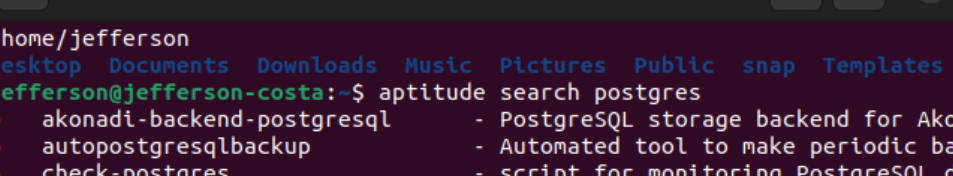


**T03-Instalação, configuração, execução do JDBC**  
**Jefferson Cristino da Costa - 11821BSI227**

## 1 Instalar o programa ANT *sudo apt-get install aptitude*

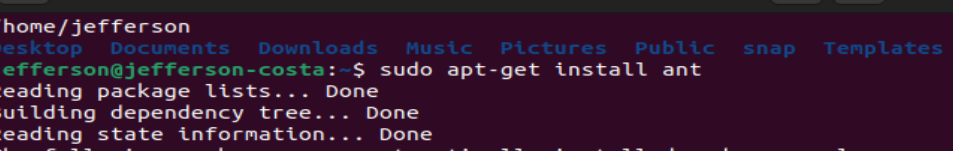
```
jefferson@jefferson-costa: ~  
/home/jefferson  
Desktop Documents Downloads Music Pictures Public snap Templates Videos  
jefferson@jefferson-costa:~$ sudo apt-get install aptitude  
[sudo] password for jefferson:  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
aptitude is already the newest version (0.8.13-3ubuntu1).  
The following packages were automatically installed and are no longer required:  
  apache2 apache2-bin apache2-data apache2-utils libapache2-mod-wsgi-py3  
  libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap pgadmin4-web  
Use 'sudo apt autoremove' to remove them.  
0 upgraded, 0 newly installed, 0 to remove and 18 not upgraded.  
jefferson@jefferson-costa:~$
```

## 2.1 aptitude search postgres



```
jefferson@jefferson-costa: ~  
/home/jefferson  
Desktop Documents Downloads Music Pictures Public snap Templates Videos  
jefferson@jefferson-costa:~$ aptitude search postgres  
p   akonadi-backend-postgresql      - PostgreSQL storage backend for Akonadi  
p   autopostgresqlbackup            - Automated tool to make periodic backups of  
p   check-postgres                  - script for monitoring PostgreSQL databases  
p   cl-postgres                      - Low-level client library for PostgreSQL  
p   cl-sql-postgresql               - C/SQL database backend, PostgreSQL via lib  
p   cl-sql-postgresql-socket        - C/SQL database backend, PostgreSQL via soc  
p   clisp-module-postgresql         - GNU CLISP module that adds a PostgreSQL in  
p   courier-authlib-postgresql      - PostgreSQL support for the Courier authent  
p   eekboek-db-postgresql           - PostgreSQL database driver for EekBoek  
p   freeradius-postgresql           - PostgreSQL module for FreeRADIUS server  
p   gambas3-gb-db-postgresql        - PostgreSQL driver for the Gambas database  
p   gnustep-dl2-postgresql-adaptor  - gnustep-dl2 adaptor to connect to Postgres  
v   haskell-hdbc-postgresql-doc     -
```

