SQL Views Queries

1. **Application Feedback - Code**

```sql
DROP VIEW IF EXISTS ApplicationFeedback;

-- This view retrieves feedback details for job applications, including the applicant's name, the
job title, overall rating, strengths, and areas for improvement.

-- It serves the purpose of providing comprehensive feedback to employers to assess
candidates' performance and areas for improvement.

CREATE VIEW ApplicationFeedback AS

SELECT DISTINCT a.ApplicationID, CONCAT(js.FirstName," ",js.LastName) AS Name, j.Title AS
JobTitle, (f.TechnicalSkillsRating + f.CommunicationSkillsRating + f.TeamFitRating +
f.ProblemSolvingRating) / 4 AS OverallRating, f.Strengths AS CandidateStrengths,
f.Improvements AS CandidateImprovements

FROM Feedback f

INNER JOIN Applications a ON f.ApplicationID = a.ApplicationID

INNER JOIN JobSeekers js ON a.SeekerID = js.SeekerID

INNER JOIN JobListings j ON a.JobID = j.JobID

GROUP BY js.LastName, js.FirstName, a.ApplicationID, j.Title, f.Strengths, f.Improvements

ORDER BY js.LastName ASC;

SELECT * FROM ApplicationFeedback;
```

Output table

ApplicationID	Name	JobTitle	OverallRating	CandidateStrengths	CandidateImprovements
1	Leia Angelo	Environmental Specialist	3.40000	Excellent time management skills	Practice answering behavioral questions more confi...
1	Leia Angelo	Environmental Specialist	4.12500	Good decision-making abilities	NULL
39	Leia Angelo	Senior Quality Engineer	3.75000	Impressive technical knowledge	Work on your body language during the interview
29	Rachel Attow	Design Engineer	3.40000	Strong problem-solving abilities	Work on your body language during the interview
24	Eli Boorer	Senior Quality Engineer	5.07500	Great interpersonal skills	Work on your body language during the interview
24	Eli Boorer	Senior Quality Engineer	4.70000	Strong presentation skills	Work on your body language during the interview
8	Cinderella Buckham	Compensation Analyst	6.72500	Effective project management skills	Work on your body language during the interview
8	Cinderella Buckham	Compensation Analyst	5.37500	Strong presentation skills	Work on your body language during the interview
21	Reid Courcey	Compensation Analyst	5.45000	Exceptional teamwork skills	Improve your communication skills
20	Conroy Cuttin	Account Representative I	5.55000	Positive attitude and strong work ethic	NULL
35	Zara Doohey	Biostatistician II	4.17500	NULL	NULL
35	Zara Doohey	Biostatistician II	4.52500	Outstanding leadership qualities	Work on your body language during the interview
33	Joseito Gallandre	Programmer II	6.07500	Excellent time management skills	Consider seeking additional training or certificat...
33	Joseito Gallandre	Programmer II	2.97500	Exceptional teamwork skills	Improve your communication skills
38	Joseito Gallandre	Compensation Analyst	6.15000	Positive attitude and strong work ethic	Practice answering behavioral questions more confi...
14	Carrie Gronow	Structural Analysis Engineer	4.65000	Excellent customer service skills	Provide more specific examples in your responses
14	Carrie Gronow	Structural Analysis Engineer	5.05000	Outstanding leadership qualities	NULL
22	Carrie Gronow	Account Representative I	4.35000	NULL	Provide more specific examples in your responses
37	Carrie Gronow	Administrative Assistant III	7.15000	Good decision-making abilities	Consider seeking additional training or certificat...
18	Sly Halworth	Assistant Professor	3.35000	Effective project management skills	NULL
18	Sly Halworth	Assistant Professor	6.40000	Exceptional teamwork skills	NULL
18	Sly Halworth	Assistant Professor	6.32500	Great attention to detail	NULL
5	Alexandra Hill	Editor	6.52500	Strong analytical skills	NULL
30	Alexandra Hill	Compensation Analyst	7.10000	Effective project management skills	Consider seeking additional training or certificat...
34	Peter Koene	Compensation Analyst	7.87500	Good decision-making abilities	Practice answering behavioral questions more confi...

