

Software Systems Verification and Validation

Assoc. prof. dr. Andreea Vescan Lecture 12: Structure of
the final exam +
Agile Testing

Babeş-Bolyai University

Cluj-Napoca

2018-2019



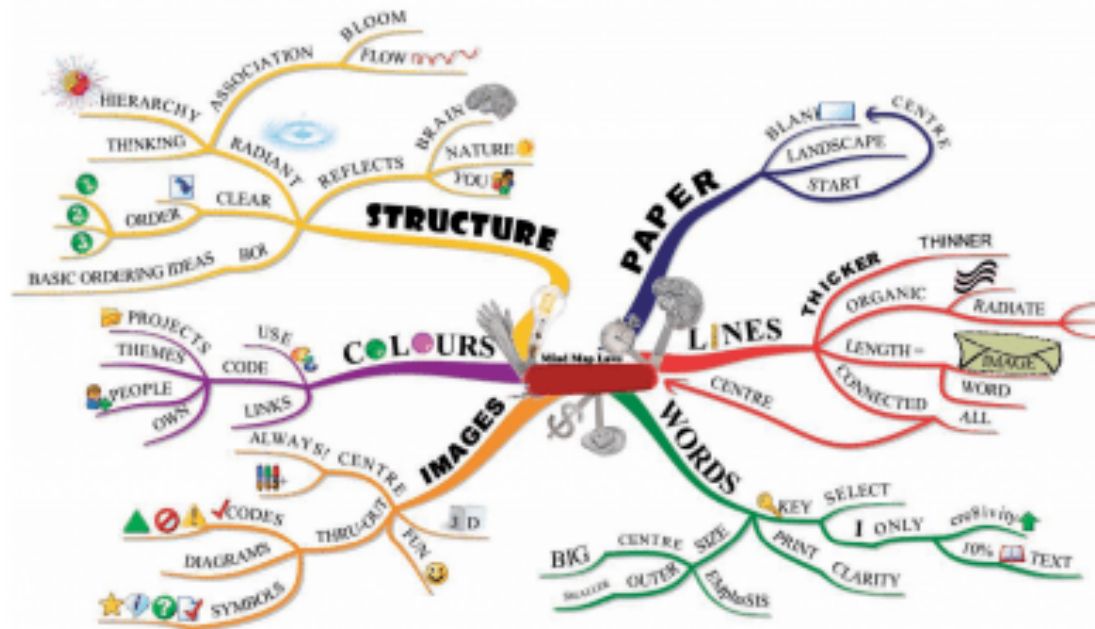
Outline

- Surprises!
- Structure of the final exam
- Agile Testing
- Surprises!

Surprises!

