LTI
Let's Solve

Celebrating 20 Years

Agile

Larsen & Toubro
Group Company

Agenda

- Introduction
- What is Agile Methodology?
- What is Scrum?
- History of Scrum
- Functionality of Scrum
- Components of Scrum
  - Scrum Roles
  - The Process
  - Scrum Artifacts
- Scaling Scrum
- Q & A Session

Introduction

Agile software development methodology is an process for developing software (like other software development methodologies – Waterfall model, V-Model, Iterative model etc.)

Classical methods of software development have many disadvantages:

- Huge effort during the planning phase
- Poor requirements conversion in a rapid changing environment
- Treatment of staff as a factor of production

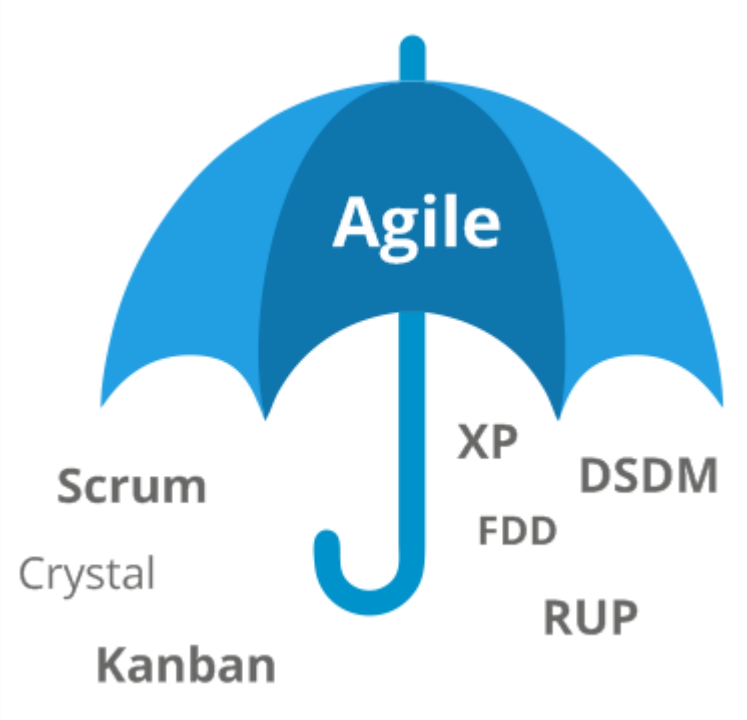
However, Agile methodology differs significantly from other methodologies. In English, Agile means ‘ability to move quickly and easily’ and responding swiftly to change – this is a key aspect of Agile software development as well.

What is Agile ?

- **Agile proponents believe**
  - Current software development processes are too heavyweight or cumbersome
    - Too many things are done that are not directly related to software product being produced
  - Current software development is too rigid
    - Difficulty with incomplete or changing requirements
    - Short development cycles (Internet applications)
  - More active customer involvement needed
    - CMM focuses on process

Contd…

- Agile methods are considered
  - Lightweight
  - People-based rather than Plan-based
- Several agile methods
  - No single agile method
- No single definition
- Agile Manifesto closest to a definition
  - Set of principles
  - Developed by Agile Alliance



Agile Manifesto

A Statement of Values

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

Agile Methods

- **Agile methods:**
  - Scrum
  - Extreme Programming
  - Adaptive Software Development (ASD)
  - Dynamic System Development Method (DSDM)
  - And many more..
- Agile Alliance (www.**agilealliance**.org)
  - A non-profit organization promotes agile development

Scrum

SCRUM

Focus on delivering the highest business value in the shortest time.

Allows us to rapidly and repeatedly inspect actual working software

Focus on delivering the highest business value in the shortest time.

Every iteration gives concrete solution which can be viewed by team

Every two weeks to a month anyone can see real working software.