## 2.2 `sudo apt-get install ant`

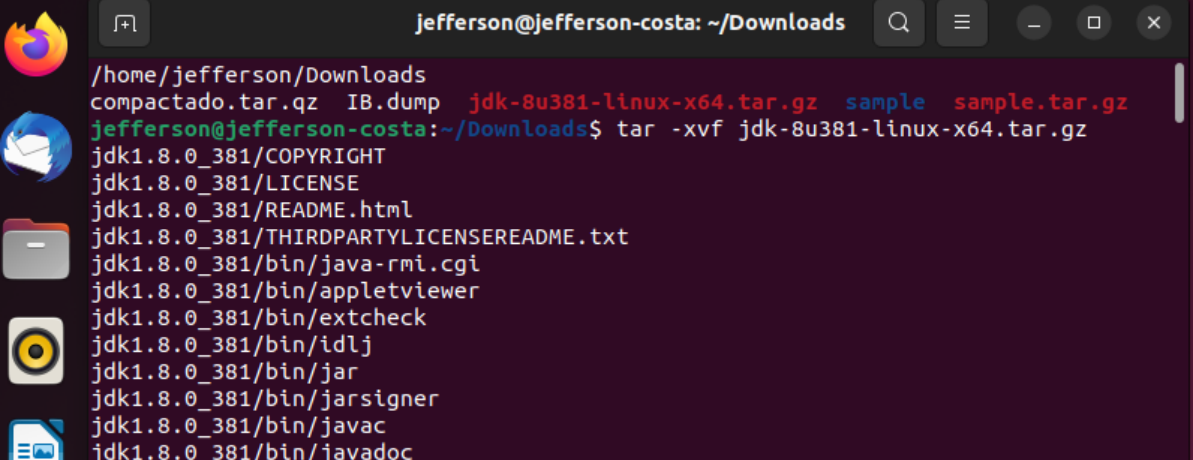


The terminal window shows the user 'jefferson' at 'jefferson@jefferson-costa: ~'. The user runs the command 'sudo apt-get install ant'. The terminal output shows the package lists being read, the dependency tree being built, and the state information being read. It then lists the packages to be installed, including 'apache2', 'apache2-bin', 'apache2-data', 'apache2-utils', 'libapache2-mod-wsgi-py3', 'libapr1', 'libaprutil1', 'libaprutil1-dbd-sqlite3', 'libaprutil1-ldap', and 'pgadmin4-web'. It also shows the additional packages to be installed: 'ant-optional', 'ca-certificates-java', 'default-jre-headless', 'java-common', and 'openjdk-11-jre-headless'. Finally, it lists suggested packages: 'ant-doc', 'default-jdk', 'java-compiler', 'java-sdk', 'antlr', 'javacc', 'junit', 'junit4', 'jython', 'libactivation-java', 'libbcel-java', 'libbsf-java', 'libcommons-logging-java', 'libcommons-net-java', 'libmail-java', 'libjaxp1.3-java', and 'libjdepend-java'.

```
jefferson@jefferson-costa: ~  
/home/jefferson  
Desktop Documents Downloads Music Pictures Public snap Templates Videos  
jefferson@jefferson-costa:~$ sudo apt-get install ant  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following packages were automatically installed and are no longer required:  
  apache2 apache2-bin apache2-data apache2-utils libapache2-mod-wsgi-py3  
  libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap pgadmin4-web  
Use 'sudo apt autoremove' to remove them.  
The following additional packages will be installed:  
  ant-optional ca-certificates-java default-jre-headless java-common  
  openjdk-11-jre-headless  
Suggested packages:  
  ant-doc default-jdk | java-compiler | java-sdk antlr javacc junit junit4  
  jython libactivation-java libbcel-java libbsf-java libcommons-logging-java  
  libcommons-net-java libmail-java libjaxp1.3-java libjdepend-java
```