- Experiment : Mindmapping

How to Mind Map®



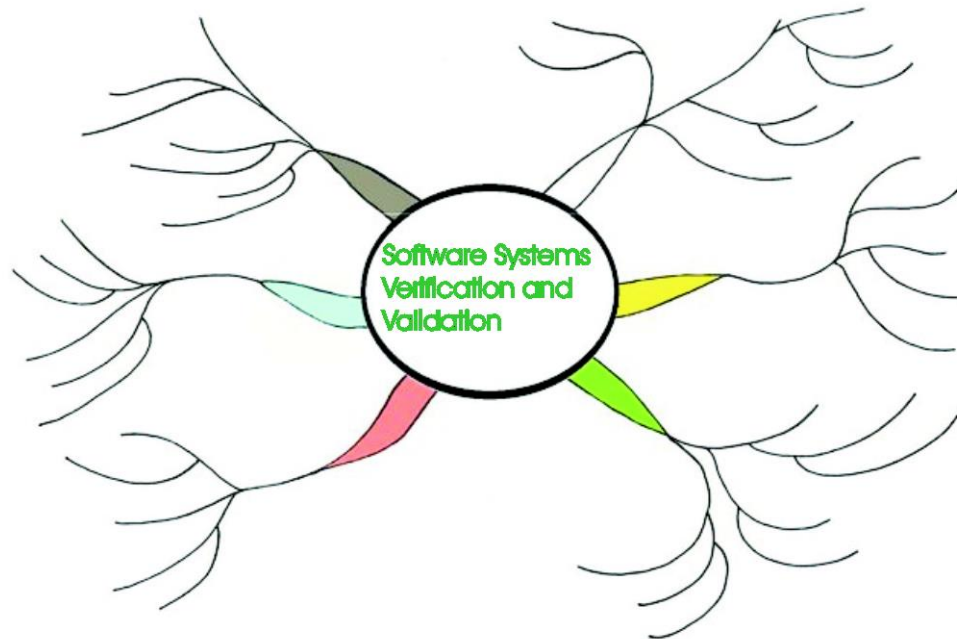
Quick Start Guide

7 Steps to Better Thinking

1. Set your purpose/goal.
2. Start in the **CENTRE** of blank paper turned sideways.
3. Quickly sketch an **IMAGE** of your focus in the centre.
4. Use at least 3 **COLOURS**, for emphasis, structure, texture, creativity.
5. Draw curved lines, radiating from centre (thick to thin) **CONNECTING** main branches to central image & at each level.
6. Use 1 key word or image per line for more power and flexibility in thinking.
7. Use images throughout as a picture paints a 1,000 words.

Surprises!

- Experiment: Mindmapping
“Software System Verification and Validation” in the next 5 minutes!



© Paul Foreman <http://www.mindmapinspiration.com>

Earn: 25 XP in Lecture 12
(if the second mindmap is created)

Outline

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Examination dates

31.05.2018 – groups 932, 935, 936

7.06.2018 - groups 931, 933, 934

Please come to the scheduled examination date with your own group! You will not be evaluated otherwise!

Grading

Grading (Tentative) – will be modified – Lecture 01

- $F = 20\% L + 20\% S + 10\% Q + 50\% E$
 - L=lab; S=Seminar; Q=Quizzes; E=Written;
 - Bonus points! See the homepage of the course!
- Conditions to participate at the final exam
 - There is no restriction regarding the participation at the written examination regarding obtained marks at L, S, Q.
 - Laboratory activity: 3 out of 6 laboratories must be delivered.
 - Attendance lab (5 out of 6) -90%
 - Attendance sem (4 out of 6) – 75%
 - Motivations
 - <http://www.cs.ubbcluj.ro/hotarare-privind-motivarea-absentelor-studentilor-nivel-licenta/>
 - Students will present the documents to motivate absences from the seminar/laboratory within one week from the date of absence.
- L/S/Q work may not be redone in the retake session.
- Students from Previous Years to 2018-2019 - All the above rules apply to students from previous years.
- Conditions to pass/complete the SSVV discipline:
 - $F \geq 5$ final grade.

Seminar

- Attendance: 4 out of 6 required
 - 20% of the final grade
- **Required readings before seminars!**
- Seminar structure
 - **Assignment 1** - 10-minutes – discussion on a given topic (the teacher is an observer!)
 - **Assignment 2** - 60-80 minutes – assignments on a given topic
 - **Assignment 3** – 10 minutes – quiz about required reading and seminar discussions.

Laboratory

- Attendance: 5 out of 6 required
- 20% of the final grade
- Lab structure
 - **First hour of each lab** - current lab discussion, problem assignment and **in-class** problem solving.
 - **The second hour of each lab** - delivery of previous lab (exception first laboratory).
- Work in teams – exactly 2 member per team.
- Lab grading for each laboratory (except the last one)
 - **In class** assignments! (3 points)
 - **Take-home** (Homework) assignments! (7 points)
- No more than two lab problems will be delivered in one lab meeting. An extra lab problem is delivered **only if time allowed**.
- Delay in lab submissions –2p from that lab grade.
- Maximum 2 weeks delay in submission of the homework assignment.
- **Remark:**
 - At the end of the semester all laboratory homework assignments must be saved on CD and given to the teacher.
 - Each time you deliver a laboratory - the Deliverables of the in-class and take-home assignments must be uploaded in canvas.

