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declare
  v_Version varchar2(10) := '0.9.5';
  -- 0.9.2 Added last updated by, last updated date columns to the column source comparrison
  -- 0.9.3 Removed A$ column from the REMOVED/ADDED query, "Query position" no longer a
separate line in report,
  -- additional highlighting of viewname added, Local/Remote DB name now used rather than
PROD and TEST
  -- 0.9.4 Adding in a check for WHERE clause changes
  -- 0.9.5 For some reason when a column changed type (i.e. COL to EXPR) I'd decided not to
report it. Fixed.
  v_ShowDetails          varchar2(1) := 'T';
  v_ShowDangerItemsOnly  varchar2(1) := 'F';
  v_LocalDB              V$DATABASE.NAME%TYPE;
  v_RemoteDB             V$DATABASE.NAME%TYPE;
  v_ViewCount            integer;
  v_ChangeCount          integer;
  v_OldViewName          n_views.view_name%TYPE;
begin
  dbms_output.put_line('Noetix Schema Comparison ' ||
                        TO_CHAR(SYSDATE, 'DD-MON-YYYY') || ' (V' ||
                        v_Version || ')');
  dbms_output.put_line('-----');
  for v_Database in (SELECT NAME FROM V$DATABASE@NOETIX_TEST) loop
    v_RemoteDB := v_Database.name;
    dbms_output.put_line(' (Remote) Database = ' || v_Database.name);
  end loop;
  for v_Database in (SELECT NAME FROM V$DATABASE) loop
    v_LocalDB := v_Database.name;
    dbms_output.put_line(' (Local) Database = ' || v_Database.name);
  end loop;
  dbms_output.put_line(' ');
  dbms_output.put_line('SECTION 001- CHECKING VIEWS');
  dbms_output.put_line('-----');
  if v_ShowDangerItemsOnly = 'F' then
    dbms_output.put_line('New Views');
    dbms_output.put_line('-----');
    v_ChangeCount := 0;
    for v_LocalView in (SELECT DISTINCT nv.View_Name
                        FROM N_VIEWS NV
                        WHERE EXISTS
                          (SELECT 'X'
                           FROM All_VIEWS AV
                           WHERE av.Owner = USER
                                AND av.view_name = UPPER(nv.View_name))
                        ORDER BY nv.View_Name) loop
      SELECT COUNT(*)
      INTO v_ViewCount
      FROM N_VIEWS@NOETIX_TEST NV
      WHERE EXISTS (SELECT 'X'
                   FROM All_VIEWS@NOETIX_TEST AV
                   WHERE av.Owner = USER
                        AND av.view_name = UPPER(nv.View_name))
      AND nv.view_name = v_LocalView.view_name;
      if v_ViewCount = 0 then
        if v_ShowDetails = 'T' then
          dbms_output.put_line(v_LocalView.view_name);
        end if;
      end if;
    end loop;
  end if;
end;

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        v_ChangeCount := v_ChangeCount + 1;
    end if;
end loop;
dbms_output.put_line('-- Total New View Count = ' ||
                    TO_CHAR(v_ChangeCount));
dbms_output.put_line(' ');
end if;
dbms_output.put_line('Removed Views');
dbms_output.put_line('-----');
v_ChangeCount := 0;
for v_RemoteView in (SELECT DISTINCT nv.View_Name
                    FROM N_VIEWS@NOETIX_TEST NV
                    WHERE EXISTS
                        (SELECT 'X'
                         FROM All_VIEWS@NOETIX_TEST AV
                         WHERE av.Owner = USER
                              AND av.view_name = UPPER(nv.View_name))
                    ORDER BY nv.View_Name) loop
    SELECT COUNT(*)
    INTO v_ViewCount
    FROM N_VIEWS NV
    WHERE EXISTS (SELECT 'X'
                  FROM All_VIEWS AV
                  WHERE av.Owner = USER
                       AND av.view_name = UPPER(nv.View_name))
    AND nv.view_name = v_RemoteView.view_name;
    if v_ViewCount = 0 then
        if v_ShowDetails = 'T' then
            dbms_output.put_line(v_RemoteView.view_name);
        end if;