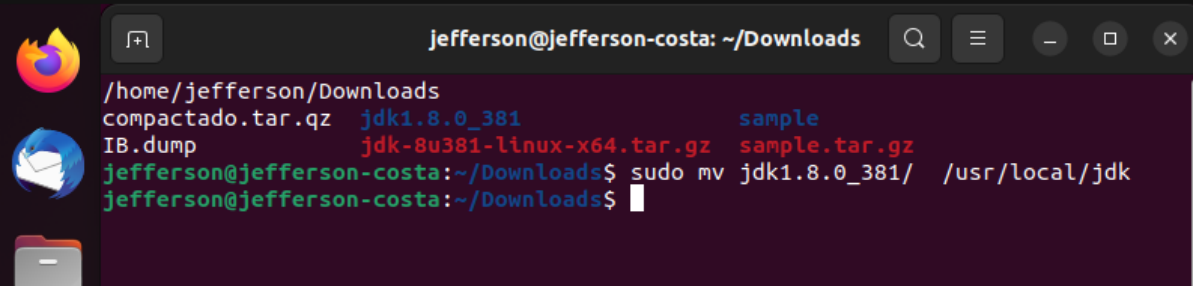
## 2 Instalação JDK

### 2.1 Descompacta o arquivo



```
jefferson@jefferson-costa: ~/Downloads
/home/jefferson/Downloads
compactado.tar.qz IB.dump jdk-8u381-linux-x64.tar.gz sample sample.tar.gz
jefferson@jefferson-costa:~/Downloads$ tar -xvf jdk-8u381-linux-x64.tar.gz
jdk1.8.0_381/COPYRIGHT
jdk1.8.0_381/LICENSE
jdk1.8.0_381/README.html
jdk1.8.0_381/THIRDPARTYLICENSEREADME.txt
jdk1.8.0_381/bin/java-rmi.cgi
jdk1.8.0_381/bin/appletviewer
jdk1.8.0_381/bin/extcheck
jdk1.8.0_381/bin/ldlj
jdk1.8.0_381/bin/jar
jdk1.8.0_381/bin/jarsigner
jdk1.8.0_381/bin/javac
jdk1.8.0_381/bin/javadoc
```

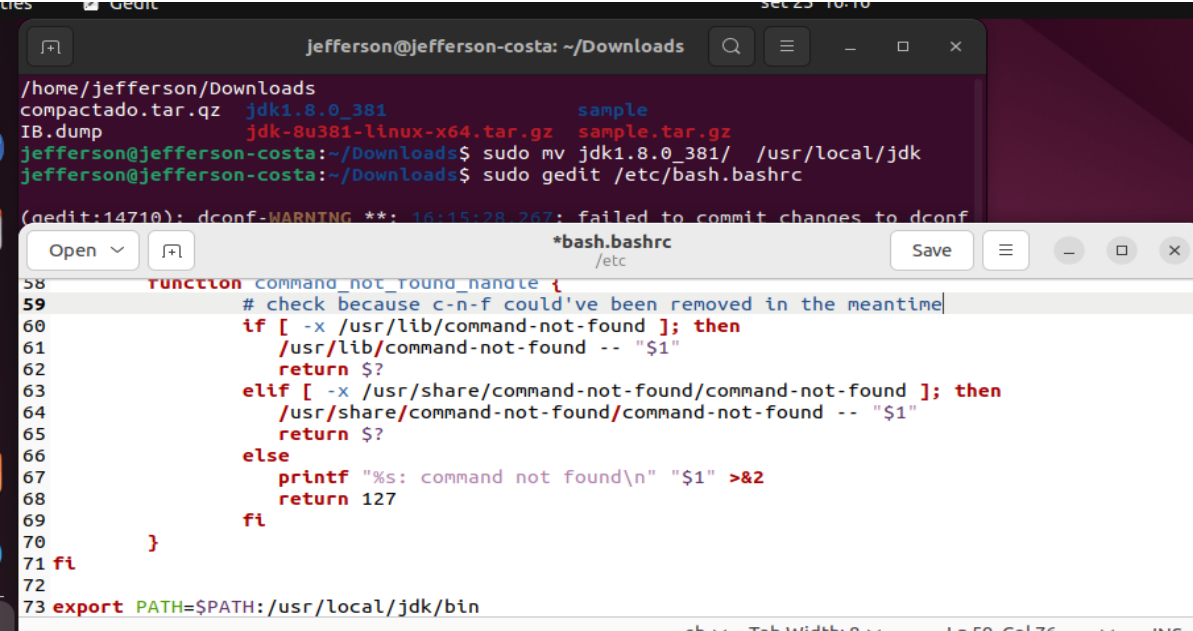
### 2.2 Mover a pasta descompactada para a pasta /usr/local/ com o comando: `sudo mv jdk1.8.0_381/ /usr/local/jdk`



```
jefferson@jefferson-costa: ~/Downloads
/home/jefferson/Downloads
compactado.tar.qz jdk1.8.0_381 sample
IB.dump jdk-8u381-linux-x64.tar.gz sample.tar.gz
jefferson@jefferson-costa:~/Downloads$ sudo mv jdk1.8.0_381/ /usr/local/jdk
jefferson@jefferson-costa:~/Downloads$
```

