

Session 6 - Magic with Oracle and Datapump

■ Magic for DBAs

```
CONN sys/password AS SYSDBA
GRANT EXECUTE ON DBMS_ADVANCED_REWRITE TO test;
GRANT CREATE MATERIALIZED VIEW TO test;
```

```
CONN test/test
DROP TABLE test.grades;
DROP TABLE test.students;
```

```
CREATE TABLE students (
  student_id          NUMBER(10),
  student_name        VARCHAR2(45),
  student_status      VARCHAR2(1),
  student_year        number(2),
  student_address     varchar2(45),
  student_city        varchar2(16),
  student_zip         number(6),
  student_social_security number(10))
/
ALTER TABLE students
ADD CONSTRAINT pk_student PRIMARY KEY (student_id)
USING INDEX
PCTFREE 0;
```

@insert_students

```
BEGIN
INSERT INTO STUDENTS VALUES (1, 'PAUL COOK', 'Y', 9, '5 Main Road', 'Auckland', 2031, 100101000);
INSERT INTO STUDENTS VALUES (2, 'HORACIO MIRANDA', 'Y', 8, '15 Main Road', 'Auckland', 2031, 100101001);
INSERT INTO STUDENTS VALUES (3, 'SCOTT PEDERSEN', 'Y', 7, '13 Main Road', 'Auckland', 2031, 100101002);
INSERT INTO STUDENTS VALUES (5, 'SETH PICKERING', 'Y', 9, '12 Main Road', 'Auckland', 2031, 100101003);
INSERT INTO STUDENTS VALUES (6, 'FRANCISCO ALVAREZ', 'Y', 11, '11 Main Road', 'Auckland', 2031, 100101004);
INSERT INTO STUDENTS VALUES (7, 'ALDMAAR VISSER', 'Y', 9, '16 Main Road', 'Auckland', 2031, 100101005);
INSERT INTO STUDENTS VALUES (9, 'REYNALDO OCFEMIA', 'Y', 6, '25 Main Road', 'Auckland', 2031, 100101006);
INSERT INTO STUDENTS VALUES (15, 'CAMERON PITCHES', 'Y', 12, '31 Main Road', 'Auckland', 2031, 100101007);
INSERT INTO STUDENTS VALUES (18, 'MONIQUE GENNIP', 'Y', 8, '71 Main Road', 'Auckland', 2031, 100101008);
INSERT INTO STUDENTS VALUES (99, 'TERRENCE LO', 'Y', 6, '17 Main Road', 'Auckland', 2031, 100101009);
INSERT INTO STUDENTS VALUES (100, 'KIM FONG', 'Y', 11, '16 Main Road', 'Auckland', 2031, 100101010);
INSERT INTO STUDENTS VALUES (103, 'CHRIS OPPERMAN', 'Y', 12, '7 Main Road', 'Auckland', 2031, 100101011);
INSERT INTO STUDENTS VALUES (104, 'SCOTT TIGER', 'Y', 6, '62 Main Road', 'Auckland', 2031, 100101012);
INSERT INTO STUDENTS VALUES (105, 'EVELYN AGHEMIO', 'Y', 11, '32 Main Road', 'Auckland', 2031, 100101013);
INSERT INTO STUDENTS VALUES (106, 'TOMAS MUNOZ', 'Y', 11, '18 Main Road', 'Auckland', 2031, 100101014);
INSERT INTO STUDENTS VALUES (107, 'GONZALO TORRES', 'Y', 10, '14 Principal Road', 'Auckland', 2031, 100101015);
INSERT INTO STUDENTS VALUES (108, 'JOHN KEY', 'Y', 10, '12 Principal Road', 'Auckland', 2031, 100101016);
INSERT INTO STUDENTS VALUES (109, 'JOHN A', 'Y', 7, '21 Principal Road', 'Auckland', 2031, 100101017);
INSERT INTO STUDENTS VALUES (111, 'JOHN B', 'Y', 9, '121 Principal Road', 'Auckland', 2031, 100101018);
INSERT INTO STUDENTS VALUES (112, 'JOHN C', 'Y', 8, '321 Principal Road', 'Auckland', 2031, 100101019);
INSERT INTO STUDENTS VALUES (113, 'JOHN D', 'Y', 6, '35 Principal Road', 'Auckland', 2031, 100101020);
INSERT INTO STUDENTS VALUES (114, 'JOHN E', 'Y', 12, '41 Principal Road', 'Auckland', 2031, 100101021);
INSERT INTO STUDENTS VALUES (116, 'JOHN F', 'Y', 8, '161 Principal Road', 'Auckland', 2031, 100101022);
INSERT INTO STUDENTS VALUES (10, 'JOHN G', 'Y', 7, '171 Principal Road', 'Auckland', 2031, 100101023);
INSERT INTO STUDENTS VALUES (311, 'JOHN H', 'Y', 11, '353 Principal Road', 'Auckland', 2031, 100101024);