Grading

Gamifying Education

	Heroic Quests (quizzes)	Side Quests (Lab projects)	Social Quests (Seminars +Video Presentation)	Epic Quests (Final exam)
Normal session	300 XP	600XP Each Lab 100 XP (in-class 25XP+ take-home 75XP)	600 XP Each Sem 100XP (in-class 25XP + Quiz 75 XP)	Up to 1500 XP
Retake session	0 XP	0 XP	0 XP	Up to 1500XP

XP intervals	Grade
[1400,1500]	5
[1501,1800]	6
[1801,2100]	7
[2101,2400]	8
[2401,2700]	9
Over 2700	10

- Final exam – you must come (be present) to final exam in order to compute the grade!

- Bonus points = 300 XP (1p)
 - 200 XP – activities during lectures
 - 100 XP – Lecture 11 and Lecture 12 – Presentations
- Bonus points = 300 XP (1p)
 - Research paper only if you (will) have 300 XP for Labs
 - Topic by teacher + 2 members/team + deliverables
 - Paper submitted to journal for review

Structure of the final exam

Take Home EXAM – 500 XP

- **Solve at home and bring it at exam!**
- **Take Home EXAM - for each student – canvas2 under Exam module.**
- 75 XP- Mindmap a SSVV notion (each student will receive a notion)
- 25 XP short question (each student will receive a question before exam)
- 150 XP long question (each student will receive a question before exam)
 - The answers to **ShortQuestion** and **LongQuestion** must be **written by hand!**
- 50 XP Study – Assessment Methods at the “SSVV” discipline – survey – online – one day before Final exam
- 200 XP – Study - Impact of Software Testing knowledge on performance in programming
 - 3 requirements to be implemented (no test cases, test cases by students, test cases by teacher provided)
 - Survey – on line

In Class EXAM – 1000 XP

- Structure of exam
 - Topics:
 - 1) Inspection
 - 2) Testing (BBT, WBT, Levels of testing)
 - 3) Correctness (Floyd/Hoare/Dijkstra, Refinement)
 - 4) Symbolic execution
 - 5) Model checking
 - 5*150 XP = 750 XP
 - Topic: IT firm presentations: Altom presentation, Evozon presentation, Endava presentation
 - 3*50 = 150 XP
 - Topic: 1 General Questions
 - Sample type of questions:
 - True/False proposition. Justify your answer.
 - Fill in the missing information.....
 - Multiple answer question.
- Time: 45 minutes for In Class Exam

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Agile Testing

- **Video presentations**
 - **Created by a team**
 - **Each video ~ 5 minutes**
 - **Audio + written + visual**
 - **Send by email the link for your video – 1 day before the presentation**
- **Team 1**
 - Ratiu Cosmina
 - Corina Todoran
- **Team 2**
 - Dragodan Alexandra
 - Fratila Nicolae
 - Nacu Cristian
- **Team 3**
 - Buhai Alexandru
 - Csoka Ervin
 - Cuibus Ciprian
- **Team 4**
 - Grigore Dragoş-Alexandru
 - Todoran Ana-Corina
 - Vele Radu-George

SBTM

- A method [SBTM] for measuring and managing exploratory testing.
- An approach to testing with:
 - No test cases
 - No expected results
 - No pass/fails metrics
- Testing on a project is divided up into focused “sessions” of exploratory testing.
- A test session
 - A dedicated and uninterrupted period of exploratory testing.
 - Focused on a set objectives defined in a “charter”
 - Generates notes and lightweight reporting on the testing carried out.
 - The testing task is expected to change and evolve.