        v_ChangeCount := v_ChangeCount + 1;
    end if;
end loop;
dbms_output.put_line('-- Total Removed View Count = ' ||
                    TO_CHAR(v_ChangeCount));
dbms_output.put_line(' ');
dbms_output.put_line('SECTION 002- CHECKING COLUMNS');
dbms_output.put_line('-----');
dbms_output.put_line('Views With Column Changes');
dbms_output.put_line('-----');
v_ChangeCount := 0;
v_OldViewname := '@';
for v_Column in (select atc.table_name view_name,
                      'ADDED' change_type,
                      atc.column_name
                  from all_tab_columns ATC
                  where atc.owner = user
                        and atc.COLUMN_NAME NOT LIKE 'A$%'
                        and atc.COLUMN_NAME <> 'Z$$'
                        and atc.TABLE_NAME IN
                            (SELECT UPPER(nv.view_name)
                             FROM N_VIEWS@NOETIX_TEST nv
                             WHERE NVL(nv.omit_flag, 'N') = 'N')
                  AND NOT EXISTS
                      (SELECT 'X'
                       FROM all_tab_columns@NOETIX_TEST ATC1
                       WHERE ATC.OWNER = ATC1.OWNER

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        AND ATC.TABLE_NAME = ATC1.TABLE_Name
        AND ATC.COLUMN_NAME = ATC1.COLUMN_NAME)
AND v_ShowDangerItemsOnly = 'F'
UNION
select atc.table_name view_name,
       'REMOVED',
       atc.column_name
from all_tab_columns@NOETIX_TEST ATC
where atc.owner = user
and atc.COLUMN_NAME NOT LIKE 'A$%'
and atc.COLUMN_NAME <> 'Z$$'
and atc.TABLE_NAME IN
    (SELECT UPPER(nv.view_name)
     FROM N_VIEWS nv
     WHERE NVL(nv.omit_flag, 'N') = 'N')
AND NOT EXISTS
    (SELECT 'X'
     FROM all_tab_columns ATC1
     WHERE ATC.OWNER = ATC1.OWNER
     AND ATC.TABLE_NAME = ATC1.TABLE_Name
     AND ATC.COLUMN_NAME = ATC1.COLUMN_NAME)
ORDER BY 1, 2, 3) loop
v_ChangeCount := v_ChangeCount + 1;
if v_OldViewname <> v_Column.view_name then
v_OldViewname := v_Column.view_name;
dbms_output.put_line(v_Column.view_name);
end if;
if v_ShowDetails = 'T' then
dbms_output.put_line(' ' || INITCAP(v_Column.Change_Type) || ' ' ||
                     v_Column.Column_Name);
end if;
end loop;
dbms_output.put_line('-- Total Column Changes Count = ' ||
                     TO_CHAR(v_ChangeCount));
dbms_output.put_line(' ');
dbms_output.put_line('Columns With Modified Source');
dbms_output.put_line('-----');
dbms_output.put_line('NOTE: This is a comparison of the Noetix tables, not the view source
themselves');
v_ChangeCount := 0;
v_OldViewname := '@';
for v_Column in (SELECT nv.View_Name Test_View_Name,
                       nv.query_position Test_Query_Position,
                       nv.column_name Test_column_name,
                       nv.column_type Test_Column_Type,
                       NVCT.last_updated_by Test_Last_Updated_By,
                       NVCT.Last_update_Date Test_Last_Udpated_Date,
                       NVL(nv.table_alias, '') || '.' ||
                       Replace(Replace(Replace(nv.column_expression,
                                               ' ',
                                               ' '),
                                              ' '),
                                chr(13),
                                ''),
                                chr(10),
                                '') Test_Column_Detail,
                       nv1.View_Name Prod_View_Name,
                       nv1.query_position Prod_Query_Position,
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        nv1.column_name Prod_column_name,
        nv1.column_type Prod_Column_Type,
        NVCT1.last_updated_by Prod_Last_Updated_By,
        NVCT1.Last_update_Date Prod_Last_Updated_Date,
        NVL(nv1.table_alias, '') || '.' ||
