

P-04

CSIC - P436 | *Brandon Young*

Source Code

```
import java.io.File;
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.IOException;

public class P04 {
    public static void main(String[] args) {

        try {
            File f = new File(args[0]);
            CubbyHole vowelsCub_1 = new CubbyHole();
            CubbyHole consonantCub_2 = new CubbyHole();
            Producer apple = new Producer(vowelsCub_1, consonantCub_2, f);
            Consumer banana = new Consumer(vowelsCub_1);
            Consumer carrot = new Consumer(consonantCub_2);

            apple.start();
            banana.start();
            carrot.start();
        } catch (Exception e) {
            System.out.println(e);
        }

    }
}

class CubbyHole {
    private char contents;
    private boolean ready = false;

    public synchronized char get() {
        while (ready == false) {
            try {
                wait();
            } catch (InterruptedException e) {
            }
        }
        ready = false;
        notifyAll();
        return contents;
    }

    public synchronized void put(char value) {
        while (ready == true) {
```

```

        try {
            wait();
        } catch (InterruptedException e) {
        }
    }
    contents = value;
    ready = true;
    notifyAll();
}
}

class Consumer extends Thread {
    private CubbyHole cubbyhole;
    private char character;

    public Consumer(CubbyHole data) {
        cubbyhole = data;
    }

    public void run() {
        do {
            character = cubbyhole.get();
            System.out.println("Consumer using " + this.cubbyhole + " recieved: "
+ character);
        } while (character != '.');
    }
}

class Producer extends Thread {

    private CubbyHole bananaCub_1;
    private CubbyHole carrotCub_2;
    private File file;

    public Producer(CubbyHole c1, CubbyHole c2, File f) {
        bananaCub_1 = c1;
        carrotCub_2 = c2;
        file = f;
    }

    public void run() {
        try {
            FileReader f = new FileReader(file);
            BufferedReader b = new BufferedReader(f);
            int c = 0;
            while ((c = b.read()) != -1)
            {
                char character = (char) c;
                switch (character) {
                    case 'a':
                        bananaCub_1.put('a');
                        System.out.println('a');
                        break;

```

```

        case 'e':
            bananaCub_1.put('e');
            System.out.println('e');
            break;
        case 'i':
            bananaCub_1.put('i');
            System.out.println('i');
            break;
        case 'o':
            bananaCub_1.put('o');
            System.out.println('o');
            break;
        case 'u':
            bananaCub_1.put('u');
            System.out.println('u');
            break;
        default:
            carrotCub_2.put(character);
            System.out.println("Consenant");
            ;
    }
}
b.close();
f.close();
bananaCub_1.put('.');
carrotCub_2.put('.');
} catch (Exception e) {
    System.out.println(e);
}
}
}

```

Running the program

```

javac P04.java
java P04

```

Outputs

```

Consenant
e
Consenant
o
Consumer using CubbyHole@202044d5 recieved: h
Consumer using CubbyHole@6ae01c16 recieved: e
Consumer using CubbyHole@202044d5 recieved: l
Consumer using CubbyHole@202044d5 recieved: h
Consenant

```

Consumer using CubbyHole@6ae01c16 recieved: o
e
Consumer using CubbyHole@6ae01c16 recieved: e
Consumer using CubbyHole@202044d5 recieved: l
Consenant
o
Consumer using CubbyHole@6ae01c16 recieved: o
Consumer using CubbyHole@202044d5 recieved: h
Consenant
o
Consenant
Consumer using CubbyHole@6ae01c16 recieved: o
a
Consumer using CubbyHole@202044d5 recieved: l
Consenant
Consumer using CubbyHole@6ae01c16 recieved: a
e
Consumer using CubbyHole@202044d5 recieved: t
Consenant
Consenant
Consumer using CubbyHole@6ae01c16 recieved: e
i
Consumer using CubbyHole@202044d5 recieved: s
Consumer using CubbyHole@6ae01c16 recieved: i
Consumer using CubbyHole@202044d5 recieved: t
Consenant
Consumer using CubbyHole@202044d5 recieved: n
Consenant
Consenant
Consumer using CubbyHole@202044d5 recieved: g
Consenant
Consumer using CubbyHole@202044d5 recieved: 1
Consenant
Consumer using CubbyHole@202044d5 recieved: 2
Consenant
Consumer using CubbyHole@202044d5 recieved: 3
Consenant
Consumer using CubbyHole@202044d5 recieved: 1
Consenant
Consumer using CubbyHole@202044d5 recieved: 3
Consenant
Consumer using CubbyHole@202044d5 recieved: 3
Consenant
Consumer using CubbyHole@202044d5 recieved: 4
Consenant
Consumer using CubbyHole@202044d5 recieved: 2

Consenant

Consumer using CubbyHole@202044d5 recieved: 5

Consenant

Consumer using CubbyHole@202044d5 recieved: 6

Consenant

Consumer using CubbyHole@202044d5 recieved: 5

Consumer using CubbyHole@202044d5 recieved: 6

Consenant

Consenant

Consumer using CubbyHole@202044d5 recieved: 7

Consenant

Consumer using CubbyHole@202044d5 recieved: 7

Consenant

Consumer using CubbyHole@202044d5 recieved: 8

Consenant

Consumer using CubbyHole@202044d5 recieved: 5

Consenant

Consumer using CubbyHole@202044d5 recieved: .

Consumer using CubbyHole@6ae01c16 recieved: .