Applications   JobSeekers   JobListings   Feedback

2. Employer Recruitment Rate between June to December 2023 – Code

```sql
DROP VIEW IF EXISTS EmployerRecruitmentRateBetweenJuneToDecember2023;

-- This view calculates the recruitment rate for each employer between June and December 2023.

-- It counts the number of new recruits (applications with a status ID of 3) for each employer, providing insights into their hiring activity during the specified period.

CREATE VIEW EmployerRecruitmentRateBetweenJuneToDecember2023 AS

SELECT e.EmployerID, e.CompanyName, COUNT(DISTINCT a.ApplicationID) AS NewRecruits

FROM Employers e

LEFT JOIN JobListings j ON j.EmployerID = e.EmployerID

LEFT JOIN Applications a ON j.JobID = a.JobID

LEFT JOIN ApplicationStatus ast ON a.ApplicationID = ast.ApplicationID

WHERE a.DateApplied BETWEEN '2023-06-01' AND '2023-12-31' AND ast.StatusID = 3

GROUP BY e.EmployerID, e.CompanyName

ORDER BY e.CompanyName ASC;

SELECT * FROM EmployerRecruitmentRateBetweenJuneToDecember2023;
```

Output table

EmployerID	CompanyName	NewRecruits
184	Hane LLC	1
189	Hintz Group	2
199	Volkman, Satterfield and Bauch	1
208	Von-Bailey	1

Employers

ApplicationStatus

3. Job Seeker Application Status – Code

```sql
DROP VIEW IF EXISTS JobSeekerApplicationStatus;

-- This view displays the current application status for each job seeker (including those yet to apply for a job).

-- This helps the recruitment agency track and manage the progress of various job applications.

CREATE VIEW JobSeekerApplicationStatus AS

SELECT js.SeekerID, CONCAT(js.FirstName, " ", js.LastName) AS Name, a.ApplicationID,
jl.Title AS JobTitle, e.CompanyName AS Employer, jst.StatusName AS CurrentStatus

FROM JobSeekers js

LEFT JOIN Applications a ON js.SeekerID = a.SeekerID

LEFT JOIN ApplicationStatus ast ON a.ApplicationID = ast.ApplicationID

LEFT JOIN JobListings jl ON jl.JobID = a.JobID

LEFT JOIN JobStatus jst ON jst.StatusID = ast.StatusID

LEFT JOIN Employers e ON e.EmployerID = jl.EmployerID

ORDER BY js.LastName ASC;

SELECT * FROM JobSeekerApplicationStatus;
```

Output table

SeekerID	Name	ApplicationID	JobTitle	Employer	CurrentStatus
1	Leia Angelo	1	Environmental Specialist	Volkman, Satterfield and Bauch	Rejected
1	Leia Angelo	2	Compensation Analyst	Schmitt-Parisian	Rejected
1	Leia Angelo	39	Senior Quality Engineer	Hintz Group	Pending
57	Clemence Armsby	97	Physical Therapy Assistant	Schmidt, Homenick and MacGyver	Accepted
51	Lily Aspinall	NULL	NULL	NULL	NULL
11	Rachel Attow	29	Design Engineer	Robel Group	Rejected
41	Zoe Barton	NULL	NULL	NULL	NULL
54	William Bassingham	93	Clinical Specialist	Becker-Keeling	Rejected
54	William Bassingham	94	Administrative Assistant III	Hintz Group	Reviewed
54	William Bassingham	105	Professor	Von-Bailey	Reviewed
64	Max Blaxley	NULL	NULL	NULL	NULL
10	Eli Boorer	24	Senior Quality Engineer	Hintz Group	Accepted
10	Eli Boorer	32	Physical Therapy Assistant	Schmidt, Homenick and MacGyver	Rejected
65	Elisabeth Brussels	95	Senior Quality Engineer	Hintz Group	Reviewed
9	Cinderella Buckham	8	Compensation Analyst	Hane LLC	Rejected
9	Cinderella Buckham	23	Compensation Analyst	Hane LLC	Accepted
13	Zoe Burke	91	Assistant Professor	Stehr, Willms and Blick	Reviewed
13	Zoe Burke	111	Software Engineer I	Cartwright-Huel	Rejected
59	Nora Callam	NULL	NULL	NULL	NULL
44	Ellen Cartwright	NULL	NULL	NULL	NULL
52	Mason Cobson	NULL	NULL	NULL	NULL
29	Lara Cooper	26	Clinical Specialist	Cartwright-Huel	Reviewed
15	Reid Courcey	21	Compensation Analyst	Schmitt-Parisian	Reviewed
15	Reid Courcey	103	Clinical Specialist	Cartwright-Huel	Reviewed
56	Damian Crilly	NULL	NULL	NULL	NULL