### 2.3 Editar o arquivo /etc/bash.bashrc para incluir o caminho dos arquivos da nova versão do java

#### 2.3.1 `sudo gedit /etc/bash.bashrc & export PATH=$PATH:/usr/local/jdk/bin`



```
jefferson@jefferson-costa: ~/Downloads
/home/jefferson/Downloads
compactado.tar.qz jdk1.8.0_381 sample
IB.dump jdk-8u381-linux-x64.tar.gz sample.tar.gz
jefferson@jefferson-costa:~/Downloads$ sudo mv jdk1.8.0_381/ /usr/local/jdk
jefferson@jefferson-costa:~/Downloads$ sudo gedit /etc/bash.bashrc
(gedit:14710): dconf-WARNING **: 16:15:28.267: failed to commit changes to dconf

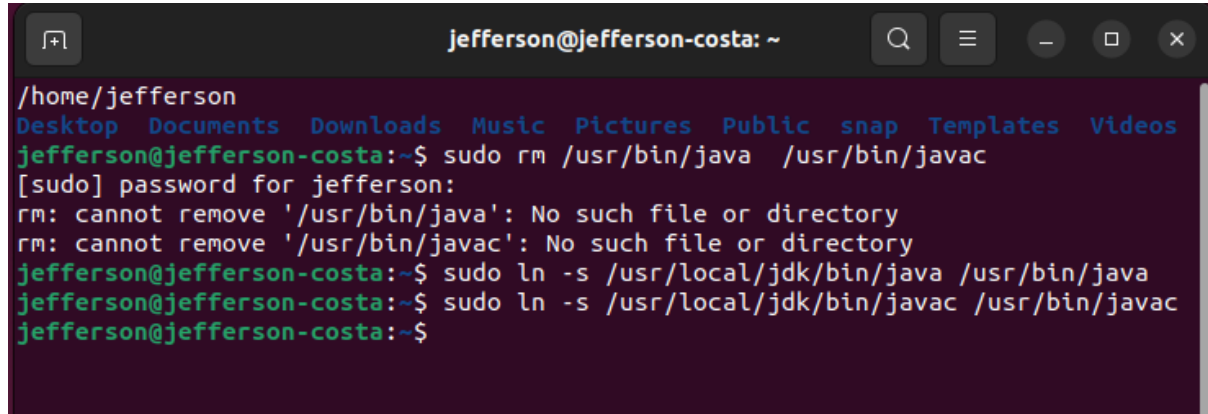
*bash.bashrc
/etc
58 function command_not_found_handle {
59     # check because c-n-f could've been removed in the meantime
60     if [ -x /usr/lib/command-not-found ]; then
61         /usr/lib/command-not-found -- "$1"
62         return $?
63     elif [ -x /usr/share/command-not-found/command-not-found ]; then
64         /usr/share/command-not-found/command-not-found -- "$1"
65         return $?
66     else
67         printf "%s: command not found\n" "$1" >&2
68         return 127
69     fi
70 }
71 fi
72
73 export PATH=$PATH:/usr/local/jdk/bin
```

3 Remover os links dos programas java e javac que existem para a pasta etc/alternatives

```
sudo rm /usr/bin/java /usr/bin/javac
```

```
sudo ln -s /usr/local/jdk/bin/java /usr/bin/java
```