Exploratory testing

- **Is not random**
- **Is creative and requires intelligent thoughts.**

Session Based Test Management [SBTM]

- **Planning**
 - Charter: a single sentence that sets the scope of the testing
 - What you will test
 - How you plan to test it
 - The information you hope to provide.
 - That scope should be achieved in 90 minutes.
 - Charter are basis of estimation and coverage.
- **Testing**
 - A dedicated and uninterrupted period of testing (no meetings, no email)
 - Use testing experience or instinct; use your domain knowledge
 - Test scenarios could be ok, but not pre-scripted steps
 - Use the software, observe it and be alert of new questions or test ideas
 - Encourage thinking beyond specific features or tasks in isolation.
 - Fully imagine and describe users of the software
- **Note taking/ Reporting**
 - Not just pass/fail count: what you did. Why you did it. What you saw. What questions and ideas you had. Any frustrations/blocks.

SBTM [SBTM]

- Jonathan Bach – course on Session Bases Test Management
- Example:
 - Applied: Sanity and Survey Testing Focus Writer.
 - Software: Focus Writer.
- Computed metrics**

Test
Bug
Setup
OffCharter
Note
Question
NextTime
Data

Session end.Duration		52
Number of bugs		4
Time on Test (mins)		44
Time on Setup (mins)		3
Time on Bugs (mins)		3
Time Off Charter (mins)		1
Number of questions		5
Number of ideas for next time		2
Session Tester	alexandra.casapu@altom.ro	
Session Charter	Perform Sanity Testing and Survey Testing for FocusWriter	
Planned session time (mins)		60
Environment Info	Windows, Product Version: FocusWriter 1.6.2, Mac OSX version 1.6.2, on MacOSX Sierra	
Area	Menus	
Current Active Tag	Test	
Time remaining (mins):		9
Session start	SESSION ENDED!	

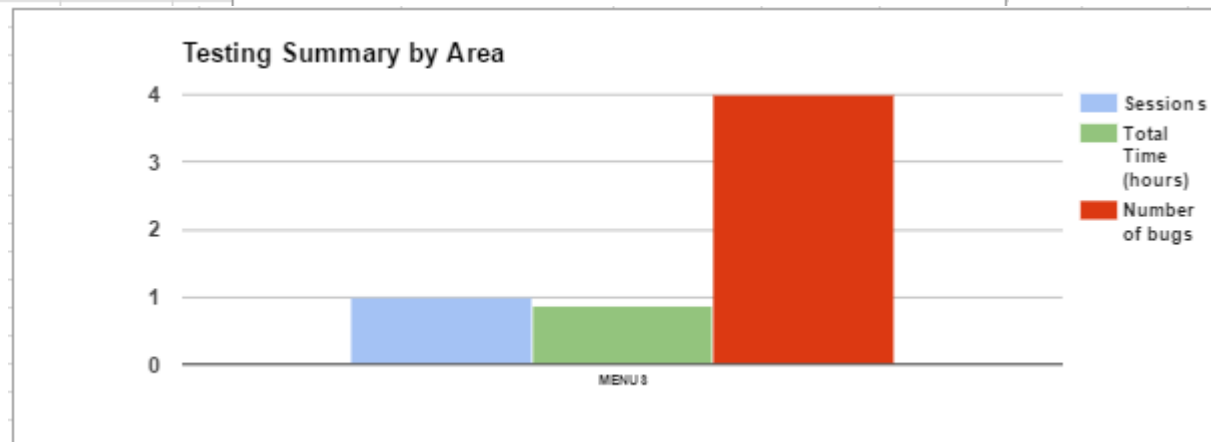
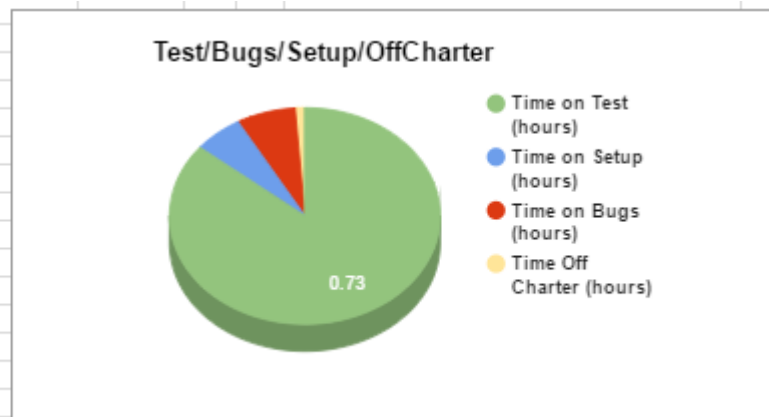
SBTM [SBTM]