        Replace(Replace(Replace(nv1.column_expression,
                                ' ',
                                ' '),
                                chr(13),
                                ''),
                                chr(10),
                                '') Prod_Column_Detail,
        Replace(Replace(Replace(nv1.column_expression,
                                ' ',
                                ' '),
                                chr(13),
                                ''),
                                chr(10),
                                '') || ' > ' ||
        Replace(Replace(Replace(nv.column_expression,
                                ' ',
                                ' '),
                                chr(13),
                                ''),
                                chr(10),
                                '') Change_Pattern
FROM N_View_Columns NV
JOIN N_View_Column_Templates NVCT
ON NV.T_COLUMN_ID = NVCT.t_Column_Id
JOIN n_view_columns@NOETIX_TEST NV1
ON nv1.view_name = nv.view_name
AND nv1.column_name = nv.column_name
AND nv1.query_position = nv.query_position
AND UPPER(nv1.View_name) IN
    (SELECT AV.VIEW_NAME
     FROM All_Views AV
     WHERE AV.Owner = USER)
AND NVL(NV1.OMIT_FLAG, 'N') = 'N'
AND NVL(nv1.column_expression, 'NULL') NOT LIKE
    '%Copyright Noetix Corporation%'
JOIN N_View_Column_Templates@NOETIX_TEST NVCT1
ON NV1.column_label = nvct1.column_label
AND nv1.view_label = nvct1.view_label
AND nv1.query_position = nvct1.query_position
WHERE 1 = 1
AND UPPER(NV.View_Name) NOT LIKE '%_BASE'
AND nv.column_type NOT IN ('GENEXPR')
AND NVL(NV.OMIT_FLAG, 'N') = 'N'
AND NVL(nv.column_expression, 'NULL') NOT LIKE
    '%Copyright Noetix Corporation%'
AND UPPER(nv.View_name) IN
    (SELECT AV.VIEW_NAME
     FROM All_Views@NOETIX_TEST AV
     WHERE AV.Owner = USER)
AND NVL(lower(CASE
            WHEN nv1.COLUMN_TYPE = 'EXPR' THEN
            ''

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ELSE
NVL(nv1.table_alias, '') || '.'
END || Replace(Replace(Replace(nv1.column_expression,
                                ' ',
                                ''),
                                chr(13),
                                ''),
                                chr(10),
                                '')),
'NULL') <> NVL(lower(CASE
                    WHEN nv.COLUMN_TYPE = 'EXPR' THEN
                    ''
                    ELSE
                    NVL(nv.table_alias, '') || '.'
                    END ||
Replace(Replace(Replace(nv.column_expression,
                                ' ',
                                ''),
                                chr(13),
                                ''),
                                chr(10),
                                '')),
'NULL')
ORDER BY nv.View_Name, nv.query_position, nv.column_name) loop
--if v_Column.Test_Column_Type = v_Column.Prod_Column_Type then
v_ChangeCount := v_ChangeCount + 1;
if v_OldViewname <> v_Column.Test_View_Name then
v_OldViewname := v_Column.Test_View_Name;
dbms_output.put_line('==== ' || UPPER(v_Column.Test_View_Name) ||
                    ' =====');
end if;
dbms_output.put_line(' ' || v_Column.Test_Column_Name || ' (' ||
                    v_Column.Test_Column_Type || ' Query Position ' ||
                    v_Column.Test_Query_Position || ')');
if v_ShowDetails = 'T' then
dbms_output.put_line(' ' || v_LocalDB || '=' ||
                    v_Column.Test_Column_Detail || ' (' ||
                    v_Column.Test_Last_updated_By || ', ' ||
                    TO_CHAR(v_Column.Test_Last_Updated_Date,
                    'DD-MON-YYYY') || ')');
dbms_output.put_line(' ' || v_RemoteDB || '=' ||