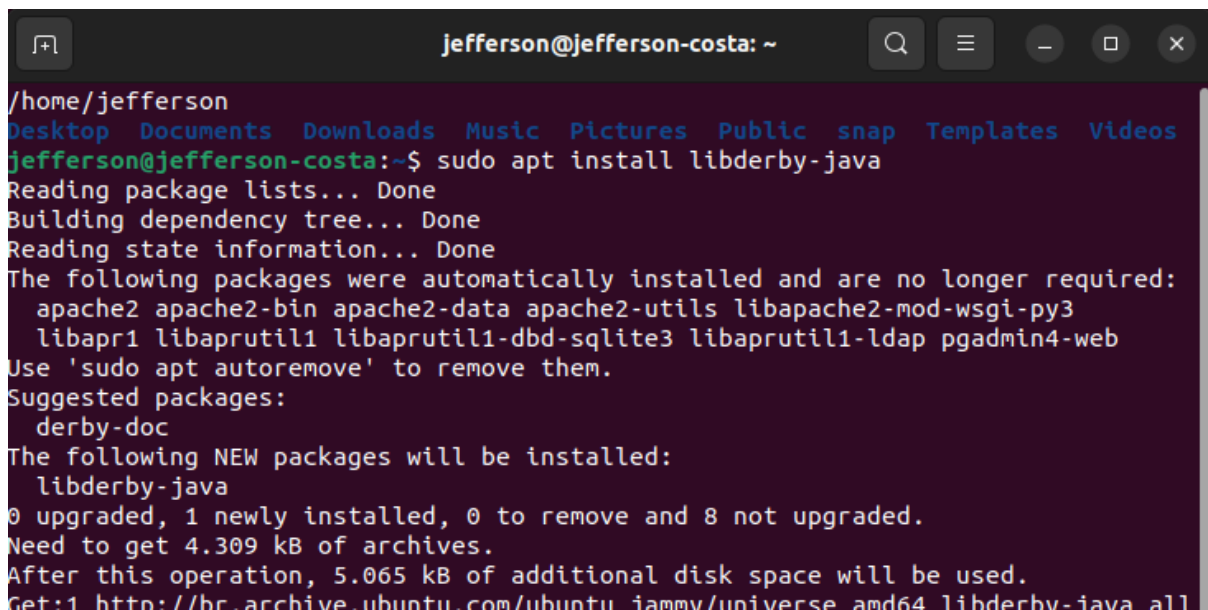
```
sudo ln -s /usr/local/jdk/bin/javac /usr/bin/javac
```



```
jefferson@jefferson-costa: ~  
/home/jefferson  
Desktop Documents Downloads Music Pictures Public snap Templates Videos  
jefferson@jefferson-costa:~$ sudo rm /usr/bin/java /usr/bin/javac  
[sudo] password for jefferson:  
rm: cannot remove '/usr/bin/java': No such file or directory  
rm: cannot remove '/usr/bin/javac': No such file or directory  
jefferson@jefferson-costa:~$ sudo ln -s /usr/local/jdk/bin/java /usr/bin/java  
jefferson@jefferson-costa:~$ sudo ln -s /usr/local/jdk/bin/javac /usr/bin/javac  
jefferson@jefferson-costa:~$
```

4 Instalação da biblioteca de acesso do java ao banco de dados DERBY

```
sudo apt install libderby-java
```



```
jefferson@jefferson-costa: ~  
/home/jefferson  
Desktop Documents Downloads Music Pictures Public snap Templates Videos  
jefferson@jefferson-costa:~$ sudo apt install libderby-java  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following packages were automatically installed and are no longer required:  
  apache2 apache2-bin apache2-data apache2-utils libapache2-mod-wsgi-py3  
  libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap pgadmin4-web  
Use 'sudo apt autoremove' to remove them.  
Suggested packages:  
  derby-doc  
The following NEW packages will be installed:  
  libderby-java  
0 upgraded, 1 newly installed, 0 to remove and 8 not upgraded.  
Need to get 4.309 kB of archives.  
After this operation, 5.065 kB of additional disk space will be used.  
Get:1 http://br.archive.ubuntu.com/ubuntu jammy/universe amd64 libderby-java all
```

5 Instalação do tutorial JDBC

1. mkdir mydir; cd mydir
2. unzip2 ../Downloads/JDBCTutorial.zip

```
jefferson@jefferson-costa: ~/mydir
/home/jefferson/Downloads
compactado.tar.qz  JDBCTutorial.zip  sample
IB.dump           jdk-8u381-linux-x64.tar.gz  sample.tar.gz
jefferson@jefferson-costa:~/Downloads$ cd ..
jefferson@jefferson-costa:~$ mkdir mydir
jefferson@jefferson-costa:~$ cd mydir/
jefferson@jefferson-costa:~/mydir$ unzip ../Downloads/JDBCTutorial.zip
Archive:  ../Downloads/JDBCTutorial.zip
  creating: JDBCTutorial/
  creating: JDBCTutorial/classes/
  creating: JDBCTutorial/classes/com/
  creating: JDBCTutorial/classes/com/oracle/
  creating: JDBCTutorial/classes/com/oracle/tutorial/
  creating: JDBCTutorial/classes/com/oracle/tutorial/jdbc/
  creating: JDBCTutorial/lib/
  creating: JDBCTutorial/properties/
  creating: JDBCTutorial/sql/
  creating: JDBCTutorial/sql/javadb/
  creating: JDBCTutorial/sql/mysql/
```