Jonathan Bach – course on Session Based Test Management [RapidSoftwareTestingCourse_Altom]

Example:

- Applied: Sanity and Survey Testing Focus Writer.
- Software: Focus Writer.

Overall Summary	
Total Sessions	1
Total Time (hours)	0.87
Total Bugs	4
Time on Test (hours)	0.73
Time on Setup (hours)	0.05
Time on Bugs (hours)	0.06
Time Off Charter (hours)	0.01
Total Questions	5
Total Next Time Ideas	2

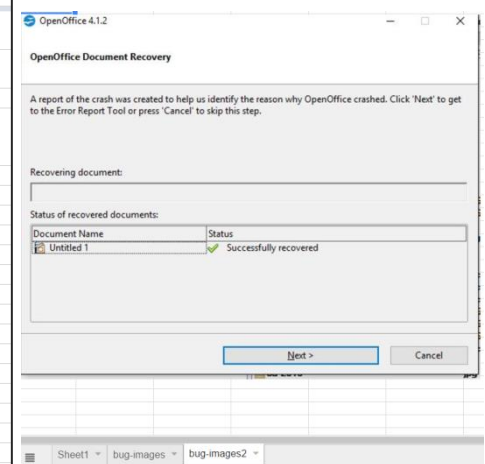
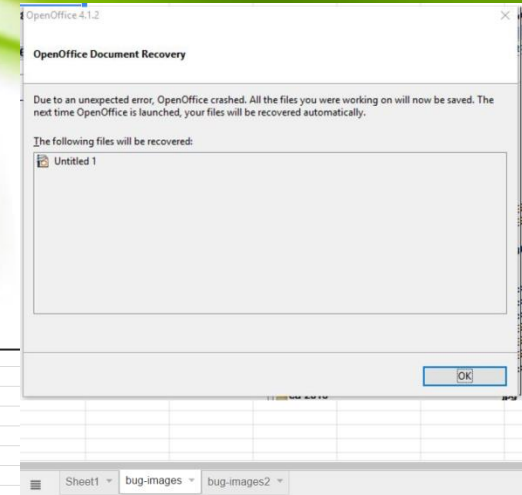


SBTM [SBTM]

- Tabara de testare 2016
- Example:
 - Software: OpenOfficeImpress.
- Computed metrics

