**Part 1: Design an XML Schema that incorporates the following specifications (25 points).**

For each movie:

Movie\_ID (1 occurrence, required)

Title (1 occurrence, required)

Director (1 occurrence, required)

Writer (1 occurrence, required)

Genre (1 or more occurrences, required)

Release\_Date (YYYY/MM/DD) (1 occurrence, required)

Runtime (0 or more occurrences, optional), minutes only

For each review:

Review Number (1 occurrence, required)

Movie\_Title (1 occurrence, required)

Rating (values from 1 to 5, 1 occurrence, required)

Reviewer (1 occurrence, required)

Review\_Date (YYYY/MM/DD) (1 occurrence, required)

Review Description (0 or 1 occurrence, optional)

**Part 2: Take the data (move.xsl, review.xsl) and the XML Schema you designed in Part 1 to create a valid XML data file (15 points)**

Note: Make sure that the XML files are validated against the XML Schema you designed. You can use the online validator:

<http://www.corefiling.com/opensource/schemaValidate.html>

**Part 3. Insert data into Oracle DB, use SQL / XQuery to answer 5 queries (60 points, 10 points to each question).**

You will find the following documents to be helpful

[Oracle XML DB: Best Practices to Get Optimal Performance out of XML Queries](http://www.oracle.com/technetwork/database-features/xmldb/xmlqueryoptimize11gr2-168036.pdf)

[Oracle SQL language reference](http://docs.oracle.com/cd/E11882_01/server.112/e26088/functions249.htm#SQLRF06209)

1. Create a table with the following data type, use “insert\_movie\_xml.sql” to insert movie and review data into your table

Notice that column “REVIEWS” is a XMLType, the reviews of one movie is stored in a XML Object. One movie can have no review, one review or many reviews.

Table Data Definition:

MOVIE\_ID VARCHAR2(10 BYTE)

TITLE VARCHAR2(50 BYTE)

DIRECTOR VARCHAR2(50 BYTE)

WRITER VARCHAR2(50 BYTE)

GENRE VARCHAR2(50 BYTE)

RELEASE\_DATE DATE

RUNTIME NUMBER

REVIEWS XMLTYPE

1. Display reviewer names and all reviewed movies for each reviewer.
2. find all the movies which have a review from “Charles Walters”, print the movie title and director
3. find the review rating higher than 3，print its reviewer name and rating value, order by the movie release date in ascending order (movie released earlier displayed first).
4. find the review rating higher than 3，print its reviewer name and rating value, order by the review date in ascending order.
5. Display the average review rating, review number (count) and name for each reviewer.

Submission Instructions:

You need to submit the following files (the filenames should be EXACTLY the same

as mentioned below):

1. The Readme.txt file that contains your full name, USC ID and the list of the submitted files. There is a 10 points penalty if this file or some of the required information is missing from your submission.
2. The XML Schema files movie.xsd, review.xsd (25 points)
3. The XML data files movie.xml, review.xml (15 points)
4. Six SQL files q1.sql, q2.sql, q3.sql, q4.sql, q5.sql, q6.sql (60 points)
5. make HW3\_your\_usc\_id.zip file that includes all these files.
6. You need to submit your assignment to <https://www.uscden.net>
7. Late HW policy (10% for one day, 30% for two days, no HW accepted if more than two days late