ASSIGNMENT THREE CPT230 SP1 2014

Due Date: 11:59pm, Sunday 25th May (week 12)

Assignment Objectives & Structure
This assignment focuses on the practical side of concepts raised in the Testing and Process lectures. The assignment provides an introduction and exposure to some project deliverables and concepts utilised in industry.

The assignment consists of two parts:

Part A. 13 marks. Testing - Test documentation for 'Moving Pictures'.
Part B. 7 marks. Process - Project plan for 'Moving Pictures'.

Assessment Value
20% of your final mark will come from this assignment. As such, this assignment will be marked out of 20.

Help and Hints
A forum dedicated to Assignment three is available on the discussion board. Queries and discussions should be directed there. You are free to discuss queries, share URLs and offer suggestions, but do not paste your answers. I am also happy for you to share definitions of key terms. **One task involves identifying bugs. You must not post bugs identified to the forums**.

All queries to the instructor should be posted to the A3 forum before 5pm Friday 23rd May or emailed by Wednesday 21st May 5pm. This is a hard deadline – posts or emails after this time will not be responded to.

Trouble Getting Started

This assignment builds on the knowledge acquired in the w9-12 tutorials. Don't start this assignment until you have completed these tutorials.

(You may choose to post your tute responses in the relevant forum for instructor feedback.)

Part B requires you to understand not just RUP, but the SDLC, and all aspects of a project. You will need to consider all the topics we've studied this SP, and think about how they contribute to a development project. Then consider how they'd be used in a RUP project.

In the **Collaborate sessions** we will be walking through the tutorial exercises. The session recordings will be a valuable resource in completing this assignment.

What to Submit
You should submit your assignment using Weblearn's submission system. Email submissions will not be accepted unless Weblearn is not functioning. Your submission should include a single (non-zipped) pdf file only – no other formats will be accepted. Do not zip the file. You should submit only one file. There are no UML diagrams required for Assignment Three, although you do need to use the template tables in many places. Hand written work is not acceptable.

Late policy
Late assignments will attract a penalty of 10% (2 marks) per day. After 5 days, the penalty will be 100%. You can submit assignment drafts at any time – each submission will overwrite your previous submission, with only the latest submission being retained. Do consider submitting incomplete rather than late – it often results in a higher net mark.

OUA CS Extension policy

The instructor is completely uninvolved in the extension process, regardless of circumstances.

Please do not email me any requests for an extension !

- Extensions will only be granted for extenuating circumstances (personal/ workloads are not accepted reasons).
- Extension requests take time to process and should be initiated ASAP. Requests must occur before the due date.
- Extension requests are likely to require the submission of original supporting documents by mail.

Consult the document "CPT230 Overview SP1 2014" for more information about the extension process.

All requests need to be sent to ouacsit@rmit.edu.au

PART A – TESTING

Task 1. Develop User Acceptance Tests for the Review Content Query use case text description.

For assignment purposes you should limit the tests to the functionality and alt paths specified below. Do not test for every possible input range etc. (This task is an introduction to UAT). You must use the UCTD provided below (not your personal A1 submission).

Your tests MUST:

- Conformance test all main flow and alt paths once with simple data.
- Create each test separately (don't combine tests).
- Use the format provided in Appendix A
- Specify the exact data that needs to be pre-existing in the system before the tests can be run.
- Describe exactly what set up is needed prior to the test commencing.
- Show within the test script, actual test data and expected results – not a description of them.
- Describe in non-ambiguous detail what the tester should be doing at each step.

You are advised to complete the week 9 tutorial before attempting this task.

4 marks

Name	Review Content Query
Version	1.2
Goal	To review the content of flagged movies
Summary	When a movie entry is flagged for review, an administrator is required to review the appropriateness of that data. The administrator may choose to edit, suspend, delete or leave the data. The appropriate Production Company is notified of the review outcome.
Actors	Admin
Preconditions	The administrator is logged in.
Triggers	The actor selects "Review Content Query" from a menu, and then selects a content query from a list of "open" content queries.
Main Flow of Events	1. The system displays the information from the content query (date raised, name of submitter, and the reason for the query) as well as information for the movie (movie name, year produced, production company, and a brief summary). 2. The actor makes any required changes to the movie entry. 3. The actor marks the Content Query as complete. 4. The system emails the relevant Production Company with a copy of the final content query, using the email address registered. A copy of the email is not retained.
Alternative Paths	AP 3.1 The actor decides to suspend the movie entry 3.1.1 The actor marks the movie as Suspended 3.1.2 The system ensures the entry is not visible to fans or public users AP 3.2 The actor decides to delete the movie entry 3.2.1 The actor selects delete, and the system deletes the movie entry. AP 3.3 The actor decides to leave the query open. 3.3.1 The actor exits the screen, and the use case ends.
Post Conditions	The content query is marked as complete, and the relevant production company has been emailed OR The content query is unchanged and no notification has occurred
Business Rules	
Notes	The reason for the query is restricted to "incorrect year" OR "incorrect summary" OR "incorrect title". These values would be presented to the user for selection on generating the content query. Multiple reasons are not yet provided.