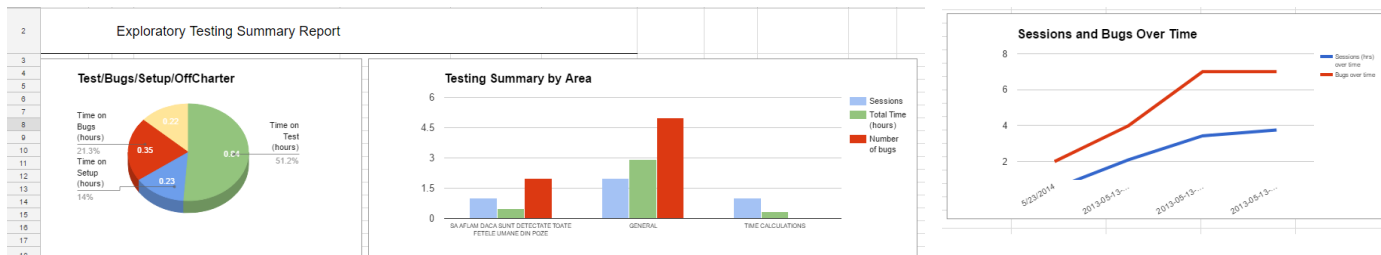
TABARA
DETESTARE

Session Tester	
Session Charter	AndreeaVescan
Planned session time (mins)	30 minutes
Environment Info	OpenOfficeImpress
Area	Sa aflam daca sunt buguri in Impress care ar putea determina utilizatorii sa foloseasca solutii similare
Current Active Tag	Bug
Time remaining (mins):	#NUM!
Session start	START ADDING NOTES BELOW
Test	create new template with a special font for letters (to tell an emotional story by a professional trainer/presenter) to raise the impact of the content
Note	Am creat un myOwnTemplate si am incercat sa vad daca pentru mine am gasit un tip de font apropiat de scrisul de mana si am gasit...satisfactor
Bug	nu s-a salvat formatul creat de mine
Note	am incercat sa caut pe internet fonturi care sa existe in ppt si nu in openoffice care sa fie in format de scrisoare,m-am uitat si in lista de font de la ppt dar la prima vedere nu verificat cateva care mi-au placut daca se gasesc si in openoffice
Test	am verificat pe internet daca au mai fost alti utilizatori nemultumiti de fonturile existente in openoffice
Note	ce tipuri de utilizatori sunt? cat de prioritar pentru ei era sa fie fontul cerut? Cat de critic?
Note	how to install new fonts in openoffice, v
Test	cauta pe forumuri despre bud publicity for openoffice
Note	https://forum.openoffice.org/en/forum/viewtopic.php?f=10&t=33191
Note	Difficulty aligning bullets in slide master



SBTM

- Lecture 12
- Use SBTM for an open source application
- SBTM template available here:
 - <https://drive.google.com/a/altom.ro/previewtemplate?id=0Aqk-dNwZsfwrDHlfYTRSN3FKQzIVenBYWUhZUk44REE&mode=public&ddrp=1#>
 - Instructions how to use the template
 - <http://altom.ro/blog/version-2-1-of-the-sbtm-session-template-was-released>
 - <http://altom.ro/itester#SBTM>
- <https://docs.google.com/spreadsheets/d/1iyuDZyINzaNO6fimpVUqDC7RVehrq6-k7u8sMC36ks/edit#gid=0>



Session Based Test Management [SBTM]

