



Software Technology 03

Software Development Models
and Methodologies

Developers are Different



Tasks are Different

Consider managing and estimating the following

- Trendy, design oriented web development company (making web shops)
- Outsourcing company delivering information systems
- Game developer company delivering on multiple platforms



→ Important thing is

Know your

- Team
- Task
- (Technology)

– *in this order* –

Cowboy Coding or Code-and-fix

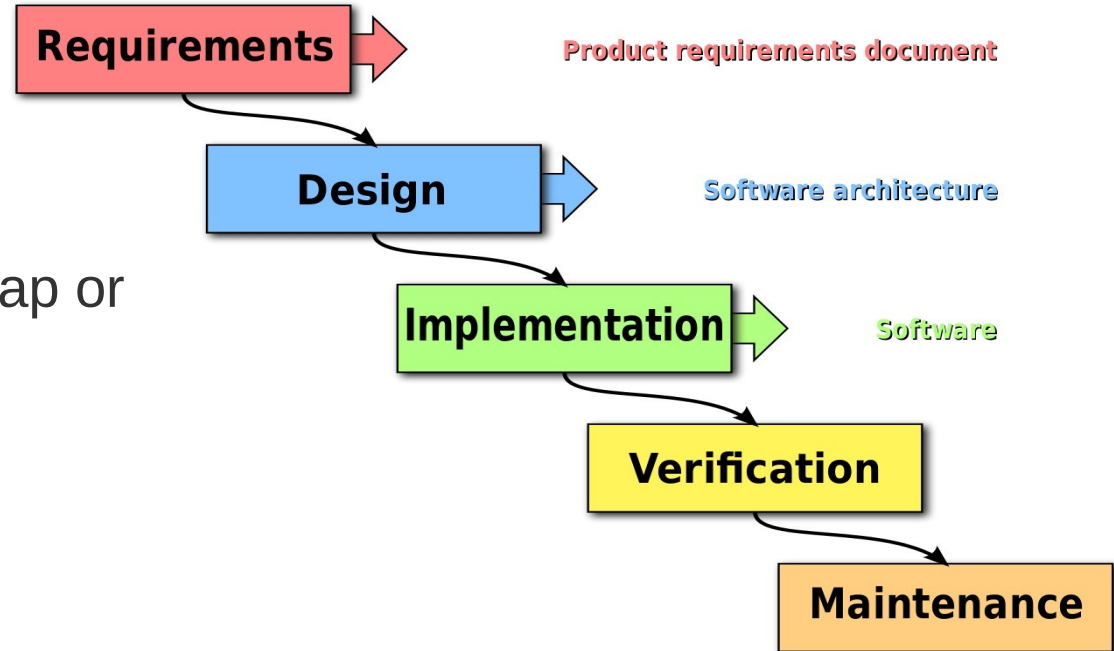
The Anti-pattern

- Coding immediately
- Bugs come, we fix them
- Sometimes we test
- Sometimes we release



Waterfall model

- Sequential phases, little overlap or feedback
- Schedules and target dates
- Implement all at once
- Tight control
- Document everything
- Big Design Up Front approach