## 6 Configuração do tutorial para execução

```
Open  jefferson@jefferson-costa: ~/mydir/JDBCTutorial/properties  Save
1 <?xml version="1.0" encoding="UTF-8" ?>
2
3 <project name="Java DB Properties" default="all" basedir=".">
4
5
6   <property name="JAVAC" value="/usr/local/jdk/bin/javac"/>
7   <property name="JAVA" value="/usr/local/jdk/bin/java"/>
8
9
10  <property name="PROPERTIESFILE" value="properties/javadb-sample-properties.xml"/>
11  <property name="JAVADBDRIVER" value="/usr/share/java/derby.jar"/>
12  <property name="XALANDIRECTORY" value="/usr/bin"/>
13
14  <path id="XALAN">
15    <pathelement location="{XALANDIRECTORY}/xalan.jar"/>
16  </path>
17
18  <path id="CLASSPATH">
19    <pathelement location="{XALANDIRECTORY}/xalan.jar"/>
20  </path>
21
22 </project>
```

```
Open  jefferson@jefferson-costa: ~/mydir/JDBCTutorial/properties  Save
1 <?xml version="1.0" encoding="UTF-8" ?>
2 <!DOCTYPE properties SYSTEM "http://java.sun.com/dtd/properties.dtd">
3 <properties>
4
5   <entry key="dbms">derby</entry>
6   <entry key="jar_file">/home/jefferson/mydir/JDBCTutorial/lib/JDBCTutorial.jar</entry>
7   <entry key="driver">org.apache.derby.jdbc.EmbeddedDriver</entry>
8   <entry key="database_name">testdb</entry>
9   <entry key="user_name"></entry>
10  <entry key="password"></entry>
11  <entry key="server_name">localhost</entry>
12  <entry key="port_number">3306</entry>
13
14 </properties>
```

XML Tab Width: 8 Ln 13, Col 1 INS

## 6 Executar o tutorial do JDBC

- cd JDBCTutorial
- ant jar

```
jefferson@jefferson-costa: ~/mydir/JDBCTutorial
/home/jefferson/mydir/JDBCTutorial
build.xml classes lib properties sql src txt xml
jefferson@jefferson-costa:~/mydir/JDBCTutorial$ ant jar
Buildfile: /home/jefferson/mydir/JDBCTutorial/build.xml

compile:
[echo] JDBC Tutorial is using C:\\Java\\jdk1.8.0\\bin\\javac as Java compiler

jar:
[jar] Building jar: /home/jefferson/mydir/JDBCTutorial/lib/JDBCTutorial.jar

BUILD SUCCESSFUL
Total time: 0 seconds
jefferson@jefferson-costa:~/mydir/JDBCTutorial$
```

- ant setup

```
jefferson@jefferson-costa: ~/mydir/JDBCTutorial
/home/jefferson/mydir/JDBCTutorial
build.xml classes lib properties sql src txt xml
jefferson@jefferson-costa:~/mydir/JDBCTutorial$ ant setup
Buildfile: /home/jefferson/mydir/JDBCTutorial/build.xml

setup:

drop-tables:

BUILD FAILED
/home/jefferson/mydir/JDBCTutorial/build.xml:140: The following error occurred while executing this line:
/home/jefferson/mydir/JDBCTutorial/build.xml:83: Class Not Found: JDBC driver com.mysql.cj.jdbc.Driver could not be loaded

Total time: 0 seconds
jefferson@jefferson-costa:~/mydir/JDBCTutorial$
```