Task 2.

Using the template provided in Appendix B, submit one table that contains your response to both a) and b).

a) Identify appropriate test cases for calculating sales commissions.

Moving Pictures will enable viewers to purchase movies via a 3rd party supplier, and will charge this third party a commission fee based on how many copies of each movie is sold per month.

The following rules will calculate the commission fee payable each month for each movie:

1. The number of copies sold of:

Copies of each movie sold	Commission Fee
0 to 99	2%
100 to 199	1.5%
200 to 299	1.0%
300 and more	0.5%

2. The commission fee calculated can be reduced by the discounts specified below. Multiple discounts are allowed, but they must be applied progressively in the order specified. (calculatedFee*discount=newFee, then newFee*nextDiscount).
3. Discounts on offer include:
    a. A further 5% discount on the calculated fee if the movie is from a production company with a genre of "Arthouse".
    b. A further 5% discount on the calculated fee for a movie flagged as seasonal
4. All movies retail on the site for $20 each

Using the template in Appendix B, identify test cases for this business rule. You should complete this task using only black-box testing strategies.

Your test cases MUST
- Use the provided template
- Test every combination of ranges
- Utilise boundary testing strategy for all variables

4 marks

b) Execute the tests manually.

You MUST execute your tests manually by walking through the pseudo code (on the next page) and then record the results in your response (the last two columns of the template cater to test execution). A reminder that you should focus on the **logic of the code, not the syntax**.

1 mark

An intern has already developed some pseudo code for these rules.

```
number CalculateSalesCommission (Movie m, date DateFrom, Date dateTo) {

   number commissionCharge = 0;
   number COST = MOVIE_RETAIL_COST;

   //get the number of copies sold of this movie
   number numberSold = m.getTotalSold(dateFrom, dateTo);

   //get Genre
   text Genre = m.getGenre();

   //get if seasonal
   boolean Seasonal = m.getSeasonal();

   if (numberSold is between 1 and 100) then  {
        commissionCharge = numberSold*COST*0.02;
   }
   else (numberSold is less than 200) then  {
        commissionCharge = numberSold*COST*0.015;
   }
   else if (numberSold is less than 300) then  {
       commissionCharge = numberSold*COST*0.01;
   }
   else
       commissionCharge = numberSold*COST*0.05;

   if (seasonal is true) {
       commissionCharge = commissionCharge*0.95;
   }

   if (genre is "Arthouse") {
       commissionCharge = commissionCharge*0.95;
    }

   if (seasonal is true AND genre is "Family")
       commissionCharge = commissionCharge*1.05;

   return commissionCharge;
}
```

Please DO NOT post problems identified in this code to the discussion board.
Yes, they are deliberate in order to make Task 3 feasible !!

Task 3.
Use the template provided in Appendix C to complete both a) and b).

a) Create bug reports for any bugs you have identified in your executed tests.

Based on the results of task 2, continue in your role as the tester and create bug reports for any bugs you have identified using the Bug Report template in Appendix C.

A bug report should be written for each bug identified (not every time the same bug occurs). Your bug reports should be informative, not generic. I.e. "not calculating correctly" does not communicate much. Rather, identify which functionality you are testing for which is not performing as expected.

Your response will be assessed on
- Appropriate use of the provided template
- Identification of any bugs present
- Ability of a de-bugger to replicate the problem based on the report provided

3 marks

b) For each bug you created in 3a), locate the cause of the bug.

Switching now to the role of the de-bugger, work your way through the bug reports created in task 3a. For each report, you should examine the code to identify the reason the bug occurred. Update each bug report with this information in the appropriate fields. E.g. "Charge was calculated incorrectly. GST was subtracted from the price instead of added to the price". Ensure to use natural language when identifying the bug – do not write as a code fix.

1 mark

PART B – PROJECT PROCESS

Moving Pictures are looking to develop the system discussed. A project manager was appointed, and requested to draft a RUP project plan. This project manager presented the project plan below (complete with their notes-to-self scribbled in red) before being fired.

Your job is to re-write the plan, focusing on the items specified below (in "Your plan MUST"). You may need to add, remove, restructure or rearrange activities. You are not required to include vision statements, risk assessments, resources, dependencies, or durations. You will need to consider the notes the previous project manager has added.

Your plan MUST
- include appropriate use of RUP phases, iterations, and at least 2 cycles
- demonstrate an understanding of the characteristics of a RUP project as per the lecture
- identify relevant activities in the appropriate stage of the project

You plan SHOULD NOT
- be significantly longer than that below.
- develop functionalities beyond the scope below.
- dive deeply into low level detail, or take it way up to a generalised, non-project specific level.

Inception

Requirements Elicitation
- Interview Margaret David and Al, and an IT representative.
- Send interviews transcripts and obtain their sign off.

Requirements Analysis and Negotiation
- Create low levelled detailed use case diagrams of key system functionality
  - Submit Movie, View Movie *(priority 1)*
  - Edit Movie *(priority 2)*
  - Flag for review *(priority 3)*
  - Login, Create PCo Account *(security risks?)*
  - Review Content Query *(client having difficulty explaining this)*
  - Create Fan Account, Rate Movie, Create Movie Review *(lowest priority)*
- Identify Moving Pictures non-functional requirements *(concurrent access tricky?)*

Requirements Documentation
- Create highly detailed SRS,
- Write use case textual descriptions for every use case

Requirements Validation – Sign off all artefacts above with Chief Director and freeze.

