

LAB # 4

Start, Sleep and Stop methods of multithreading

OBJECTIVE:

Understanding concurrency by implementing start, sleep and stop thread functions.

Lab Task:

By using start, stop and sleep methods of threading, print alphabets of English from A-Z. (Hint: use `math.random` method for getting random numbers and then convert them into characters, print 26 characters under run method loop with fluctuating visualization through sleep method).

Code:-

```
Task1.java X
1 package Lab4;
2 public class Task1 {
3     public static void main(String[] args) {
4         AlphabetThread alphabetThread = new AlphabetThread();
5         alphabetThread.start();
6         try {
7             alphabetThread.join();
8         } catch (InterruptedException e) {
9             e.printStackTrace();
10        }
11        System.out.println("Thread t1 is stopped (unsafe method for demo only).");
12        alphabetThread.interrupt();
13        System.out.println("\nPrinting alphabets again in order:");
14        for (char ch = 'A'; ch <= 'Z'; ch++) {
15            System.out.print(ch + " ");
16        }
17        System.out.println();
18    }
19    class AlphabetThread extends Thread {
20        @Override
21        public void run() {
22            for (char ch = 'A'; ch <= 'Z'; ch++) {
23                if (Thread.interrupted()) {
24                    return;
25                }
26                try {
27                    System.out.print(ch + " ");
28                    int delay = (int) (Math.random() * 400) + 100;
29                    Thread.sleep(delay);
30                } catch (InterruptedException e) {
31                    return;
32                }
33            }
34            System.out.println("\nAlphabet sequence completed.");
35        }
36    }
37 }
```

Output:-

```
Problems Javadoc Declaration Console Coverage
<terminated> Task1 (4) [Java Application] C:\Program Files\Java\jdk-22\bin\javaw.exe
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Alphabet sequence completed.
Thread t1 is stopped (unsafe method for demo only).

Printing alphabets again in order:
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
```