                    v_Column.Prod_Column_Detail || ' (' ||
                    v_Column.Prod_Last_updated_By || ', ' ||
                    TO_CHAR(v_Column.Prod_Last_Updated_Date,
                    'DD-MON-YYYY') || ')');
end if;
--end if;
end loop;
dbms_output.put_line('-- Total Modified Column Count = ' ||
                    TO_CHAR(v_ChangeCount));
dbms_output.put_line('');
dbms_output.put_line('SECTION 003- CHECKING VIEW COMPOSITION');
dbms_output.put_line('-----');
dbms_output.put_line('Changed Where Clause Conditions');
dbms_output.put_line('-----');
v_ChangeCount := 0;
for v_WhereChange in (select 'Added' change_direction,

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        NVW.view_name,
        nvw.query_position,
        nvw.where_clause_position,
        nvw.where_clause,
        nvwt.last_updated_by,
        nvwt.last_update_date
    FROM N_View_Wheres NVW
    JOIN n_View_Where_Templates NVWT
    ON NVW.View_Label = NVWT.View_Label
    AND nvw.query_position = nvwt.query_position
    AND nvw.where_clause_position =
        nvwt.where_clause_position
    JOIN All_Views AV
    ON AV.owner = USER
    AND AV.VIEW_NAME = UPPER(NVW.view_name)
WHERE 1 = 1
    AND UPPER(NVW.View_Name) NOT LIKE '%_BASE'
    AND NVL(NVW.Omit_Flag, 'N') = 'N'
    AND NOT EXISTS
    (SELECT 'X'
     FROM N_View_Wheres@NOETIX_TEST NVW_R
     WHERE NVW.VIEW_NAME = NVW_R.view_name
     AND NVW.query_position =
         NVW_R.query_position
     AND NVW.where_clause = NVW_R.where_clause)
    AND EXISTS
    (SELECT 'X'
     FROM All_Views@NOETIX_TEST AV1
     WHERE AV1.owner = USER
     AND AV1.VIEW_NAME = UPPER(NVW.view_name))
UNION
SELECT 'Removed',
    NVW.view_name,
    nvw.query_position,
    nvw.where_clause_position,
    nvw.where_clause,
    nvwt.last_updated_by,
    nvwt.last_update_date
    FROM N_View_Wheres@NOETIX_TEST NVW
    JOIN n_View_Where_Templates@NOETIX_TEST NVWT
    ON NVW.View_Label = NVWT.View_Label
    AND nvw.query_position = nvwt.query_position
    AND nvw.where_clause_position =
        nvwt.where_clause_position
WHERE 1 = 1
    AND UPPER(NVW.View_Name) NOT LIKE '%_BASE'
    AND NVL(NVW.Omit_Flag, 'N') = 'N'
    AND EXISTS
    (SELECT 'X'
     FROM All_Views@NOETIX_TEST AV
     WHERE AV.owner = USER
     AND AV.VIEW_NAME = UPPER(NVW.view_name))
    AND NOT EXISTS
    (SELECT 'X'
     FROM N_View_Wheres NVW_R
     WHERE NVW.VIEW_NAME = NVW_R.view_name
     AND NVW.query_position =

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        NVW_R.query_position
        AND NVW.where_clause = NVW_R.where_clause)
    AND EXISTS
    (SELECT 'X'
     FROM All_Views AV1
     WHERE AV1.owner = USER
           AND AV1.VIEW_NAME = UPPER(NVW.view_name))
    ORDER BY 2, 3, 4, 5) loop
v_ChangeCount := v_ChangeCount + 1;
if v_OldViewname <> v_WhereChange.View_Name then
v_OldViewname := v_WhereChange.View_Name;
dbms_output.put_line('==== ' || UPPER(v_WhereChange.View_Name) ||
                    '====');
end if;
if v_ShowDetails = 'T' then
dbms_output.put_line('      Query Position ' ||
                    v_WhereChange.Query_Position || ' ' ||
                    InitCap(v_WhereChange.Change_Direction) || ': ' ||
                    v_WhereChange.Where_Clause || ' (Position = ' ||
                    TO_CHAR(v_WhereChange.Where_Clause_Position) || ', ' ||
                    v_WhereChange.Last_updated_By || ', ' ||
                    TO_CHAR(v_WhereChange.Last_Update_Date,
                            'DD-MON-YYYY') || ' ');
end if;
end loop;
dbms_output.put_line('-- Total Where Clause Changes = ' ||
                    TO_CHAR(v_ChangeCount));
dbms_output.put_line(' ');
rollback;
end;

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