INSERT INTO STUDENTS VALUES (312, 'JOHN I', 'Y', 7, '351 Principal Road', 'Auckland', 2031, 100101025);
INSERT INTO STUDENTS VALUES (319, 'JOHN K', 'Y', 9, '352 Principal Road', 'Auckland', 2031, 100101026);
INSERT INTO STUDENTS VALUES (322, 'JOHN L', 'Y', 6, '353 Principal Road', 'Auckland', 2031, 100101027);
INSERT INTO STUDENTS VALUES (333, 'JOHN M', 'Y', 11, '354 Principal Road', 'Auckland', 2031, 100101028);
INSERT INTO STUDENTS VALUES (343, 'JOHN N', 'Y', 6, '355 Principal Road', 'Auckland', 2031, 100101029);
INSERT INTO STUDENTS VALUES (344, 'JOHN O', 'Y', 7, '356 Principal Road', 'Auckland', 2031, 100101030);
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INSERT INTO STUDENTS VALUES (345,'JOHN P','Y',8,'357 Principal Road','Auckland',2031,100101031);
INSERT INTO STUDENTS VALUES (346,'JOHN Q','Y',9,'358 Principal Road','Auckland',2031,100101032);
INSERT INTO STUDENTS VALUES (347,'JOHN R','Y',10,'359 Principal Road','Auckland',2031,100101033);
INSERT INTO STUDENTS VALUES (350,'JOHN S','Y',11,'360 Principal Road','Auckland',2031,100101034);
INSERT INTO STUDENTS VALUES (530,'JOHN T','Y',12,'361 Principal Road','Auckland',2031,100101035);
INSERT INTO STUDENTS VALUES (531,'JOHN U','Y',13,'362 Principal Road','Auckland',2031,100101036);
INSERT INTO STUDENTS VALUES (533,'JOHN V','N',6,'35 Principal Road','Auckland',2031,100101037);
INSERT INTO STUDENTS VALUES (534,'JOHN X','N',8,'13 Principal Road','Auckland',2031,100101038);
INSERT INTO STUDENTS VALUES (535,'JOHN Z','N',7,'135 Principal Road','Auckland',2031,100101039);
INSERT INTO STUDENTS VALUES (536,'JOHN Y','N',11,'435 Principal Road','Auckland',2031,100101040);
INSERT INTO STUDENTS VALUES (537,'JOHN W','Y',8,'635 Principal Road','Auckland',2031,100101041);
INSERT INTO STUDENTS VALUES (539,'ARTUR JOHNES','Y',6,'22 Secondary Road','Auckland',2031,100101042);
INSERT INTO STUDENTS VALUES (540,'KING PANTHER','Y',7,'22 Secondary Road','Auckland',2031,100101043);
INSERT INTO STUDENTS VALUES (541,'PINK PANTHER','Y',8,'22 Secondary Road','Auckland',2031,100101044);
INSERT INTO STUDENTS VALUES (542,'HAROLD ROBINS','Y',9,'221 Secondary Road','Auckland',2031,100101045);
INSERT INTO STUDENTS VALUES (543,'CHRIS BONES','Y',8,'222 Secondary Road','Auckland',2031,100101046);
INSERT INTO STUDENTS VALUES (545,'TIM TOM','Y',9,'223 Secondary Road','Auckland',2031,100101047);
INSERT INTO STUDENTS VALUES (546,'TIM JONES','Y',10,'223 Secondary Road','Auckland',2031,100101048);
INSERT INTO STUDENTS VALUES (547,'MICHAEL JONES','Y',11,'224 Secondary Road','Auckland',2031,100101049);
INSERT INTO STUDENTS VALUES (548,'ANN SMITH','Y',12,'225 Secondary Road','Auckland',2031,100101050);
INSERT INTO STUDENTS VALUES (549,'JOHN SMITH','Y',13,'226 Secondary Road','Auckland',2031,100101051);
INSERT INTO STUDENTS VALUES (551,'PAUL STONE','Y',6,'227 Secondary Road','Auckland',2031,100101052);
INSERT INTO STUDENTS VALUES (552,'CARL SMITH','Y',7,'228 Secondary Road','Auckland',2031,100101053);
INSERT INTO STUDENTS VALUES (553,'TEST','Y',8,'229 Secondary Road','Auckland',2031,100101054);
COMMIT;
END;
/

```

```

CREATE TABLE grades (
  student_id      NUMBER(10),
  grade           NUMBER(6,2),
  grade_subject   VARCHAR2(4),
  grade_date      DATE,
  grade_note      VARCHAR2(60))
/

