
Software Quality Assurance: SOFT3302

Tutorial – Week 12

Objectives

To develop an understanding and to practise the review process.

Pework

Read up on PSP. You might like to start your own personal checklist.

Continue your work on Assignment 3.

Labwork

The code in Appendix A extends the *JBooks* application with automated credit-card functionality and provides functionality to verify that an electronic bank statement is correct.

1. Form groups of 3–4 people.
2. Assign each member of the team a rôle in inspecting the `checkStatement` method.
3. Use the forms provided in Appendix B to help with the planning and inspection activities.
4. All groups should then present and discuss findings with the entire class.

The attached forms are duplicates of the forms from the lecture slides. Not all of the fields may be totally applicable for this exercise.

```
public class CreditCardStatement {
    public static final double interestrate = 0.225;
        // interest rate is 22.5%
    public static final double creditlimit = 2000.00;
    public static final double merchantfee = 0.04;
        // the credit card merchant fee is 4% of the purchase cost

    public double openingbalance, closingbalance;
    public Enumeration items; // contains CreditCardLineItem objects
}

public class CreditCardLineItems {
    public Date date;
    public String id;
    public String description;
    public double amount; // payments are negative
    public Boolean merchantfeedue;
}

public Boolean checkStatement(CreditCardStatement ccs) {
    boolean accept;
    double total = 0.0;
    double subtotal = 0.0;
    CreditCardLineItem li;

    while (ccs.purchase.hasMoreElements() & total <= ccs.creditlimit) {
        li = (CreditCardLineItem)ccs.items.nextElement();
        subtotal += li.amount;
        if (li.merchantfeedue)
            subtotal += ccs.merchantfee * li.amount;
        total += subtotal;
    }
    total += ccs.openingbalance;
    total = total + (total * ccs.interestrate);
    if (total == ccs.closingbalance & total <= ccs.creditlimit)
        accept = true;
    else
        accept = false;
    return accept;
}
```

Notice the way in which Java cunningly provides two meanings for the & operator: one, a bitwise AND operation, when its arguments are numeric and one, a logical AND operation (used here), when its arguments are boolean.

Inspection Review/Planning

Identification			
Inspection ID		Date	
Purpose			
Scope			
Approval	Name	Signed	Date

Planning				
1. Participants				
	Moderator			
	Authors			
	Reviewers			
2. Work Items				
	Product			
	References			
	Checklist			
3. Schedule				
	Task	Date	Time (Start/End)	Location
	Orientation			
	Review Meeting 1			
	Review Meeting 2			
4. Checklist				
	<input type="checkbox"/> References obtained for work <input type="checkbox"/> Checklists obtained for work <input type="checkbox"/> Moderator is trained/experienced with inspections <input type="checkbox"/> Reviewers aggress with proposed inspection <input type="checkbox"/> Moderator's quick review yields less than 5 major issues <input type="checkbox"/> Reviewers understand responsibilities and are committed			
5. Goals				
	Task	Goal		
	Preparation	min/page ×	pages =	prep time/reviewer
	Review	meetings ×	duration =	review time/reviewer
6. Effort				
	(mins)			

Orientation				
1. Prep. Goals		min/page ×	pages =	prep time/reviewer
2. Checklist				
	<input type="checkbox"/> Reviewers understand scope and purpose of work product <input type="checkbox"/> Reviewers understand checking process, checklists and references <input type="checkbox"/> Work product, references, checklists and checking forms provided			
3. Effort				
		meeting (min) ×	participants =	total (min)

Inspection/Review Meetings

Identification			
Inspection ID		Date	
Purpose			
Scope			

Participants	
Moderator	
Scribe	
Authors	
Reviewers	
Absent	

Consolidated Issues				
1. Problems with Inspection/Review process				
N ^o	Problem description			
2. Issues (critical, severe, moderate, minor)				
N ^o	Location	Severity	Chk/Ref	Description
3. Issue totals				
Critical	Severe	Moderate	Minor	Author queries

4. Stats	Item	R1	+ R2	+ R3	+ R4	+ R5	+ R6	= Total
	Prep. Effort							min
	Critical issues							issues
	Severe issues							issues
	Moderate issues							issues
	Minor issues							issues
	Author queries							Q's
5. Checklist								
	<input type="checkbox"/> All reviewers present. <input type="checkbox"/> Absentees noted: <input type="checkbox"/> All reviewers have prepared sufficiently for meeting <input type="checkbox"/> All issues noted by scribe and understood by author for rework <input type="checkbox"/> Problems with inspection process have been noted							
6. Effort	meeting (min) × participants = total (min)							

Inspection/Review Rework/Followup

Rework/Followup			
1. Issue disposition			
N°	Fixed	Type	Explanation
2. Checklist			
		<input type="checkbox"/> Outcome of all review meeting issues are noted on this form <input type="checkbox"/> All minor issues have been addressed <input type="checkbox"/> No known defects remain in the product	
3. Effort		(min)	

Post-inspection/Review Verification/Recording

Verify		
1. Effort		
	Item	Effort (min)
	Planning	
	Orientation	
	Preparation	
	Review meetings	
	Rework	
	Verify	
	Total	
2. Defect removal		
	Issues	Count
	Critical	
	Severe	
	Moderate	
	Minor	
	Total	
3. Method variations		
	<input type="checkbox"/> Reviewer forms were not filled out completely <input type="checkbox"/> Review meetings involved issue discussion and resolution <input type="checkbox"/> Checklists did not appear to be helpful <input type="checkbox"/> References did not appear to be helpful <input type="checkbox"/> Other:	
4. Checklist		
	<input type="checkbox"/> Moderator's quick review yields less than 2 major issues <input type="checkbox"/> Moderator has collected all inspection/review forms for filing <input type="checkbox"/> Moderator has entered data into quality engineering database	
5. Process improvement suggestions		
6. Inspection status		
	<input type="checkbox"/> Pass <input type="checkbox"/> Conditional pass: <input type="checkbox"/> Fail:	
7. Moderator sign-off		
	Name	Signed Date
8. Author sign-off		
	I agree/disagree with the moderator's decision: <input type="checkbox"/> Agree <input type="checkbox"/> Disagree	
	Name	Signed Date