Waterfall model

Good

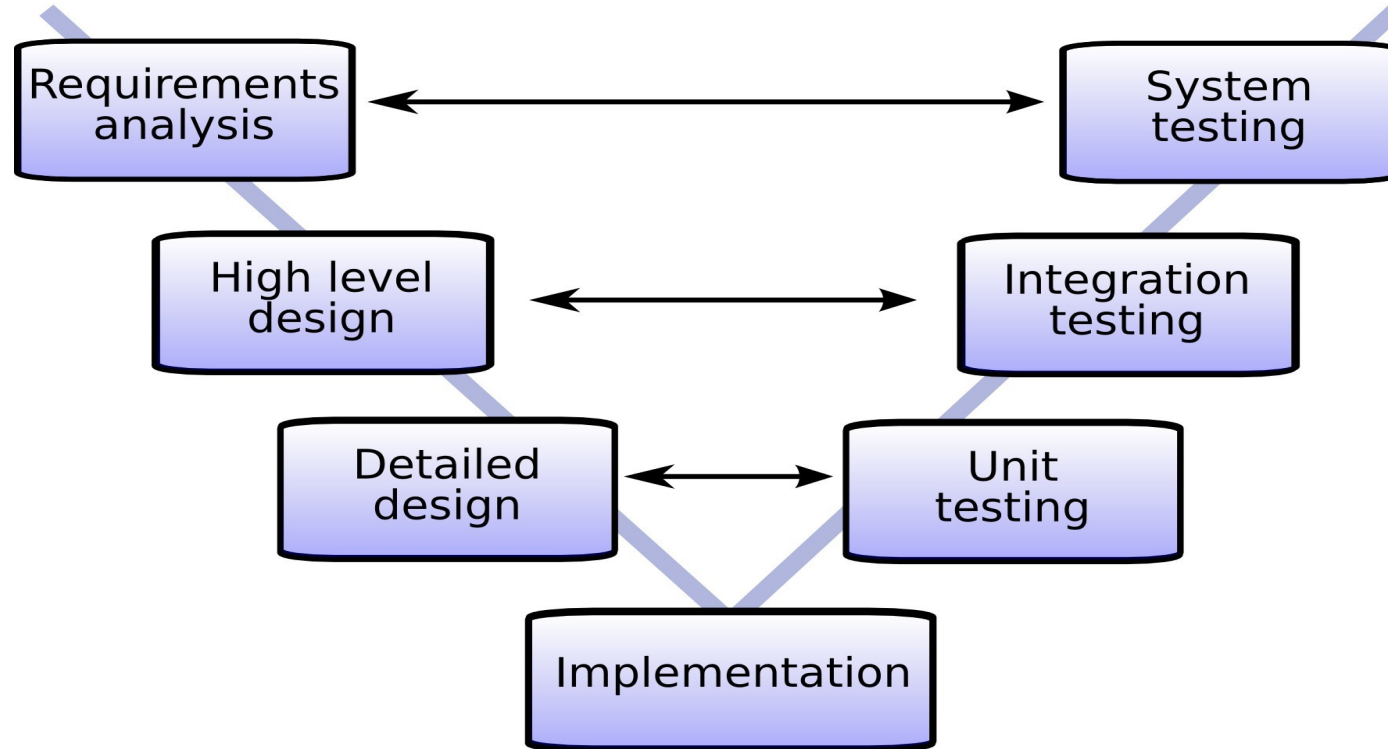
- Detailed analysis and planning reduces cost on later stages, may spot problems early
- Only 30% - 40% is implementation
- Structured approach leads to
 - Refined organization structure
 - Detailed documentation
 - Easy recovery (on team member change)
- Easy to monitor (everybody understands where we are)
- Works well if requirements, scope, technology is well understood

Bad

- If something is not understood well, like
 - Requirements
 - Scope
 - Technology
 - Goals, targets
- Too rigid, cannot handle problems with
 - Design
 - Major testing issuesMultiple things has to be redone then

