----------- IA-643: Database Application Security -----------

------------------------ Project 3 --------------------------

---------------------- Swathi Mannem ------------------------

-------------------- SCSU ID # 12747112 ---------------------

------------------- VM IP # 10.30.10.09 ---------------------

---------------- jchen password: Oct@2016 -------------------

----------------------- TABLE SPACE -------------------------

DROP TABLESPACE IA643\_TBS INCLUDING CONTENTS AND DATAFILES CASCADE CONSTRAINTS;

CREATE TABLESPACE IA643\_TBS

DATAFILE 'IA643\_dat.dat' SIZE 500K REUSE

AUTOEXTEND ON NEXT 300K MAXSIZE 100M;

------------------------- PROFILE ---------------------------

DROP PROFILE Develop\_prof CASCADE;

CREATE PROFILE Develop\_prof LIMIT

SESSIONS\_PER\_USER UNLIMITED

CPU\_PER\_SESSION UNLIMITED

CPU\_PER\_CALL 3000

CONNECT\_TIME 180

LOGICAL\_READS\_PER\_SESSION DEFAULT

LOGICAL\_READS\_PER\_CALL 1000

PRIVATE\_SGA 15K

COMPOSITE\_LIMIT 5000000

FAILED\_LOGIN\_ATTEMPTS 4

PASSWORD\_LIFE\_TIME 90

PASSWORD\_REUSE\_TIME 30

PASSWORD\_REUSE\_MAX 3

PASSWORD\_LOCK\_TIME 1

PASSWORD\_GRACE\_TIME 3;

-------------------------- USERS -----------------------------

------------------------ JOE SMITH ---------------------------

DROP USER JSmith CASCADE;

Create USER JSmith IDENTIFIED BY JSmith

DEFAULT TABLESPACE IA643\_TBS

QUOTA 10M ON IA643\_TBS

TEMPORARY TABLESPACE TEMP

PROFILE Develop\_prof

PASSWORD EXPIRE

ACCOUNT UNLOCK;

GRANT CONNECT, RESOURCE TO JSmith;

---------------------- SAM HOUSTON ---------------------------

DROP USER SHouston CASCADE;

Create USER SHouston IDENTIFIED BY SHouston

DEFAULT TABLESPACE IA643\_TBS

QUOTA 10M ON IA643\_TBS

TEMPORARY TABLESPACE TEMP

PROFILE Develop\_prof

PASSWORD EXPIRE

ACCOUNT UNLOCK;

GRANT CONNECT, RESOURCE TO SHouston;

-------------------- STEPHANIE CLARK -------------------------

DROP USER SClark CASCADE;

Create USER SClark IDENTIFIED BY SClark

DEFAULT TABLESPACE IA643\_TBS

QUOTA 10M ON IA643\_TBS

TEMPORARY TABLESPACE TEMP

PROFILE Develop\_prof

PASSWORD EXPIRE

ACCOUNT UNLOCK;

GRANT CONNECT, RESOURCE TO SClark;

---------------------- BOB JOHNSON --------------------------

DROP USER BJohnson CASCADE;

Create USER BJohnson IDENTIFIED BY BJohnson

DEFAULT TABLESPACE IA643\_TBS

QUOTA 10M ON IA643\_TBS

TEMPORARY TABLESPACE TEMP

PROFILE Develop\_prof

PASSWORD EXPIRE

ACCOUNT UNLOCK;

GRANT CONNECT, RESOURCE TO BJohnson;

--- ALTER PROFILE AND ADD PASSWORD VERIFICATION FUNCTION ---

ALTER PROFILE Develop\_prof LIMIT

PASSWORD\_VERIFY\_FUNCTION dd\_pwd\_fun;

----- THIS FUNCTION SHOULD BE CREATED IN "SYS" ACCOUNT -----

/\*

------------ FUNCTION FOR PASSWORD VERIFICATION -------------

CREATE OR REPLACE FUNCTION dd\_pwd\_fun(USERID\_VAR VARCHAR2, NEW\_PASSWORD VARCHAR2, OLD\_PASSWORD VARCHAR2)

RETURN BOOLEAN AS

USER\_ID VARCHAR2(255);

NEW\_PWD VARCHAR2(255);

USER\_LEN NUMBER(2);

PWD\_LEN NUMBER(2);

PWD\_LENGTH VARCHAR2(255);

LOWER\_CASE VARCHAR2(255);

UPPER\_CASE VARCHAR2(255);

NUMERIC VARCHAR2(255);

PWD\_MATCH VARCHAR2(255);

BEGIN

PWD\_LENGTH := 'FALSE';

LOWER\_CASE := 'FALSE';

UPPER\_CASE := 'FALSE';

NUMERIC := 'FALSE';

PWD\_MATCH := 'FALSE';

USER\_ID := USERID\_VAR;

NEW\_PWD := NEW\_PASSWORD;

USER\_LEN := LENGTH(USER\_ID);

PWD\_LEN := LENGTH(NEW\_PWD);

------ LENGTH VALIDATION Should be atleast 8 characters length ------

IF PWD\_LEN > 7 THEN

PWD\_LENGTH := 'TRUE';

END IF;

--- LOWERCASE VALIDATION Should have atleast one lower case letter --

FOR I IN 1..PWD\_LEN LOOP

IF REGEXP\_INSTR(SUBSTR(NEW\_PWD,I,1),'^.\*([a-z]+).\*$') > 0 THEN

LOWER\_CASE := 'TRUE';

END IF;

END LOOP;

--- UPPERCASE VALIDATION Should have atleast one uppercase letter ---

FOR I IN 1..PWD\_LEN LOOP

IF REGEXP\_INSTR(SUBSTR(NEW\_PWD,I,1),'^.\*([A-Z]+).\*$') > 0 THEN

UPPER\_CASE := 'TRUE';

END IF;

END LOOP;

---------- NUMERIC VALIDATION Should have atleast one digit ----------

FOR I IN 1..PWD\_LEN LOOP

IF REGEXP\_INSTR(SUBSTR(NEW\_PWD,I,1),'^.\*([0-9]+).\*$') > 0 THEN

NUMERIC := 'TRUE';

END IF;

END LOOP;

-- CONSECUTIVE USERNAME MATCH Should not have 3 consecutive charaters of username --

<<LOOP\_MATCH>>

FOR I IN 1..(USER\_LEN - 2) LOOP

FOR J IN 1..(PWD\_LEN - 2) LOOP

IF SUBSTR(UPPER(USER\_ID),I,3) = SUBSTR(UPPER(NEW\_PWD),J,3) THEN

PWD\_MATCH := 'TRUE';

EXIT LOOP\_MATCH;

END IF;

END LOOP;

END LOOP;

-------- CHECKING THE ABOVE VALIDATIONS AND RETURNING THE RESULTS ---------

IF PWD\_LENGTH = 'TRUE' AND LOWER\_CASE = 'TRUE' AND UPPER\_CASE = 'TRUE' AND NUMERIC = 'TRUE' AND PWD\_MATCH = 'FALSE' THEN

RETURN TRUE;

END IF;

RETURN FALSE;

END;

/

SHOW ERRORS;

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