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## **Oracle Programming for University System Developers (BAN100)**

### Course Description

This 5-day course provides an introduction to relational database concepts which can be used in conjunction with any relational database. The SQL\*Plus language is also covered which includes ANSI standard SQL as well as the Oracle-specific extensions. The course provides both lecture and hands-on lab time with the student spending approximately 50% of the class time practicing the techniques discussed in the lecture.

### Audience

This course is intended for technically oriented end-users, application developers and programmers who will create or maintain Oracle applications.

### Course Topics

#### **Introduction to Relational Databases**

- What is Oracle?
- Relational Databases
- Relational Rules
- Relational Terminology
- Entities & Attributes

#### **Relational Integrity**

- Integrity Constraints
- Not Null
- Unique Constraints
- Primary Key
- Foreign Key
- Referential Rules

#### **Date & Numeric Functions**

- CEIL & FLOOR Functions
- ROUND Function
- ADD\_MONTHS Function
- MONTHS\_BETWEEN Function
- NEXT\_DAY Function
- Date Formatting

#### **Group Operators**

- The Group By Clause
- Group Functions
- The Having Clause

#### **Using Multiple Tables**

- Simple Table Join

## **Normalization**

- Normalization Process
- First Normal Form
- Second Normal Form
- Third Normal Form

## **Simple Select Statements**

- Structured Query Language
- SQL\*Plus
- Connecting to Oracle
- Describing Tables
- Single Column Select
- Selecting Multiple Columns
- Order By Clause

## **The Where Clause**

- Where Clause Operators
- Equal Operator
- Not Equal Operator
- IN Operator
- LIKE Operator
- BETWEEN Operator
- NULL Operator

## **Formatting Output**

- SQL Buffer Commands
- Using Files
- SET Commands
- Column Formatting Options
- Page Headings
- Page Footers
- The BREAK Command

## **Calculations & Character Functions**

- Performing Calculations
- NVL Function
- DECODE Function
- LENGTH Function
- LOWER Function
- RPAD Function

- Qualified Column Reference
- Table Alias
- Outer Joins
- Multiple Table Joins

## **Using Multiple Queries**

- Single Value Subqueries
- Multiple Value Subqueries
- Set Operators
- Set Operator Rules

## **Data Manipulation Language**

- INSERT Command
- UPDATE Command
- DELETE Command
- Transaction Control
- Issuing Savepoints
- Rollback Command
- Commit Command

## **Data Definition Language**

- Creating Tables
- Altering Tables
- Creating Tables with Subquery
- Adding Columns to Tables
- Dropping Tables

## **Database Integrity Constraints**

- Not Null Constraint
- Unique Constraint
- Primary Key Constraint
- Foreign Key Constraint
- Enabling & Disabling Constraints
- Dropping Constraints

## **Creating Other Database Objects**

- Private & Public Synonyms
- Creating Sequences
- Roles
- System & Object Privileges
- Creating Indexes

- SUBSTR Function

- Creating Views