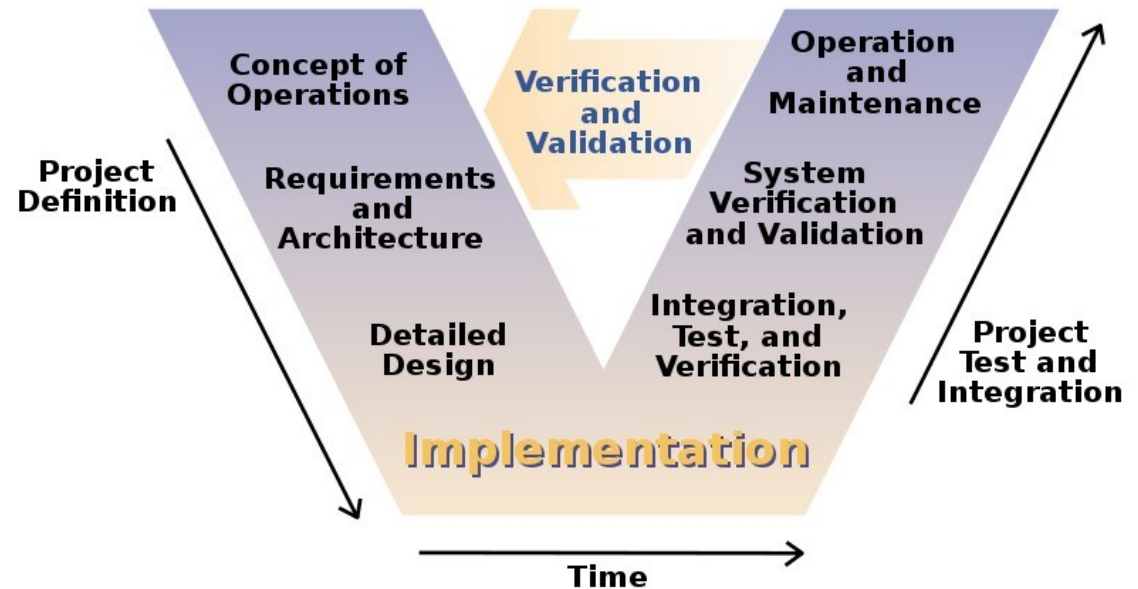
→ Modified Waterfall models

V-Model



V-Model

- Only A Modified Waterfall
- Has different Levels of Abstraction
- Pairs development and testing phases (but do not unifies them)



Prototyping

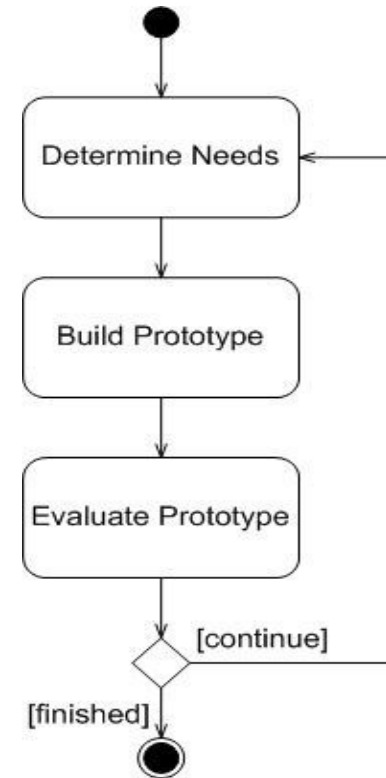
- Iterative approach

Prototypes are

- Horizontal (shallow, for User, GUI only)
- Vertical (drill down in a function / feature)

Prototyping can be

- Throwaway
- Evolutionary (prototype becomes product)
- Merging (or Incremental)



Prototyping

Good

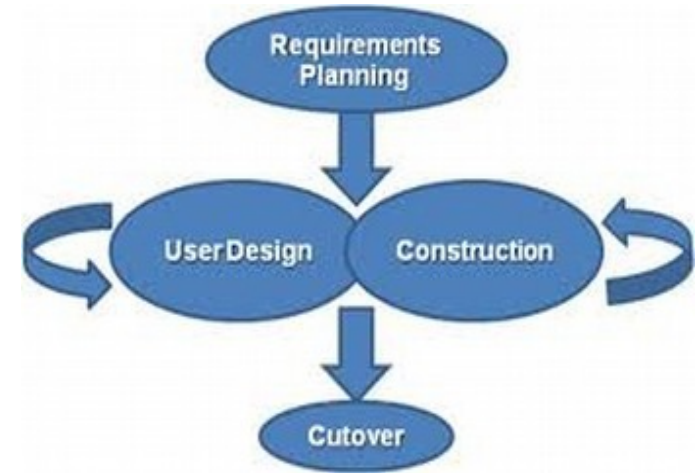
- Fast
- Cheap
- Quick User Feedback
- User/Customer Involvement

Bad

- No planning → problems later or too much iterations
- Too much iterations → Too much prototypes → becomes Expensive and too Long
- Developers dislike throwing away code
- Developers do not understand the real goals (they just have shallow GUI prototypes)