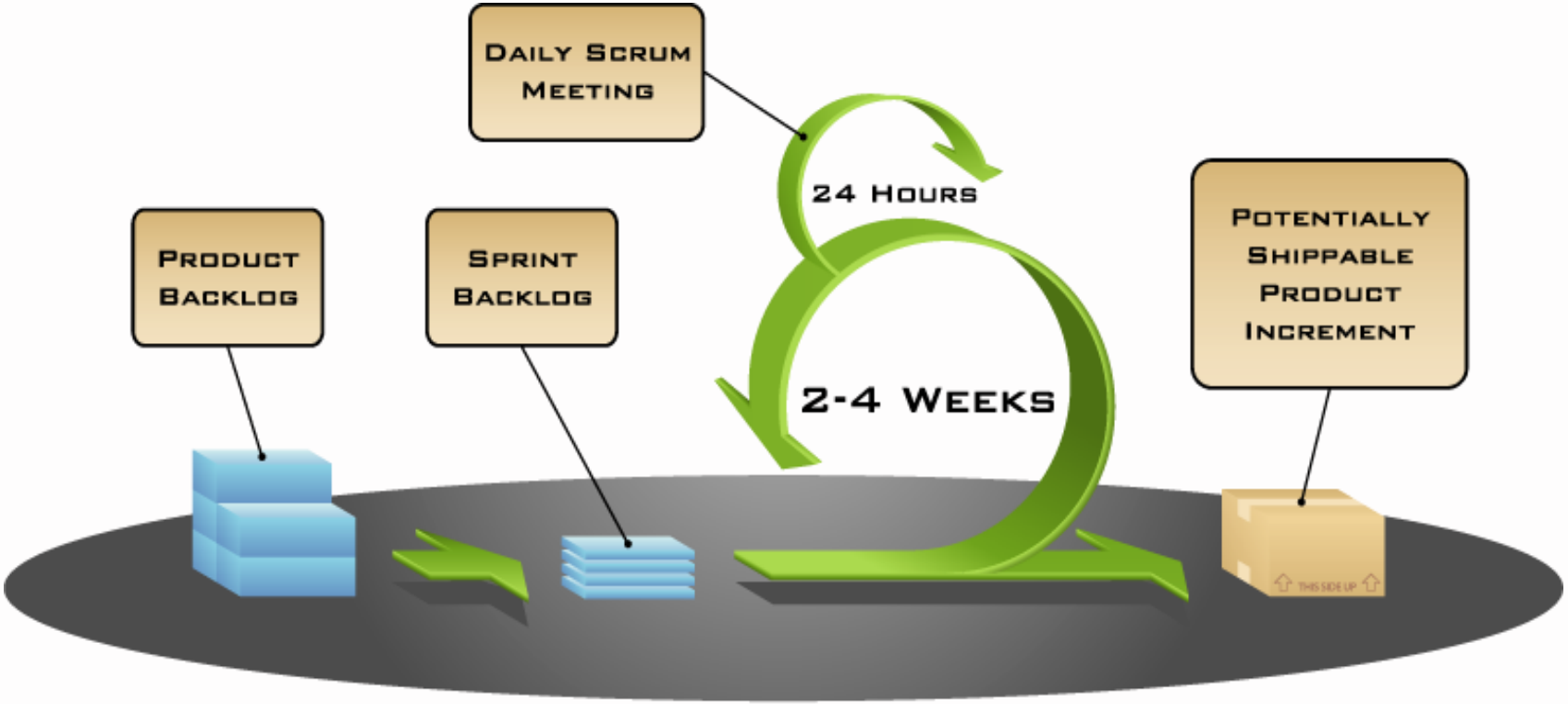
Identifies and evaluate potential project risks and process pitfalls.

Open for changes, easy modifications, flexible construction.

Characteristics

- Self-organizing teams
- Product progresses in a series of month-long “sprints”
- Requirements are captured as items in a list of “product backlog”
- No specific engineering practices prescribed
- Uses generative rules to create an agile environment for delivering projects
- One of the “agile processes”

How Scrum Works?

