

Database Foundations

6-6 : Retrieving Data

Practice Solutions

Exercise 1: Retrieving Columns from tables

Overview

In this practice you will perform the following tasks on the tables created for the Academic Database:

- Select all the columns from a table
- Select specific columns from a table

Tasks

1. Write a simple query to view the data inserted in the tables created for the academic database

Solution:

```
SELECT *  
FROM AD_ACADEMIC_SESSIONS;
```

```
SELECT *  
FROM AD_COURSES;
```

```
SELECT *  
FROM AD_DEPARTMENTS;
```

```
SELECT *  
FROM AD_EXAMS;
```

```
SELECT *  
FROM AD_EXAM_RESULTS;
```

```
SELECT *  
FROM AD_EXAM_TYPES;
```

```
SELECT *  
FROM AD_FACULTY_COURSE_DETAILS;
```

```
SELECT *  
FROM AD_PARENT_INFORMATION;
```

```
SELECT *  
FROM AD_STUDENTS;
```

```
SELECT *
FROM AD_FACULTY;
```

```
SELECT *
FROM AD_STUDENT_ATTENDANCE;
```

```
SELECT *
FROM AD_FACULTY_LOGIN_DETAILS;
```

```
SELECT *
FROM AD_STUDENT_COURSE_DETAILS;
```

2. Write a query to retrieve the exam grade obtained by each student for every exam attempted.

Solution:

```
SELECT STUDENT_ID, EXAM_ID, EXAM_GRADE
FROM AD_EXAM_RESULTS;
```

3. Write a query to check if a student is eligible to take exams based on the number of days he/she attended classes.

Solution:

```
SELECT STUDENT_ID, NUM_WORK_DAYS, EXAM_ELIGIBILITY
FROM AD_STUDENT_ATTENDANCE;
```

4. Display the LOGIN_DATE_TIME for each faculty member.

Solution:

```
SELECT FACULTY_ID, LOGIN_DATE_TIME
FROM AD_FACULTY_LOGIN_DETAILS;
```

5. Display the name of the Head of the Department for each of the Departments.

Solution:

```
SELECT NAME, HEAD
FROM AD_DEPARTMENTS;
```

6. Retrieve the student ID and first name for each student concatenated with literal text to look like this:
720: FIRST NAME IS JACK

Solution:

```
SELECT ID || ' : FIRST NAME IS ' || FIRST_NAME
FROM AD_STUDENTS;
```

7. Display all the distinct exam types from the AD_EXAMS table.

Solution:

```
SELECT DISTINCT EXAM_TYPE
FROM AD_EXAMS;
```

Exercise 2: Using Arithmetic Operators and Column Alias in SELECT statements

Overview

In this practice, you will use Arithmetic Operators and Column Alias in SELECT statements.

Tasks

1. The faculty of the different Departments realized that the exam grades entered in the AD_EXAM_RESULTS were showing an increased value of 5 points for each entry. Can you display the exam grades with 5 points subtracted from the marks obtained by each student?

Solution:

```
SELECT STUDENT_ID, EXAM_ID, (EXAM_GRADE - 5)
FROM AD_EXAM_RESULTS;
```

2. Display the percentage of days students have taken off and their eligibility for taking the exams.

Solution:

```
SELECT STUDENT_ID, ((NUM_DAYS_OFF/NUM_WORK_DAYS)*100), EXAM_ELIGIBILITY
FROM AD_STUDENT_ATTENDANCE;
```

3. Display the FIRST_NAME and EMAIL for each student like this:

Student Email Address
The email address of JACK is JSMITH@SCHOOL.EDU
The email address of NOAH is NAUDRY@SCHOOL.EDU

Solution:

```
SELECT 'The email address of ' || FIRST_NAME || ' is ' || EMAIL AS "Student Email Address"
FROM AD_STUDENTS;
```

4. Display the department name and the head of the department from the AD_DEPARTMENTS table like this:

Department and Head
ACCOUNTING Department's Head is: MARK SMITH
BIOLOGY Department's Head is: DAVE GOLD
COMPUTER SCIENCE Department's Head is: LINDA BROWN
LITERATURE Department's Head is: ANITA TAYLOR

Solution:

```
SELECT NAME || q'[ Department's Head is: ]'  
        || HEAD AS "Department and Head"  
FROM AD_DEPARTMENTS;
```

5. Display the distinct DEPARTMENT_ID from the AD_COURSE_DETAILS table.

Solution:

```
SELECT DISTINCT DEPT_ID  
FROM AD_COURSES;
```