RAD

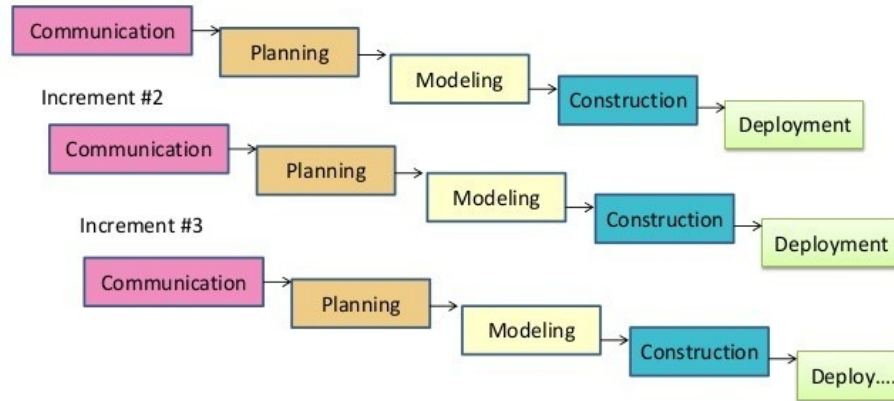
- Rapid Application Development
 - Flexible process to gather knowledge
 - Made for GUI and information systems
 - The golden age of GUI builders
-
- Usually trendy methods are good for certain type of projects / products where no unique solutions are needed (no risk of bad design, bad planning... similar as our previous project)



Going Incremental

Incremental Model (Diagram)