```

```

ALTER TABLE grades
ADD CONSTRAINT pk_GRADES PRIMARY KEY (student_id, grade, grade_subject, grade_date)
USING INDEX
PCTFREE 0;
ALTER TABLE grades
ADD CONSTRAINT fk_students
FOREIGN KEY (student_id)
REFERENCES students(student_id);

```

@insert_grades

```

BEGIN
  INSERT INTO GRADES VALUES (553,100.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (552,95.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (551,87.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (549,87.5,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (548,90.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (547,64.7,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (546,85.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (545,88.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (543,98.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (542,95.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (541,94.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (540,94.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (539,95.0,'ENGL',sysdate,null);
  INSERT INTO GRADES VALUES (1,88.0,'ENGL',sysdate,null);

```

```

INSERT INTO GRADES VALUES (2,98.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (3,98.7,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (5,96.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (6,97.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (7,90.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (9,91.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (15,92.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (18,93.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (99,94.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (100,95.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (533,98.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (534,100.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (535,100.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (536,99.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (537,88.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (530,88.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (531,88.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (103,67.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (104,56.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (105,93.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (106,88.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (107,72.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (108,71.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (109,68.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (111,77.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (112,87.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (113,65.5,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (114,34.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (116,91.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (10,98.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (311,78.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (312,88.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (319,67.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (322,89.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (333,95.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (343,91.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (344,98.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (345,87.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (346,93.0,'ENGL',sysdate,null);
INSERT INTO GRADES VALUES (347,99.0,'ENGL',sysdate,null);
COMMIT;
INSERT INTO GRADES VALUES (553,100.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (552,95.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (551,87.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (549,87.5,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (548,90.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (547,64.7,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (546,85.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (545,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (543,98.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (542,95.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (541,94.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (540,94.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (539,95.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (1,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (2,98.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (3,98.7,'MATH',sysdate-7,null);

```

```
INSERT INTO GRADES VALUES (5,96.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (6,97.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (7,90.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (9,91.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (15,92.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (18,93.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (99,94.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (100,95.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (533,98.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (534,100.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (535,100.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (536,99.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (537,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (530,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (531,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (103,67.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (104,56.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (105,93.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (106,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (107,72.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (108,71.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (109,68.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (111,77.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (112,87.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (113,65.5,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (114,34.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (116,91.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (10,98.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (311,78.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (312,88.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (319,67.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (322,89.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (333,95.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (343,91.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (344,98.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (345,87.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (346,93.0,'MATH',sysdate-7,null);
INSERT INTO GRADES VALUES (347,99.0,'MATH',sysdate-7,null);
COMMIT;
INSERT INTO GRADES VALUES (553,100.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (552,95.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (551,87.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (549,87.5,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (548,90.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (547,64.7,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (546,85.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (545,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (543,98.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (542,95.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (541,94.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (540,94.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (539,95.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (1,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (2,98.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (3,98.7,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (5,96.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (6,97.0,'BIOL',sysdate,null);
```

```
INSERT INTO GRADES VALUES (7,90.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (9,91.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (15,92.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (18,93.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (99,94.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (100,95.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (533,98.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (534,100.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (535,100.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (536,99.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (537,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (530,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (531,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (103,67.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (104,56.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (105,93.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (106,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (107,72.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (108,71.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (109,68.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (111,77.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (112,87.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (113,65.5,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (114,34.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (116,91.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (10,98.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (311,78.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (312,88.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (319,67.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (322,89.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (333,95.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (343,91.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (344,98.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (345,87.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (346,93.0,'BIOL',sysdate,null);
INSERT INTO GRADES VALUES (347,99.0,'BIOL',sysdate,null);
COMMIT;
INSERT INTO GRADES VALUES (553,100.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (552,95.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (551,87.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (549,87.5,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (548,90.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (547,64.7,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (546,85.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (545,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (543,98.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (542,95.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (541,94.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (540,94.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (539,95.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (1,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (2,98.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (3,98.7,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (5,96.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (6,97.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (7,90.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (9,91.0,'ARTS',sysdate,null);
```

```

INSERT INTO GRADES VALUES (15,92.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (18,93.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (99,94.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (100,95.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (533,98.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (534,100.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (535,100.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (536,99.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (537,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (530,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (531,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (103,67.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (104,56.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (105,93.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (106,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (107,72.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (108,71.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (109,68.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (111,77.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (112,87.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (113,65.5,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (114,34.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (116,91.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (10,98.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (311,78.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (312,88.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (319,67.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (322,89.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (333,95.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (343,91.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (344,98.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (345,87.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (346,93.0,'ARTS',sysdate,null);
INSERT INTO GRADES VALUES (347,99.0,'ARTS',sysdate,null);
COMMIT;
END;
/

```

```

SQL> Explain plan for
select student_name,avg(a.grade) from grades a, students b
where b.student_social_security = 100101016
and b.student_id = a.student_id
group by student_name
/