- ant runct



```
jefferson@jefferson-costa: ~/mydir/JDBCTutorial
/home/jefferson/mydir/JDBCTutorial
build.xml classes lib properties sql src txt xml
jefferson@jefferson-costa:~/mydir/JDBCTutorial$ ant runc
Buildfile: /home/jefferson/mydir/JDBCTutorial/build.xml

runc:
[java] Set the following properties:
[java] dbms: mysql
[java] driver: com.mysql.cj.jdbc.Driver
[java] dbName: testdb
[java] userName: root
[java] serverName: localhost
[java] portNumber: 3306
[java] Releasing all open resources ...
[java] java.sql.SQLException: No suitable driver found for jdbc:mysql://localhost:3306/
[java]   at java.sql.DriverManager.getConnection(DriverManager.java:689)
[java]   at java.sql.DriverManager.getConnection(DriverManager.java:208)
[java]   at com.oracle.tutorial.jdbc.JDBCTutorialUtilities.getConnection(JDBCTutorialUtilities.java:290)
[java]   at com.oracle.tutorial.jdbc.CoffeesTable.main(CoffeesTable.java:318)
[java] SQLState: 08001
[java] Error Code: 0
[java] Message: No suitable driver found for jdbc:mysql://localhost:3306/

BUILD SUCCESSFUL
Total time: 0 seconds
jefferson@jefferson-costa:~/mydir/JDBCTutorial$
```

- Verifique os tipos de consultas que estão presentes na classe CoffeesTable.java

```
jefferson@jefferson-costa: ~/mydir/JDBCTutorial
/home/jefferson/mydir/JDBCTutorial
build.xml classes lib properties sql src txt xml
jefferson@jefferson-costa:~/mydir/JDBCTutorial$ gedit src/com/oracle/tutorial/jdbc/CoffeesTable.java

CoffeesTable.java
~/mydir/JDBCTutorial/src/com/oracle/tutorial/jdbc

48 public class CoffeesTable {
49
50     private String dbName;
51     private Connection con;
52     private String dbms;
53
54
55     public CoffeesTable(Connection connArg, String dbNameArg, String dbmsArg) {
56         super();
57         this.con = connArg;
58         this.dbName = dbNameArg;
59         this.dbms = dbmsArg;
60     }
61
62
63     public void createTable() throws SQLException {
64         String createString =
65             "create table COFFEES " + "(COF_NAME varchar(32) NOT NULL, " +
66             "SUP_ID int NOT NULL, " + "PRICE numeric(10,2) NOT NULL, " +
67             "SALES integer NOT NULL, " + "TOTAL integer NOT NULL, " +
68             "PRIMARY KEY (COF_NAME), " +
69             "FOREIGN KEY (SUP_ID) REFERENCES SUPPLIERS (SUP_ID))";
70
71         try (Statement stmt = con.createStatement()) {
72             stmt.executeUpdate(createString);
73         } catch (SQLException e) {
74
75         }
76     }
77 }
```