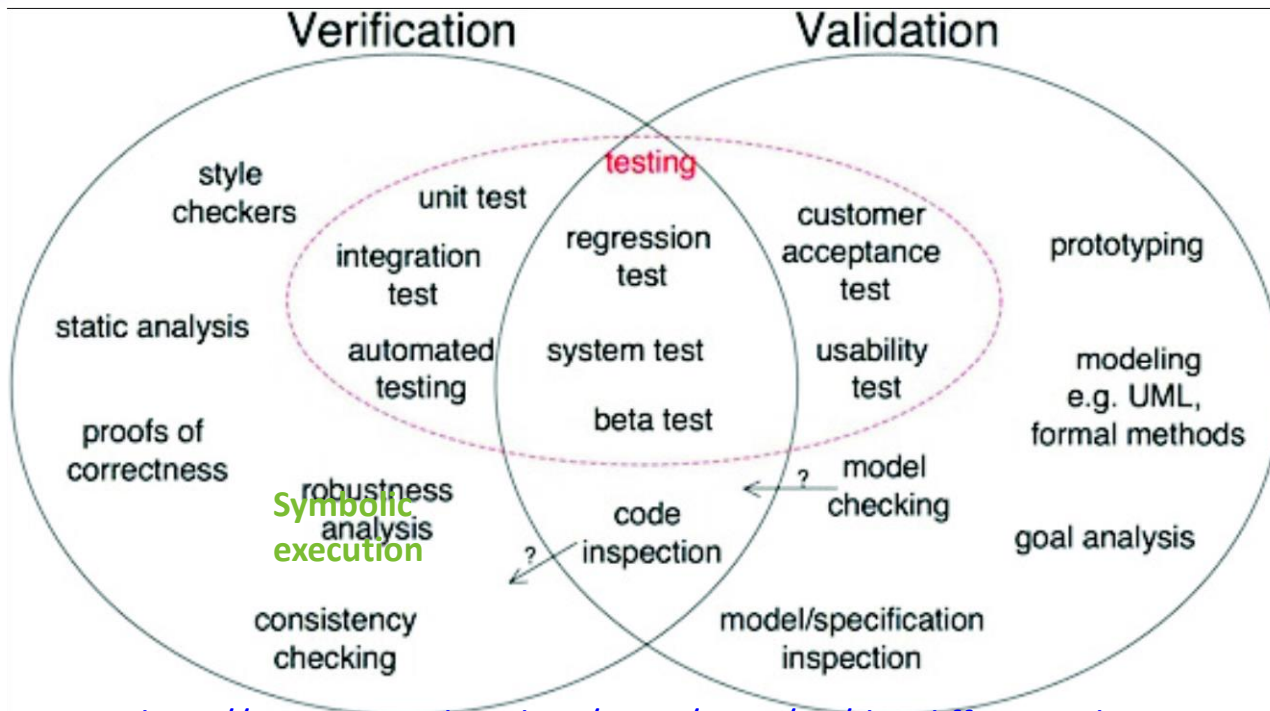
- **Demo: Session Testing**
- **Mission: Secret mission**
- **Time: 20 minute**
- **Debriefing: PROOF**
 - **Past + Results + Outlook + Obstacles + Feeling**

Outline

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- **Sales paradigm – SSVV**
- Surprises!

Sales paradigm - SSVV

- Motivate the STUDENT - what you will learn!



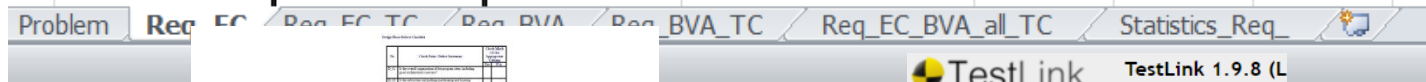
Reporting
the bug

Security
Testing

Agile
Testing

- <http://www.easterbrook.ca/steve/2010/11/the-difference-between-verification-and-validation/>

- Overcome STUDENTS's objections



Regulatory Photo Safety Checklist			Spotify account?	
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[illegible]

53_BBT (2)

34-50:TestCase1

34-51:TestCase2

📁 arie1653_BigBang (4)

tc934-344:TCA

345:TCB

346:TCC

347:TCAll

IncrementalT (3)

341:TC1

342:TC2

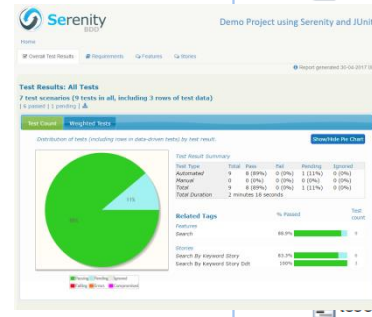
343:TC3

WBT (3)

338:TC1

339:TC2

340:TC3



What testing looks like in real life

Alex & Ru - Altom

Introduction to automation testing



VERIFICATION & VALIDATION DURING THE SOFTWARE DEVELOPMENT LIFE CYCLE

PRESENTERS:
ROXANA ONAC



- 
- Thank You For Your Attention!