```

```

SELECT * FROM TABLE(dbms_xplan.display);

```

```

SQL> Explain plan for
select student_name,avg(a.grade) from grades a, students b
where b.student_id = 108
and b.student_id = a.student_id
group by student_name

```

/

```
SELECT * FROM TABLE(dbms_xplan.display);
```

```
SQL> ALTER SESSION SET QUERY_REWRITE_INTEGRITY = TRUSTED;
```

```
BEGIN
```

```
    sys.dbms_advanced_rewrite.declare_rewrite_equivalence (  
        name                => 'test_rw1',  
        source_stmt =>  
        'select student_name,avg(a.grade)  
        from grades a, students b  
        where b.student_social_security = 100101016  
        and b.student_id = a.student_id  
        group by student_name',  
        destination_stmt =>  
        'select student_name,avg(a.grade)  
        from grades a, students b  
        where b.student_id = 108  
        and    b.student_id = a.student_id  
        group by student_name',  
        validate    => false,  
        rewrite_mode    => 'text_match');
```

```
END;
```

/

Let's now see if the magic really works:

```
SQL> Explain plan for
```

```
select student_name,avg(a.grade) from grades a, students b  
where b.student_social_security = 100101016  
and    b.student_id = a.student_id  
group by student_name
```

/

```
SELECT * FROM TABLE(dbms_xplan.display);
```

-- Preparing Data Pump

```
create directory datapump as '/home/oracle/app/oracle/backup';  
grant exp_full_database to test;  
grant read, write on directory datapump to test;
```

--- Data masking

```
DROP TABLE TEST.EMPLOYEE;
```

```
CREATE TABLE TEST.EMPLOYEE  
( EMP_ID    NUMBER(10) NOT NULL,  
  EMP_NAME  VARCHAR2(30),
```

```
EMP_SSN VARCHAR2(9),
EMP_DOB DATE
)
/
```

```
insert into test.employee values (101,'Francisco Munoz',123456789,'30-DEC-73');
insert into test.employee values (102,'Horacio Miranda',234567890,'17-JUL-76');
insert into test.employee values (103,'Evelyn Aghemio',659812831,'02-OCT-79');
```

```
create or replace package test.pkg_masking
as
function mask_ssn (p_in varchar2) return varchar2;
end;
/
```

```
create or replace package body test.pkg_masking
as
function mask_ssn (p_in varchar2)
return varchar2
is
begin
return lpad (
round(dbms_random.value (001000000,999999999)),9,0);
end;
end;
/
```

```
select * from test.employees;
```

```
expdp test/test tables=test.employee dumpfile=mask_ssn.dmp directory=datapump
remap_data=test.employee.emp_ssn:pkg_masking.mask_ssn
impdp test/test table_exists_action=truncate directory=datapump dumpfile=mask_ssn.dmp
```

```
select * from test.employees;
```

```
--- Metadata Repository
```

```
expdp test/test content=metadata_only full=y directory=datapump dumpfile=metadata_24112010.dmp
impdp test/test directory=datapump dumpfile= metadata_24112010.dmp
sqlfile=metadata_24112010.sql
```

```
expdp test/test content=metadata_only tables=scott.emp directory=datapump dumpfile=
refresh_of_table_emp_24112010.dmp
impdp test/test directory=datapump dumpfile= refresh_of_table_emp_24112010.dmp sqlfile=emp.sql
```

```
--- Cloning a User
```



```
expdp test/test schemas=A content=metadata_only directory=datapump dumpfile= A_24112010.dmp
```

```
impdp test/test remap_schema=A:Z directory=datapump dumpfile= A_24112010.dmp
```

And your new user Z is now created like your existing user A , that easy!

--- Create a smaller copy of Production

-- Metadata Only

```
expdp test/test content=metadata_only full=y directory=datapump dumpfile=metadata_24112010.dmp
```

```
impdp test/test transform=pctspace:70 directory=datapump dumpfile=metadata_24112010.dmp
```

```
expdp test/test content=metadata_only tables=user.x_integration_log_det directory=datapump  
dumpfile=example_24112010.dmp
```

```
impdp test/test content=metadata_only directory=datapump dumpfile=example_24112010.dmp  
sqlfile=x_24112010.sql
```

-- Metadata and Data

```
expdp test/test sample=70 full=y directory=datapump dumpfile=expdp_70_24112010.dmp
```

```
impdp test/test transform=pctspace:70 directory=datapump dumpfile=expdp_70_24112010.dmp
```

--- Create your Database in a different structure

```
impdp test/test directory=datapump dumpfile=example_24112010.dmp
```

```
remap_datafile='/u01/app/oracle/oradata/datafile_01.dbf': '/u01/d:atafile_01.dbf'
```