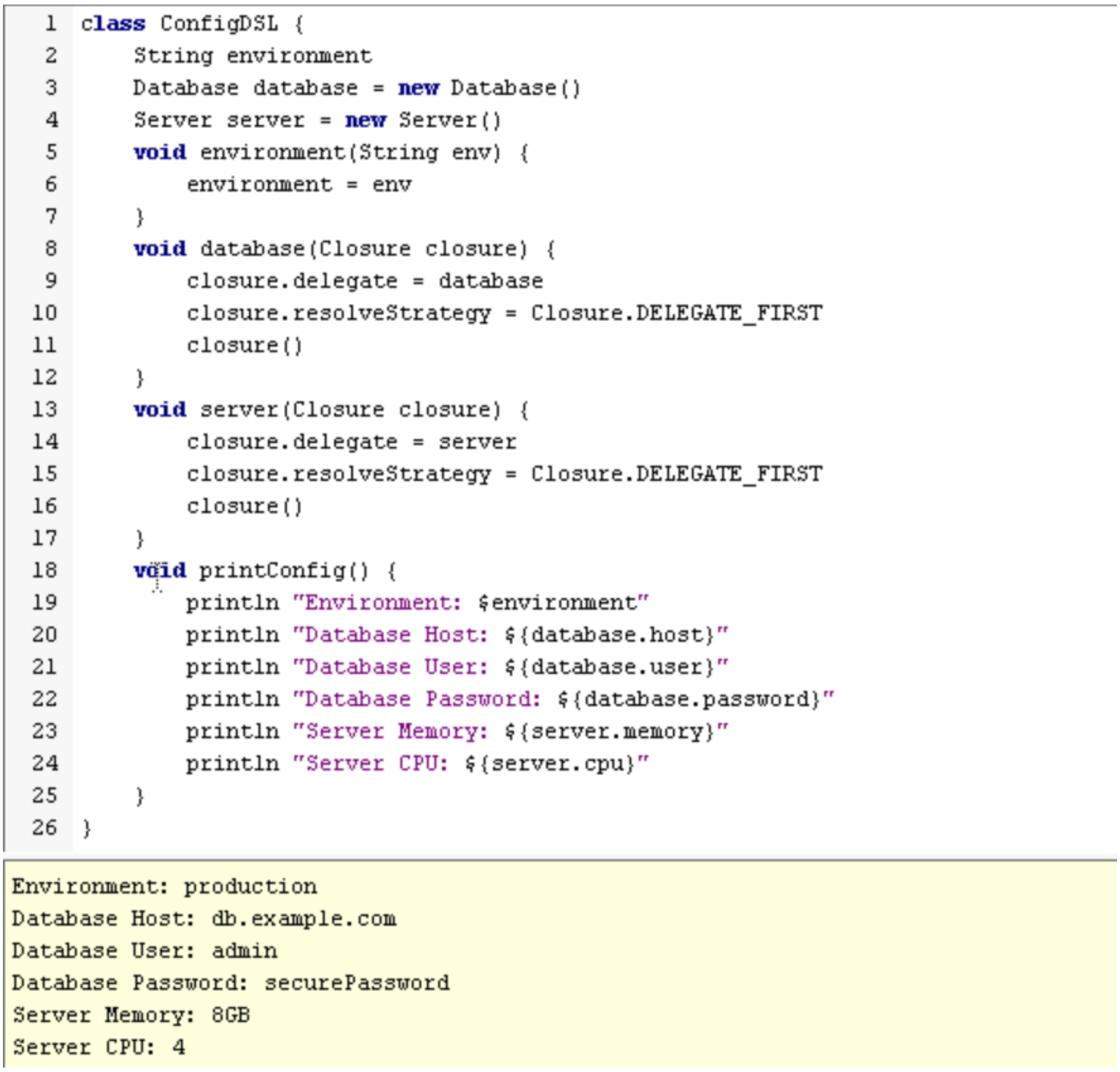
GROOVY CASE STUDIES

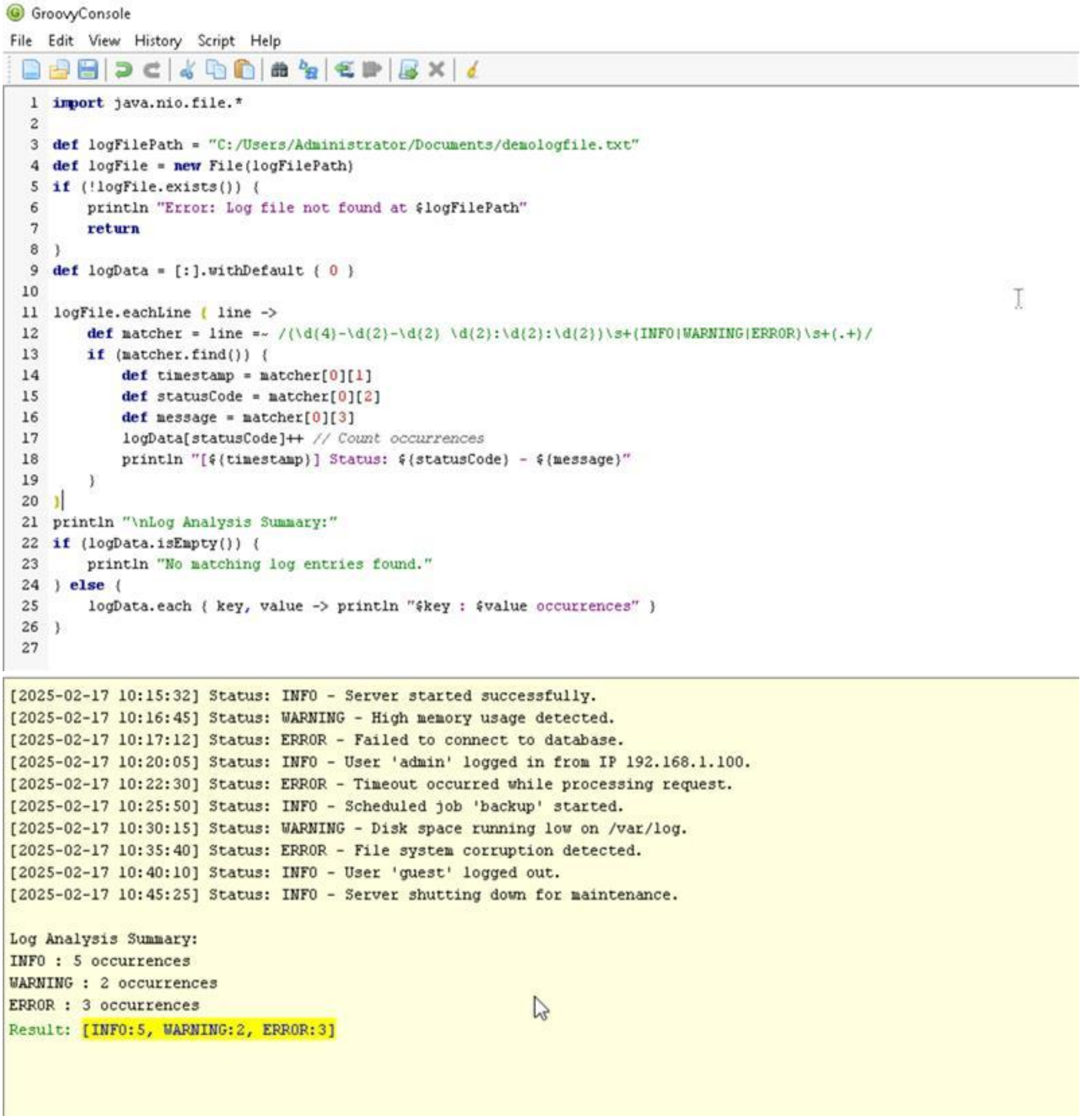
1. DSL :



```
class ConfigDSL {
    String environment
    Database database = new Database()
    Server server = new Server()
    void environment(String env) {
        environment = env
    }
    void database(Closure closure) {
        closure.delegate = database
        closure.resolveStrategy = Closure.DELEGATE_FIRST
        closure()
    }
    void server(Closure closure) {
        closure.delegate = server
        closure.resolveStrategy = Closure.DELEGATE_FIRST
        closure()
    }
    void printConfig() {
        println "Environment: $environment"
        println "Database Host: ${database.host}"
        println "Database User: ${database.user}"
        println "Database Password: ${database.password}"
        println "Server Memory: ${server.memory}"
        println "Server CPU: ${server.cpu}"
    }
}
```

```
Environment: production
Database Host: db.example.com
Database User: admin
Database Password: securePassword
Server Memory: 8GB
Server CPU: 4
```

2. LOG FILE ANALYZER:



```groovy
import java.nio.file.*

def logFilePath = "C:/Users/Administrator/Documents/demologfile.txt"
def logFile = new File(logFilePath)
if (!logFile.exists()) {
    println "Error: Log file not found at $logFilePath"
    return
}
def logData = [:].withDefault { 0 }

logFile.eachLine { line ->