- Para voltar o banco para o seu estado inicial será necessário executar o ant setup novamente.

```
jefferson@jefferson-costa: ~/mydir/JDBCTutorial
/home/jefferson/mydir/JDBCTutorial
build.xml  classes  lib  properties  sql  src  txt  xml
jefferson@jefferson-costa:~/mydir/JDBCTutorial$ ant setup
Buildfile: /home/jefferson/mydir/JDBCTutorial/build.xml

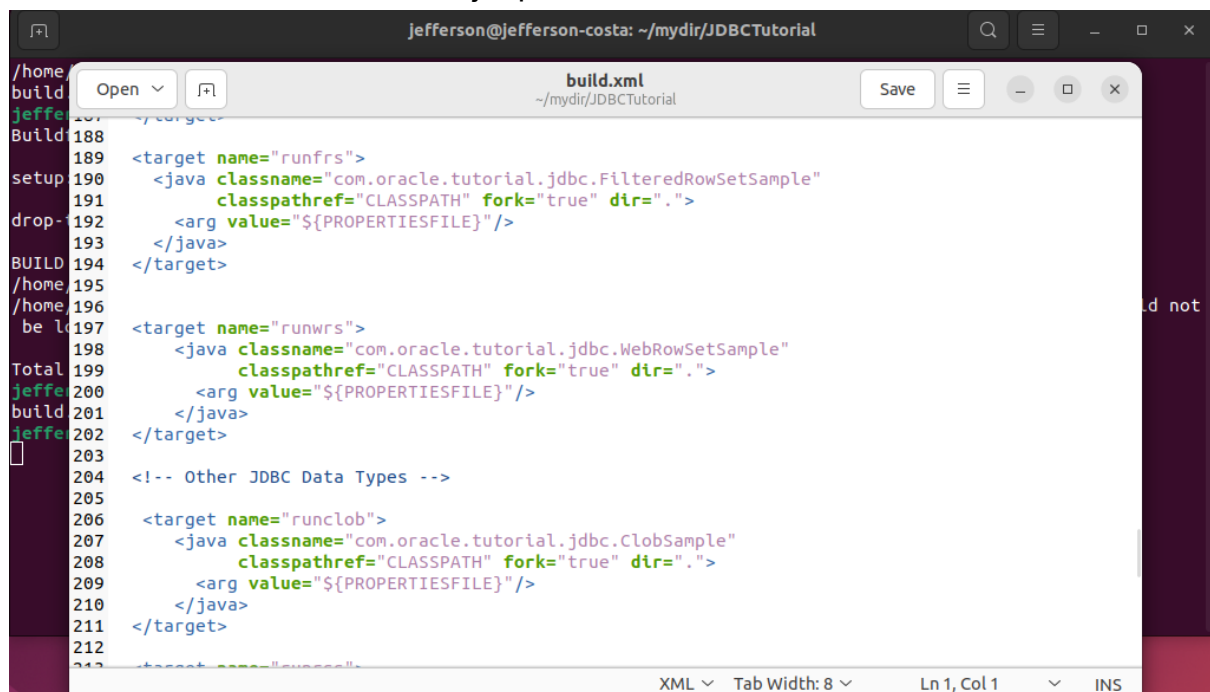
setup:

drop-tables:

BUILD FAILED
/home/jefferson/mydir/JDBCTutorial/build.xml:140: The following error occurred while executing this line:
/home/jefferson/mydir/JDBCTutorial/build.xml:83: Class Not Found: JDBC driver com.mysql.cj.jdbc.Driver could not
be loaded

Total time: 0 seconds
jefferson@jefferson-costa:~/mydir/JDBCTutorial$
```

- Caso você queira expandir o arsenal de comandos do ant para este projeto então terá que editar o arquivo build.xml presente na raiz da pasta JDBCTutorial. Abra-o o veja que comandos existem



```
jefferson@jefferson-costa: ~/mydir/JDBCTutorial
/home/jefferson/mydir/JDBCTutorial
build.xml  classes  lib  properties  sql  src  txt  xml
jefferson@jefferson-costa:~/mydir/JDBCTutorial$ ant setup
Buildfile: /home/jefferson/mydir/JDBCTutorial/build.xml

setup:

drop-tables:

BUILD FAILED
/home/jefferson/mydir/JDBCTutorial/build.xml:140: The following error occurred while executing this line:
/home/jefferson/mydir/JDBCTutorial/build.xml:83: Class Not Found: JDBC driver com.mysql.cj.jdbc.Driver could not
be loaded

Total time: 0 seconds
jefferson@jefferson-costa:~/mydir/JDBCTutorial$
```

```
188
189
190 <target name="runfrs">
191   <java classname="com.oracle.tutorial.jdbc.FilteredRowSetSample"
192     classpathref="CLASSPATH" fork="true" dir=".">
193     <arg value="${PROPERTIESFILE}"/>
194   </java>
195 </target>
196
197 <target name="runwrs">
198   <java classname="com.oracle.tutorial.jdbc.WebRowSetSample"
199     classpathref="CLASSPATH" fork="true" dir=".">
200     <arg value="${PROPERTIESFILE}"/>
201   </java>
202 </target>
203
204 <!-- Other JDBC Data Types -->
205
206 <target name="runclob">
207   <java classname="com.oracle.tutorial.jdbc.ClobSample"
208     classpathref="CLASSPATH" fork="true" dir=".">
209     <arg value="${PROPERTIESFILE}"/>
210   </java>
211 </target>
212
213 <target name="runrs">
```