JobSeekers   Applications   JobListings   Employers   JobStatus

4. Top 15 Highest Scoring Candidates - Code

```sql
DROP VIEW IF EXISTS Top15HighestScoringCandidates;

-- This view retrieves the top fifteen highest scoring candidates based on their overall rating.

-- The overall rating is calculated as an average from their feedback scores in technical skills,
communication skills, team fit, and problem-solving skills.

-- This view serves the purpose of identifying and displaying the most promising candidates
recommended for job opportunities to employers (should they wish to apply again in the
future).

CREATE VIEW Top15HighestScoringCandidates AS

SELECT js.SeekerID, CONCAT(js.FirstName, " ", js.LastName) AS Name,
(f.TechnicalSkillsRating + f.CommunicationSkillsRating + f.TeamFitRating +
f.ProblemSolvingRating) / 4 AS OverallRating

FROM JobSeekers js

INNER JOIN Applications a ON js.SeekerID = a.SeekerID

INNER JOIN Feedback f ON a.ApplicationID = f.ApplicationID

GROUP BY js.FirstName, js.LastName

ORDER BY OverallRating DESC

LIMIT 0, 15;

SELECT * FROM Top15HighestScoringCandidates;
```

Output table

SeekerID	Name	OverallRating
18	Trixie Purcell	7.62500
2	Carrie Gronow	7.15000
8	Alexandra Hill	7.10000
28	Edithe Roscamps	6.47500
3	Sly Halworth	6.32500
7	Regan Nash	6.22500
25	Joseito Gallandre	6.15000
16	Peter Koene	6.00000
27	Orly Reiner	5.92500
22	Terry Potter	5.82500
30	Conroy Cuttin	5.55000
15	Reid Courcey	5.45000
9	Cinderella Buckham	5.37500
19	Caprice Lyons	5.10000
10	Eli Boorer	4.70000

JobSeekers		Feedback

Java database connection

Code snippets

Below demonstrates how I established the database connection in java as per requirement 4:

```java
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
import java.time.LocalDate;
import java.sql.SQLException;
import java.util.InputMismatchException;
import java.util.Scanner;

public class JBDCTest {

        static Scanner input = new Scanner(System.in);

        public static void main(String[] args) {
                try {
                        Connection con = establishDatabaseConnection();
                        System.out.println("Connection established.\n");

                        //methods demonstrating adding a new record and accessing SQL view
                        goes here

                        con.close();
                } catch (SQLException e) {
                        System.err.println("SQLException: " + e.getMessage());
                }
        }

        public static Connection establishDatabaseConnection() throws SQLException {
                String host = "jdbc:mysql://user1.webhosting1.eeecs.qub.ac.uk";
                String port = ":1234/";
                String DB = "mydatabase";
                String username = "user1";
                String password = "t3st@123";
                String urlDB = host + port + DB;
                return DriverManager.getConnection(urlDB, username, password);
        }

        //code demonstrating adding a new record and accessing SQL view goes here

}
```

Output screenshots

```
15⊖     public static void main(String[] args) {
16          try {
17              Connection con = establishDatabaseConnection();
18              System.out.println("Connection established.\n");
19
20              addNewJobSeeker(con);
21
```

```
Console ✕

JDBCTest [Java Application] C:\Apps\eclipse_for_Java\plugins\org.eclipse.justj.openjdk.hotspot.
Connection established.

Inserting a new record into the JobSeekers table
**************************************************
Enter first name:
```

Figure 1 - Success message following valid connection to the database; it is now ready for the user to add a new record to the JobSeekers table.

```
16⊖     public static void main(String[] args) {
17          try {
18              Connection con = establishDatabaseConnection();
19              System.out.println("Connection established.");
20
21              //addNewJobSeeker(con);
22              System.out.print("Press RETURN to continue.");
23              input.nextLine();
24              accessSQLView(con);
25
26              con.close();
27          } catch (SQLException e) {
28              System.err.println("SQLException: " + e.getMessage());
29          }
30
31      }
32
```

```
Console ✕

<terminated> JDBCTest [Java Application] C:\Apps\eclipse_for_Java\plugins\org.eclipse.justj.oper
Connection established.
Press RETURN to continue.

Accessing SQL View: EmployerRecruitmentRateBetweenJuneToDecember2023
*************************************************************************
EmployerID      CompanyName                       NewRecruits
184             Hane LLC                          1
189             Hintz Group                       2
199             Volkman, Satterfield and Bauch    1
208             Von-Bailey                        1
```

Figure 2 – Alternatively, an SQL view (in this case, view number 2) is ready to be accessed following successful database connection.