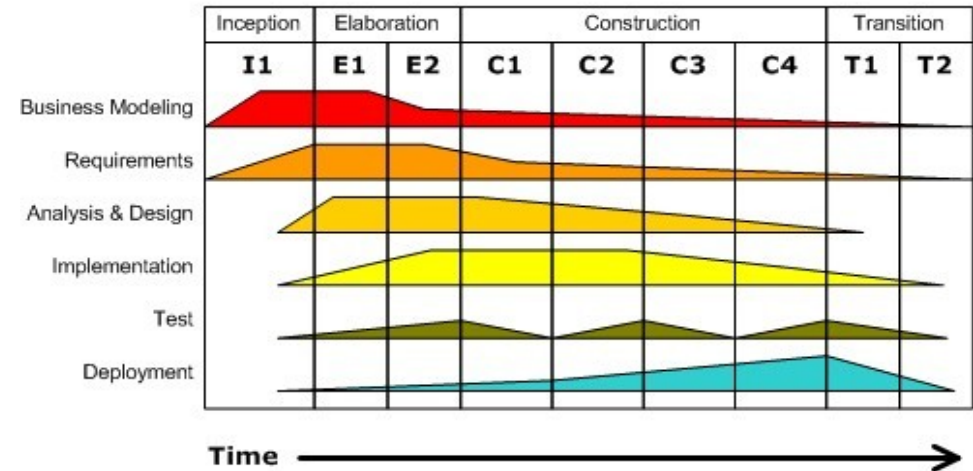
Increment #1



14

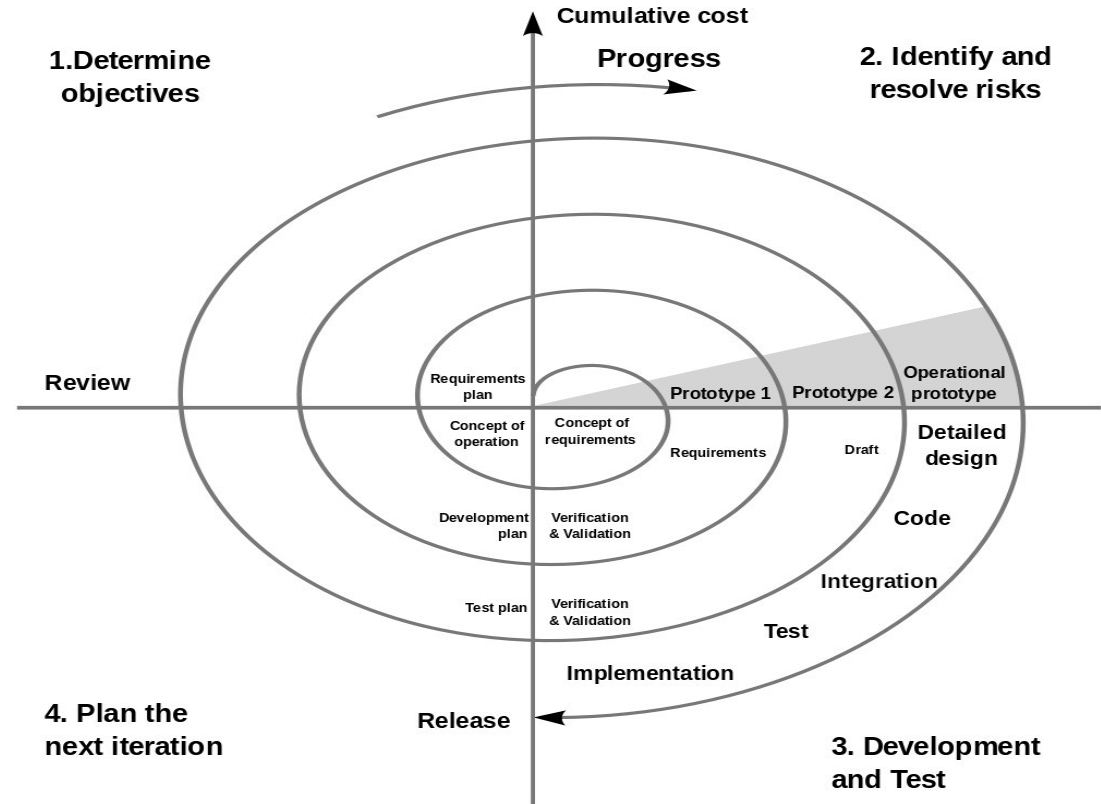
Iterative Development

Business value is delivered incrementally in time-boxed cross-discipline iterations.



Spiral model

- = Waterfall + Prototyping + Incremental
- Stakeholder perspective!
- Adaptive in
 - Planning depth (more risk, more detail)
 - Effort (more risk, more effort)



Chaos model



- Almost anti-pattern
- Lightweight model
- Definition, implementation and integration on all levels respectively
- Issue is just an incomplete, not well-defined task
- All **issues** are executed according to **categorization**
 - **Value** (to the user)
 - **Urgency**
 - **Robustness** (completeness)

