

19 Last Class meeting - Review

Friday, December 4, 2020 12:09 PM

Exam 2 is on Tuesday, December 8.

Logistics:

1. You will receive the exam in mail at 12:00 noon (Bryn Mawr Time/US Eastern) on Tuesday, December 8
2. The exam will be due Exactly twelve hours later by mail to dkumar@cs.brynmawr.edu by 11:59p on December 8, 2020.
3. If there are any quick questions, I will host open office hours from 2:30p to 4:00p on Tuesday, December 8. Please use the class Zoom link to get in.
4. Once you receive the exam there will be NO accommodations about it.

19 Lab#10 Review

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056,BE,BEL,Belgium,Brussels
068,BO,BOL,Bolivia,La Paz
180,CD,COD,The Democratic Republic of the Congo,Kinshasa
398,KZ,KAZ,Kazakhstan,Astana
404,KE,KE,Kenya,Nairobi
630,PR,PRI,Puerto Rico,San Juan

```
public class Country
```

```
    public Country(String abbrev, String name, String capital) - Constructor  
public String getISO() - Return the 3-letter ISO abbreviation  
public String getName() - Returns the name of the country  
public String getCapital()- Returns the name of the capital  
public String toString() - prints out the object in the format:  
    "KAZ Kazakhstan (Astana)"
```

```
public static void main(String[] args) {  
    Country usa = new Country("USA", "United States", "Washington");  
    StdOut.println(usa);  
} // main()
```

```
// read in data
```

```
In infile = new In("countries.csv");
```

```
int n = Integer.parseInt(infile.readLine()); // read number of entries in data file
```

```
Country[] countries = new Country[n]; // Create array of size, n
```

```
for (int i=0; i < n; i++) { // Read from file, one line at a time  
    String s = infile.readLine(); // Split the line (it is a comma separated file)  
    String[] fields = s.split(","); // Extract the relevant fields
```

```
    String abbrev3 = fields[2];  
    String name = fields[3];  
    String capital = fields[4]; // Create and store  
    countries[i] = new Country(abbrev3, name, capital);  
}
```

```
for (int i=0; i < countries.length; i++) // Print out the data  
    StdOut.println(countries[i]);
```

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```
public class Capitals {
    public static void main(String[] args) {
        // Read the data

        In in = new In("countries.csv");
        int n = Integer.parseInt(in.readLine());

        Country[] countries = new Country[n];

        for (int i = 0; i < countries.length; i++) {
            . . .
        }

        // Play the guessing game
        System.out.printf("Greetings!\n");
        System.out.printf("Lets play a game...\n");
        System.out.printf("I will give you the name of a country and you will
                           have to guess its capital\n");

        System.out.println("OK, here we go...\n\n");
        boolean gameOver = false;

        // Keeping scores...
        int score = 0;
        int nQuestions = 0;

        // The game loop
        while (!gameOver) {
            // Pick a country
            // Ask for its capital
            // Inform about the result and keep score
            // Play again?
        }

        // Done...
        System.out.printf("\nYour score:\n");
        System.out.printf("You got %d correct out of %d questions.\n",
                           score, nQuestions);

        System.out.println("Good game!\n");

    } // main()
} // Capitals
```

19 Lab#10 review

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```
public class Capitals {
    public static void main(String[] args) {
        // Read the data
        In in = new In("countries.csv");
        int n = Integer.parseInt(in.readLine());
        Country[] countries = new Country[n];
        for (int i = 0; i < countries.length; i++) {
            String s = in.readLine();
            // StdOut.println(s);
            String[] fields = s.split(",");
            String abbrev3 = fields[2];
            String name = fields[3];
            String capital = fields[4];
            countries[i] = new Country(abbrev3, name, capital);
        }
        // Play the guessing game
        System.out.printf("Greetings!\n");
        System.out.printf("Lets play a game...\n");
        System.out.printf("I will give you the name of a country and you will
                            have to guess its capital\n");

        System.out.println("OK, here we go...\n\n");
        boolean gameOver = false;
        int score = 0;
        int nQuestions = 0;
        while (!gameOver) {
            // Pick a country
            Country c = countries[(int) (Math.random()*countries.length)];
            // Ask for its capital
            System.out.printf("What is the capital of %s? ", c.getName());
            String answer = StdIn.readString();
            nQuestions++;
            // Inform about the result and keep score
            if (answer.toLowerCase().equals(c.getCapital().toLowerCase())) {
                System.out.printf("You are correct!\n");
                System.out.printf("The capital of %s is indeed \n",
                                    c.getName(), answer);

                score++;
            }
            else {
                System.out.printf("Sorry, that is not correct!\n");
                System.out.printf("The capital of %s is %s.\n",
                                    c.getName(), c.getCapital());
            }
            // Play again?
            System.out.printf("\nPlay again? ");
            answer = StdIn.readString();
            if (answer.toLowerCase().equals("no"))
                gameOver = true;
        }
        System.out.printf("\nYour score:\n");
        System.out.printf("You got %d correct out of %d questions.\n",
                            score, nQuestions);

        System.out.println("Good game!\n");
    } // main()
} // Capitals
```