Elaboration

Create Class Diagram of domain level
Create Object diagrams of typical scenario of a movie being stored
Create Sequence diagrams for complex interactions
- Flag for Review
- Review Content Query

Create Activity diagrams for Adding a Movie
Create State Diagrams for a Movie
Finalise Domain models, sign off all artefacts and freeze.

Construction

Decide and design architecture structure *(not sure about the security aspects of logging on)*
Create Implementation diagrams for every domain model created previously
Build the complete Moving Pictures Application
Build all Moving Pictures Interfaces
Build Moving Pictures Database
Integrate components

Transition

Write and conduct unit tests on all modules
Write and conduct integration testing on all modules
Write and conduct system testing on the system
Write and conduct user acceptance testing on the system
Deploy

7 marks

Appendix A – User Acceptance Test Example

Pre-Existing Test Data

Members and Children

Member Number	Membership Tier	ChildNo	Name	DOB
04321	Concession	1 2	Jane Jones Jack Jones	23/03/2009 23/03/2009
05789	Standard			

Creche Sessions

Date	Start Time	Places Remaining
18/04/2012	9:30 am	1
18/04/2012	10:30am	0
19/04/2012	9:30am	5

Test SetUp

1. NB The system date is assumed to be 16/04/2012. The system date will need to be adjusted to be this date or test data adapted to accommodate the current date.
2. Swipe member card in the card reader for member 04321
3. Membership is successfully validated, and the main menu displayed.

Test #	Test Name	Step	Step Description	Test Data	Expected Results / Post Condition
1	Book Childcare – 1 child - Success	1.1	Select "Book Childcare Session"		All children listed for this member are displayed: Jane Jones Jack Jones
		1.2	Select the children to be enrolled in a crèche session, and press enter.	Jane Jones	The dates of the next five days are displayed. 17/04/2012 18/04/2012 19/04/2012 20/04/2012 21/04/2012
		1.3	Select a date.	18/04/2012	A list of sessions open to bookings is displayed: 9:30am
		1.4	Select the session to book the child	9:30am	Display the cost of the booking: $4.00
		1.5	Confirm the booking.		Booking successful appears. The system books the child into the session.
2	Book Childcare – 1 child - unsuccessful	2.1	Select "Book Childcare Session"		All children listed for this member are displayed: Jane Jones Jack Jones
		2.2	Select the children to be enrolled in a crèche session, and press enter.	Jack Jones	The dates of the next five days are displayed. 17/04/2012 18/04/2012 19/04/2012 20/04/2012 21/04/2012
		2.3	Select a date.	18/04/2012	Unsuccessful message displayed. "There are no available sessions on the day"

Appendix B – Unit Test Template with example

This example uses the week 9 tutorial exercise. (The gray shaded boxes are for your information only – they do not need to be on your submission).

Test	caclulateTriangle
Purpose	To test the calculateTriangle method
Set Up	Run Shapes.exe. Navigate to the "Is this triangle an Isosceles" screen. Enter 3 side lengths.
Preconditions	None
Date	01/03/2012
Run by	Creena Phillips
Result	Fail

Relates to Task 2A

Test Case ID	Side 1	Side 2	Side 3	Expected Output	Actual Result	Pass / Fail
CT 1	3	3	3	Equilateral	Equilateral	Pass
CT 2	3	3	5	Isosceles	Isosceles	Pass
CT 3	2	6	4	Not a Triangle	Not a Triangle	Pass
CT 4	4	2	2	Not a Triangle	Isosceles	Fail
CT 5	9	2	5	Not a Triangle	Not a Triangle	Pass
Relates to Task 2A					*Add this bit for Task 2B*	

Appendix C – Bug Report Template with example

Bug Title	Incorrect calculation of a triangle *//give a meaningful name*
Test Reference	Calculate Triangle CT4
Description	Method does not appear to incorporate the criteria that any pair of sides must be strictly greater than the third side. *//provide good detail on what's not happening*
Detected By	Creena Phillips
Severity	Average *//Use the levels provided in the lecture notes*
Status	Closed *//Status of this report Open, In progress, Closed.*
Reproduction Steps	Run Shapes.exe. Navigate to the "Is this triangle an Isosceles" screen. Enter 3 side lengths of 4,2,2 *//if executing manually, then don't say "run program.exe".* *//if one bug occurs on many tests, one set of data is enough for A3*
Expected Results	Not a triangle *//What the result should have been*
Actual Results	Isosceles *//what the result was.*
Assigned To	Creena Phillips
Identified Fault	When 2 of 3 sides are equal, the check for 2 sides being greater than a third is incorrectly bypassed. *//Identify the cause of the bug was, in NATURAL LANGUAGE.*
Fixed.	No. *//Specify whether fix has been implemented and successfully tested This should be no!*

Task 3A

Task 3B