Time Management Matrix

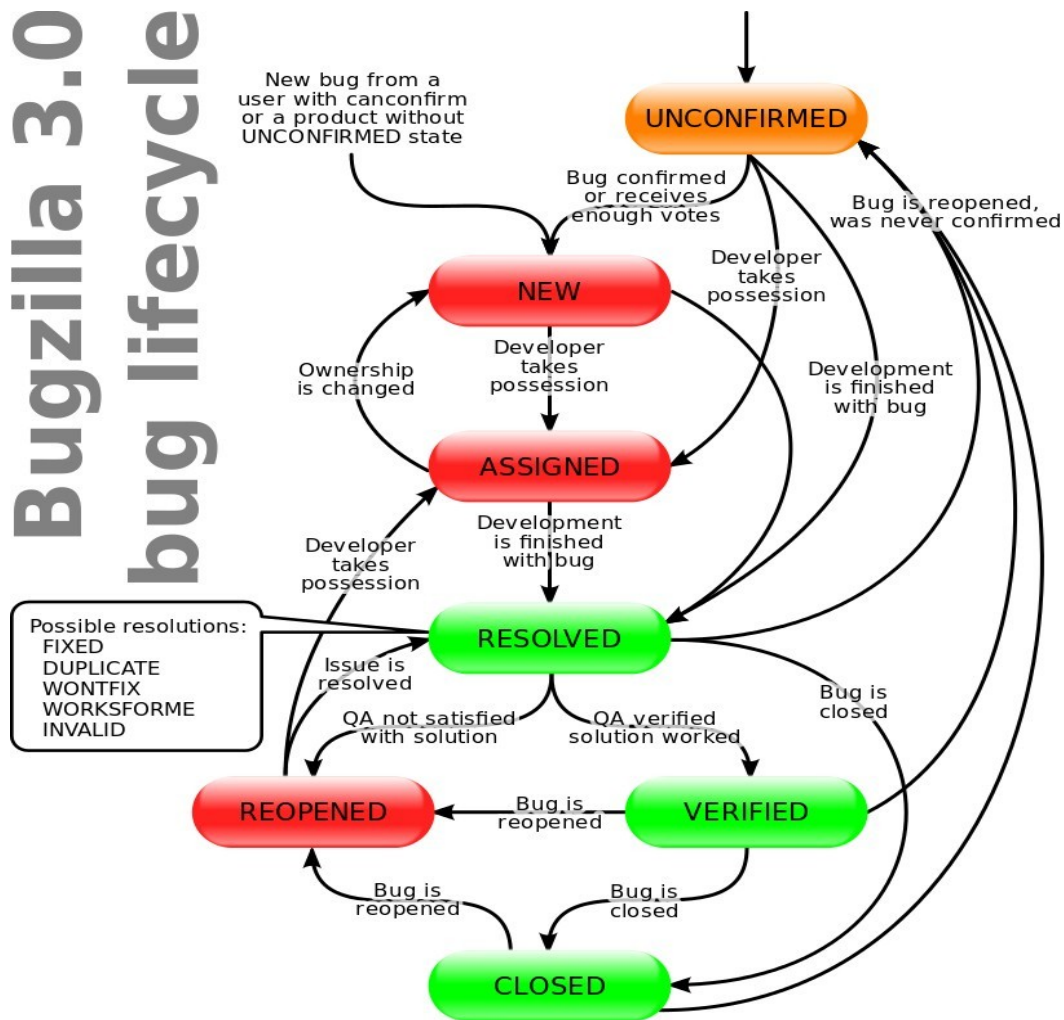
- *Stephen Covey*

	Urgent	Not Urgent
Important	Crying baby Kitchen fire Some calls 1	Exercise Vocation Planning 2
Not Important	3 Interruptions Distractions Other calls	4 Trivia Busy work Time wasters

	URGENT	NOT URGENT
IMPORTANT	DO IT NOW	PLAN IT
NOT IMPORTANT	DELEGATE	DROP IT

Issue Tracker Bug Life-cycle

Bugzilla 3.0 bug lifecycle



Trac Ticket

Ticket #507 (new defect)Modify ↓

Tasks

Opened 5 months ago
Last modified 2 weeks ago

Reported by:	jill	Owned by:	rafal
Priority:	blocker	Milestone:	
Component:	component1	Version:	
Keywords:		Cc:	
Release Notes:			
API Changes:			

Description

Rafal,Reply

I am generally having problems with the system. I have been unable to edit a task or create a new one. I get an error message that the form contain errors" but no specific error mentioned and I have reviewed it several times and don't think I am entering it incorrectly. Attached is a screen shot, but I am not sure how much help this will be.

Any chance the guys working on my website screwed something up? Just noticed this today, but I was not working in the system very much since last Wednesday when they first added the home page. Also, I could not edit a calendar event to send an invite.

▼ Attachments

Trac Ticket Data



logged in as cmlenz | [Logout](#) | [Settings](#) | [Help/Guide](#) | [About Trac](#)

[Wiki](#) | [Timeline](#) | [Roadmap](#) | [Browse Source](#) | [View Tickets](#) | [New Ticket](#) | [Search](#) | [Admin](#)

Administration

- General
- Permissions
- Plugins
- Ticket System
 - Components
 - Priorities**
 - Severities
 - Ticket Types
 - Versions

Manage Priorities

	Name	Default	Order
<input type="checkbox"/>	highest	<input type="radio"/>	1
<input type="checkbox"/>	high	<input type="radio"/>	2
<input type="checkbox"/>	normal	<input checked="" type="radio"/>	3
<input type="checkbox"/>	low	<input type="radio"/>	4
<input type="checkbox"/>	lowest	<input type="radio"/>	5

Add Priority

Name:

You can remove all items from this list to completely hide this field from the user interface.

