

Practical Applications in CS I - Session 02.02

2 Getting number of columns

```
public static void main(String[] args) throws SQLException {
    String database = "jdbc:odbc:Driver={Microsoft Access Driver (*.mdb,
*.accdb)};DBQ=D:\\example 01.accdb;";
    Connection conn = DriverManager.getConnection(database, "", "");
    Statement s = conn.createStatement();
    String sqlstr = "SELECT * FROM students";
    s.execute(sqlstr);
    ResultSet rs = s.getResultSet();
    ResultSetMetaData rsMetaData = rs.getMetaData();
    int numberOfColumns = rsMetaData.getColumnCount();
    while ((rs != null) && (rs.next())) {
        for (int i=1;i<=numberOfColumns;i++)
        {
            System.out.print(rs.getString(i) + "\t|");
        }
        System.out.println();
    }
    System.out.println("*****");
};
    }
    s.close(); // Close the statement
    conn.close();
}
}
```

3 update

```
public static void main(String[] args) throws SQLException {
    String database = "jdbc:odbc:Driver={Microsoft Access Driver (*.mdb,
*.accdb)};DBQ=D:\\example 01.accdb;";
    Connection conn = DriverManager.getConnection(database, "", "");
    Statement s = conn.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
ResultSet.CONCUR_UPDATABLE);
```

```
String sqlstr = "SELECT * FROM students";
s.execute(sqlstr);
ResultSet rs = s.getResultSet();
ResultSetMetaData rsMetaData = rs.getMetaData();
int numberOfColumns = rsMetaData.getColumnCount();
Scanner sc = new Scanner(System.in);
String choice;
while (true) {
System.out.println("*****");
    System.out.println("[1] display table contents.");
    System.out.println("[2] show a record.");
    System.out.println("[3] update a record.");
    System.out.println("[Q] to Quit.");
    System.out.print("select an option :");
    choice = sc.next();
    if (choice.charAt(0) == '1') {
        rs.first();
        while ((rs != null) && (rs.next())) {
            for (int i = 1; i <= numberOfColumns; i++) {
                System.out.print(rs.getString(i) + "\t|");
            }
            System.out.println();
        }
        System.out.println("*****");
    }
    } else if (choice.charAt(0) == '2') {
        System.out.printf("Enter record number (1:99):");
        String st = sc.next();
        int rec = Integer.parseInt(st);
        rs.absolute(rec);
        for (int i = 1; i <= numberOfColumns; i++) {
            System.out.print(rs.getString(i) + "\t|");
        }
        System.out.println();
    }
}
```

```

System.out.println("*****");
);
    } else if (choice.charAt(0) == '3') {
        System.out.print("Enter record number :");
        String st = sc.next();
        int rec = Integer.parseInt(st);
        rs.absolute(rec);
        System.out.print("Enter field number :");
        st = sc.next();
        int fld = Integer.parseInt(st);
        System.out.print("Enter field new value :");
        st = sc.next();
        rs.updateString(fld, st);
        rs.updateRow();
    } else if ((choice.charAt(0) == 'q') | (choice.charAt(0) == 'Q')) {
        break;
    } else {
        System.out.print("Invalid choice.");
    }
}
s.close(); // Close the statement
conn.close();
}

```

4 Insert

```

public static void main(String[] args) throws SQLException {
    //Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
    String database = "jdbc:odbc:Driver={Microsoft Access Driver (*.mdb,
*.accdb)};DBQ=D:\\example 01.accdb";
    Connection conn = DriverManager.getConnection(database, "", "");
    Statement s = conn.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE,
ResultSet.CONCUR_UPDATABLE);
    String sqlstr = "SELECT * FROM students";
    s.execute(sqlstr);
    ResultSet rs = s.getResultSet();
}

```

```
ResultSetMetaData rsMetaData = rs.getMetaData();
int numberOfColumns = rsMetaData.getColumnCount();
Scanner sc = new Scanner(System.in);
String choice;
while (true) {

System.out.println("*****");
System.out.println("[1] display table contents.");
System.out.println("[2] show a record.");
System.out.println("[3] update a record.");
System.out.println("[4] insert a record.");
System.out.println("[Q] to Quit.");
System.out.print("select an option :");
choice = sc.next();
if (choice.charAt(0) == '1') {
    rs.first();
    while ((rs != null) && (rs.next())) {
        for (int i = 1; i <= numberOfColumns; i++) {
            System.out.print(rs.getString(i) + "\t");
        }
        System.out.println();
System.out.println("*****");
    }
} else if (choice.charAt(0) == '2') {
    System.out.printf("Enter record number (1:99):");
    String st = sc.next();
    int rec = Integer.parseInt(st);
    rs.absolute(rec);
    for (int i = 1; i <= numberOfColumns; i++) {
        System.out.print(rs.getString(i) + "\t");
    }
    System.out.println();
System.out.println("*****");
} else if (choice.charAt(0) == '3') {
    System.out.print("Enter record number :");
```

```
String st = sc.next();
int rec = Integer.parseInt(st);
rs.absolute(rec);
System.out.print("Enter field number :");
st = sc.next();
int fld = Integer.parseInt(st);
System.out.print("Enter field new value :");
st = sc.next();
rs.updateString(fld, st);
rs.updateRow();
} else if (choice.charAt(0) == '4') {
String st;
rs.moveToInsertRow();
while (true) {
System.out.print("Enter field number (q/Q) to end:");
st = sc.next();
if ((st.charAt(0) == 'Q') || (st.charAt(0) == 'q')) {
rs.insertRow();
break;
}
int fld = Integer.parseInt(st);
System.out.print("Enter field value :");
st = sc.next();
rs.updateString(fld, st);
}
} else if ((choice.charAt(0) == 'q') | (choice.charAt(0) == 'Q')) {
break;
} else {
System.out.print("Invalid choice.");
}
}
s.close(); // Close the statement
conn.close();
}
```