CSE 5345/7345

Homework A02. Not for grading.

A. Write a Java class that includes an enum of the form:

```
enum ProgLang {
  java, cpp, ruby, perl, php, fortran;
}
```

(feel free to add your own languages)

with a static main method that:

- displays a prompt that asks the user to enter an integer
- creates an instance of BufferedReader based on System.in (as discussed in class and shown in the Java ArrayList example)
- uses the BufferedReader to read in a string
- NOTE: the compiler will force you to deal with the fact that the BufferedReader constructor may throw an IOException. Add code to deal with the possible exception (hint: try..catch)
- converts the string to an integer (hint: use one of the parseInt methods)
- uses the integer as an index into array returned by: ProgLang.values() to display the name of the associated programming language.
    - for example: if the user types 2, display "ruby"

As long as the user enters a valid integer and that integer is from 0 to the max range of enums, all should work fine. BUT, the program is not robust -- able to deal with bad input.

Try the following:

- enter a non-integer and examine the type of exception thrown
- enter a negative or really large integer and examine the type of exception thrown
- fix the program so that these exceptions are not thrown and your program terminates gracefully when bad input is provided

B. ArrayList

- Add a static ArrayList to the program (why static?)
- `static ArrayList<String> myArr = new ArrayList<String>();`
- `Add some string values using myArr.add("...");`
- `Prompt the user for a String (just as in Part A)`
- `Look up the API for ArrayList and select the best method to determine if the user string is located in the ArrayList, and display a message that indicates whether the string is in the ArrayList.`
- `Search for the same string in the enum and display a message indicating whether the user string matches the string value of`

```
any of the enums. (hint: look at the API for enums and find a
method that will give you the string value of the enum; then use
the String equals method to compare Strings)
```

Inquiring Minds want to know:

```
If you use == to compare the values, you will NOT get a match. Why?
```

C. Write a Hello World Servlet and deploy it.

Write and Test from NetBeans

- Write a Java servlet that says "Hello World" (or whatever message you like)
- In NetBeans, create a new project that is of type Web Application.
- Under SourcePackages, create a new package. Name it yourname.org.
- Right click on the package, select new and choose Servlet.
- Remove the comments and create some output.
- Run the servlet via the Run command. You should see a browser window open with your output.

Deploy a war file of your servlet.

- Make certain that your project is the main project. Right click on your project and select Set as Main Project.
- Under the Run menu select Clean and Build Main Project. This will generate your war file in the dist folder of your project directory.

Locate your project folder and your .war file

- Right click on your project and select Properties to see the location of your Project Folder.
- Navigate to the folder and locate the dist directory
- You should find your project war file.

Deploy

- Use WinSCP to login to neo.engr.smu.edu
- Work your way up to the root directory of neo. Move to the usr directory. Then move to the tomcat directory. Move to the webapps directory.
- Copy your .war file to this directory. (/usr/tomcat/webapps)
- In a few seconds you should see a folder with the name of your war file.
- Assuming your war file is called myproj.war, execute your servlet from a browser by typing: http://neo.engr.smu.edu:8080/myproj
- Congratulate yourself. You have deployed a servlet on the web.