Mantis Issue

203.129.204.52/teams/view_all_bug_page.php

any closed (And Above) any

Show: View Status: Show Sticky Issues: Changed(hrs): Use Date Filters: Relationships:

50 any Yes 6 No any

Platform: OS: OS Version: Tags:

any any any

Note By: any Sort by: Updated Descending

Match Type: All Conditions

Search Apply Filter [Advanced Filters] [Create Permalink] [Reset Filter] Use Filter Manage Filters Save Current Filter

Viewing Issues (1 - 50 / 52) [Print Reports] [CSV Export] [Excel Export] [First Prev 1 2 Next Last]

	P	ID	#	Category	Severity	Status	Date Submitted	Updated	Summary
		0013141		Application Crashes	crash	new	2013-06-29	2013-06-29	Module1--session1---add button is not working
		0013140	3	Change Request	minor	assigned	2013-06-29	2013-06-29	Test feature
		0012993		Functional	minor	assigned (debasisa)	2013-06-24	2013-06-24	test
		0010579	2	Application Crashes	minor	resolved (Test)	2013-03-04	2013-06-18	sdfsd
		0011494	5	Application Crashes	minor	resolved (debasisa)	2013-04-12	2013-06-18	test1111
		0011929	3	Functional	minor	resolved (debasisa)	2013-05-06	2013-06-18	Test Issue changes
		0012881	2	Functional	minor	resolved (debasisa)	2013-06-18	2013-06-18	Test feature
		0012880	1	Functional	minor	feedback	2013-06-18	2013-06-18	Test feature
		0011010	6 2	Functional	minor	resolved (sarajb)	2013-03-20	2013-05-24	Test New11

Mantis Issue Data



3: jamesguru (Guru99 - reporter)

2014-11-18 01:23 EST

[My View](#) | [View Issues](#) | [Report Issue](#) | [Change Log](#) | [Roadmap](#) | [Wiki](#) | [IRC Chat](#) | [Repositories](#) | [My Account](#) | [Log Out](#)

Enter Report Details	
*Category	1 security
Reproducibility	2 always
Severity	3 crash
Priority	4 immediate
Select Profile	
Or Fill In	
Platform	5 JAVA
OS	Windows
OS Version	7
Product Version	1.1.0
*Summary	6 Due to security reasons, part of your code are blocked:
*Description	7 Unable to import any-type of library,due to security reason
Steps To Reproduce	8 Library should import and the content related to library should execute
Additional Information	
Upload File (Maximum size: 2,097k)	Browse... SecurityBug.png
View Status	<input checked="" type="radio"/> public <input type="radio"/> private
Report Stay	<input checked="" type="checkbox"/> check to report more issues
* required	
9 Submit Report	

Bug Triage

- Collect information (enough?)
 - Identify duplicates / similar problems
 - How to reproduce?
 - Set Priority + Importance
 - Assign
-
- Fast paced
 - Face-to-face (real-time)
 - (Support levels)

ELTE IK - Software Technology

CONTAMINATED

Personal Property Receipt, Evidence Tag

Destination _____ Via _____

TRIAGE TAG

☐ S ☐ L ☐ U ☐ D ☐ G ☐ E

Salivation Lacrimation Urination Defecation G.I. Distress Emesis

AUTO INJECTOR ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Yes No Gross Decon
Yes No Secondary Decon

Solution

Blunt Trauma
Burn
C-Spine
Cardiac
Crushing
Fracture
Laceration
Penetrating Injury

Age _____

☐ Male ☐ Female

Other: _____

VITAL SIGNS

Time	B/P	Pulse	Respiration

Time	Drug Solution	Dose

EVIDENCE

MORGUE
Pulseless/Non-Breathing

IMMEDIATE
Life Threatening Injury

DELAYED
Serious, Non Life Threatening

MINOR
Walking Wounded