

Day 6 - Programs at Bootcamp

Section B - Functions and Libraries :- Creating Libraries

Libraries - We refer to a module whose methods are primarily intended for use by many other programs as a library.

Clients - We use the term client to refer to a program that calls a given library method.

APIs - Programmers normally think in terms of a contract between the client and the implementation that is a clear specification of what the method is to do.

Implementations - We use the term implementation to describe the Java code that implements the methods in an API.

Here we will define com.bridgelabz.lib package and create [bLib.jar](#) Library containing following program. The goal is to create a jar file as well as JavaDoc, hence ensure commenting based on JavaDoc specification. You can follow PriceChecker.java or the StdRandom.java program for JavaDoc spec.

1. Create Random numbers class [BLRandom.java](#) for generating random numbers from various distributions. Refer [StdRandom.java](#) for creating BLRandom class. This has following methods

```
public class StdRandom
```

void setSeed(long seed)	<i>set the seed for reproducible results</i>
int uniform(int n)	<i>integer between 0 and n-1</i>
double uniform(double lo, double hi)	<i>real between lo and hi</i>
boolean bernoulli(double p)	<i>true with probability p</i>
double gaussian()	<i>normal, mean 0, standard deviation 1</i>
double gaussian(double mu, double sigma)	<i>normal, mean mu, standard deviation sigma</i>
int discrete(double[] probabilities)	<i>i with probability probabilities[i]</i>
void shuffle(double[] a)	<i>randomly shuffle the array a[]</i>

Day 6 - Programs at Home

Section B - Functions and Libraries :- Creating Libraries

1. Add [StringFunctions.java](#) and [MathFunctions.java](#) to com.bridgelabz.lib package to become part of bLib Library,
2. Add [StopWatch.java](#) an utility class to measure the running time of a program. This class has start time attribute and methods to stop and measure elapsed time. Refer [Stopwatch.java](#) program to create your own. This class is part of bLib Library,
3. Create Standard output class [BLStdOut.java](#) part of bLib to encapsulate Java's System.out.print() and System.out.println() methods and provide following methods. Refer [StdOut.java](#) for further details.

```
public class StdOut
```

<code>void print(String s)</code>	<i>print s to standard output</i>
<code>void println(String s)</code>	<i>print s and a newline to standard output</i>
<code>void println()</code>	<i>print a newline to standard output</i>
<code>void printf(String format, ...)</code>	<i>print the arguments to standard output, as specified by the format string format</i>