3, “JJ3”
   5, “JJ5”
   etc

```
// this did not need to be in a function,
    // but it was convenient for me to do so
    public void make10() {
        for (int i=0; i<10; i++) {
            CC cc = new CC(i*2+1, "JJ"+(i*2+1));
            System.out.println(cc);
        }
    }
```

4. Write all of the code you would need to store 10 different instances of this class:
   1. An array

```
public CC[] put10Array() {
```

```
        CC[] ca = new CC[10];
        for (int i=0; i<10; i++) {
            CC cc = new CC(i*2+1, "JJ"+(i*2+1));
            ca[i]=cc;
        }
        return ca;
    }
```

2. An ArrayList

```
public ArrayList<CC> put10ArrayList() {
        ArrayList<CC> ca = new ArrayList<>();
        for (int i=0; i<10; i++) {
            CC cc = new CC(i*2+1, "JJ"+(i*2+1));
            ca.add(cc);
        }
        return ca;
    }
```

3. An instance of Map206 where the key is the string passed to the constructor as jj
4. An instance of java.util.HashMap where the key is the string passed to the constructor as jj

```
public HashMap<String, CC> put10Hash() {
        HashMap<String, CC> ca = new HashMap<>();
        for (int i=0; i<10; i++) {
            CC cc = new CC(i*2+1, "JJ"+(i*2+1));
            ca.put( "JJ"+(i*2+1), cc);
        }
        return ca;
    }
```

5. Write code to read and print each of the items stored in the 4 structures filled in step 3.

```
    public void printA() {
        CC[] ccq = put10Array();
        for (int i=0; i<ccq.length; i++) {
            System.out.println(i + "  " + ccq[i]);
        }
    }
    public void printAL() {
        ArrayList<CC> ccal = put10ArrayList();
```

```
        for (int i=0; i<ccal.size(); i++) {
            System.out.println(i + "  " + ccal.get(i));
        }
    }
    public void printHM() {
        HashMap<String, CC> cchm = put10Hash();
        // this was not discussed in class and will not be on
test
        for (String key : cchm.keySet()) {
            System.out.println(key+ "  " + cchm.get(key));
        }
    }
```

6.