    def matcher = line =~ /(\d{4}-\d{2}-\d{2} \d{2}:\d{2}:\d{2})\s+(INFO|WARNING|ERROR)\s+(.+)/
    if (matcher.find()) {
        def timestamp = matcher[0][1]
        def statusCode = matcher[0][2]
        def message = matcher[0][3]
        logData[statusCode]++ // Count occurrences
        println "[${timestamp}] Status: ${statusCode} - ${message}"
    }
}
println "\nLog Analysis Summary:"
if (logData.isEmpty()) {
    println "No matching log entries found."
} else {
    logData.each { key, value -> println "$key : $value occurrences" }
}
```

```
[2025-02-17 10:15:32] Status: INFO - Server started successfully.
[2025-02-17 10:16:45] Status: WARNING - High memory usage detected.
[2025-02-17 10:17:12] Status: ERROR - Failed to connect to database.
[2025-02-17 10:20:05] Status: INFO - User 'admin' logged in from IP 192.168.1.100.
[2025-02-17 10:22:30] Status: ERROR - Timeout occurred while processing request.
[2025-02-17 10:25:50] Status: INFO - Scheduled job 'backup' started.
[2025-02-17 10:30:15] Status: WARNING - Disk space running low on /var/log.
[2025-02-17 10:35:40] Status: ERROR - File system corruption detected.
[2025-02-17 10:40:10] Status: INFO - User 'guest' logged out.
[2025-02-17 10:45:25] Status: INFO - Server shutting down for maintenance.

Log Analysis Summary:
INFO : 5 occurrences
WARNING : 2 occurrences
ERROR : 3 occurrences
Result: [INFO:5, WARNING:2, ERROR:3]
```