

MS IA 643, FALL 2023  
Group Project 3 Stored Program Units in Oracle

Go to D2L course site and locate *P3\_create\_ap\_tables* script file in Week 6 or Project Data Files module. Run the script file in your DBA643 account in IA643 pluggable database hosted on AWS Virtual Machine to setup tables for this project.

Due date: 5:30pm, October 4, 2023, Wednesday.

Total points: 100

**Turn-in item:** A script file named *P3\_Your\_GroupID.txt* and uploaded in D2L project folder. **One submission per group.** The script file must contain your group member names and all the code you wrote for this project. It must run in its entirety without error messages (**10% off** if compilation or run time error occurs).

**Requirements:** (1) include comments in the script file; (2) Do not include any testing statements in your submitted script file. (3) Follow all the instructions to avoid loss of additional points.

1. Create a package named *Acme\_Accounts*. The package contains two procedures and one function: *Update\_Payment*, *Late\_Payment\_Days*, and *Return\_Balance\_Due*.

The procedure named *Update\_Payment* will update total payment and payment date in the Invoices table. This procedure should have two parameters: Invoice ID and payment amount. Assume the payment date is the date when payment is updated.

*Late\_Payment\_Days* procedure takes invoice id as input parameter and display number of days the payment was received late. If no payment is received, display no payment on the screen.

The function named *Return\_Balance\_Due* accepts invoice ID and returns balance due. Hint: The Balance due = invoice\_total - payment\_total - credit\_total.

2. Create a trigger to enforce the following system requirement in an online payment system. When a payment is received, a clerk will execute *Update\_Payment* procedure, which will subsequently fire the trigger. The trigger tries to use payment total and credit total together to cover the invoice total. Whenever the payment total plus the credit total becomes larger than the invoice total in a row, the trigger will make payment total equal to invoice total, adjust credit total and issue a warning message to the effect of "Your payment plus credit is more than your invoice total. You have paid off your invoice. Your credit total is adjusted." Assume the trigger is fired only when payment is being modified. Any overpaid amount will be accepted and added to the credit total column. You must name the trigger *Over\_Payment\_Trig*.

- \* Read the above requirements carefully when you implement the package and trigger. \*
- \* You must use the same names I used above for the package, procedures, function and trigger \*
- \* Score distribution: Package 15; Procedures 20 each; Function 20, Trigger 20; Others 5 points.

⊗ Over-payment use after

\* Oct 19 Doctor Zakaria  
\* Ran on Oct 05 7pm  
\* Oct 10 6:45pm  
Zakaria