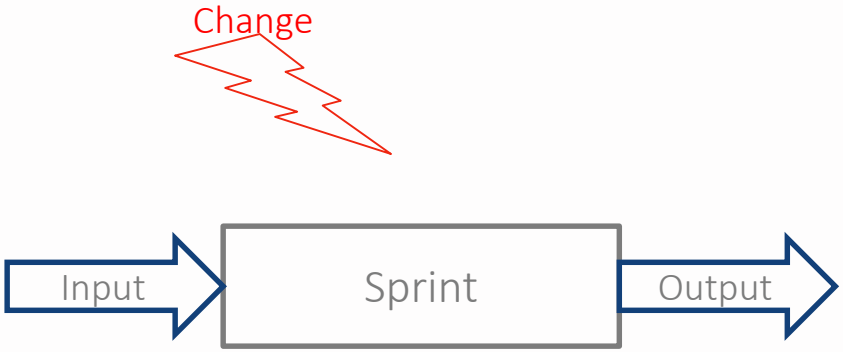


Sprints

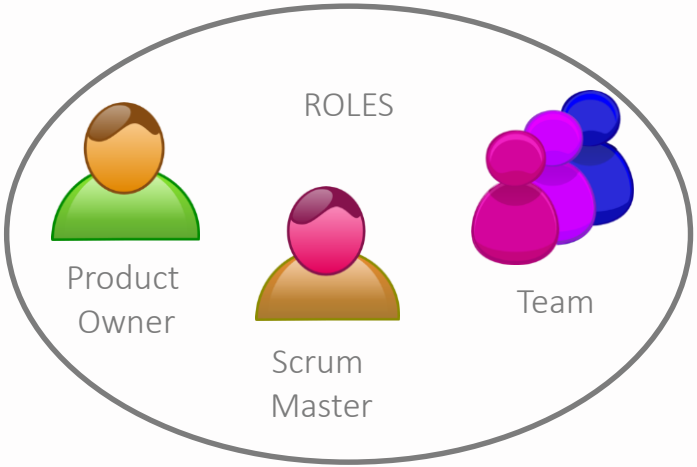
- Scrum projects make progress in a series of “sprints”
  - Analogous to XP iterations
- Target duration is one month
  - +/- a week or two
    - But, a constant duration leads to a better rhythm
- Product is designed, coded, and tested during the sprint

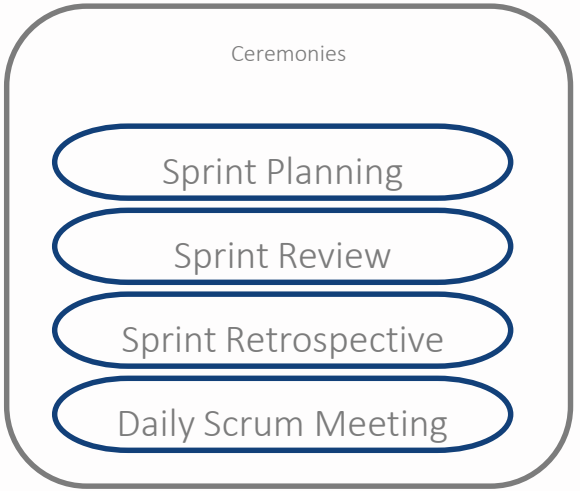
No changes during the sprint

- Plan sprint durations around how long you can commit to keeping change out of the sprint

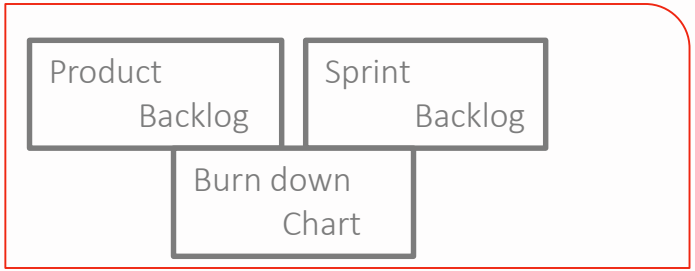


Scrum Framework





Artifacts



Product Owner

- Define the features of the product
- Decide on release date and content
- Be responsible for the profitability of the product
- Prioritize features according to market value
- Adjust features and priority every iteration, as needed
- Accept or reject work results.

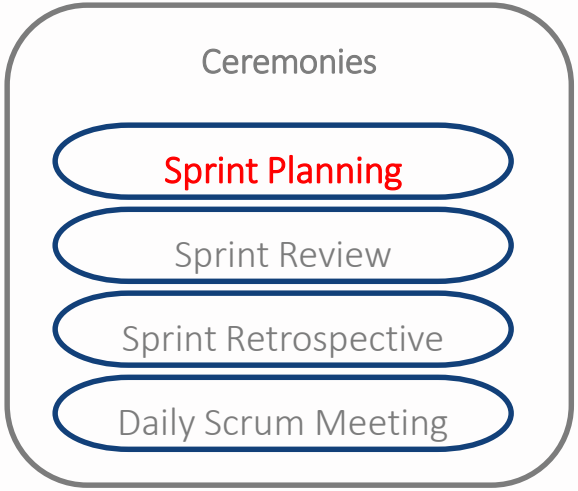
The Scrum Master

- Represents management to the project
- Responsible for enacting Scrum values and practices
- Removes impediments
- Ensure that the team is fully functional and productive
- Enable close cooperation across all roles and functions
- Shield the team from external interferences

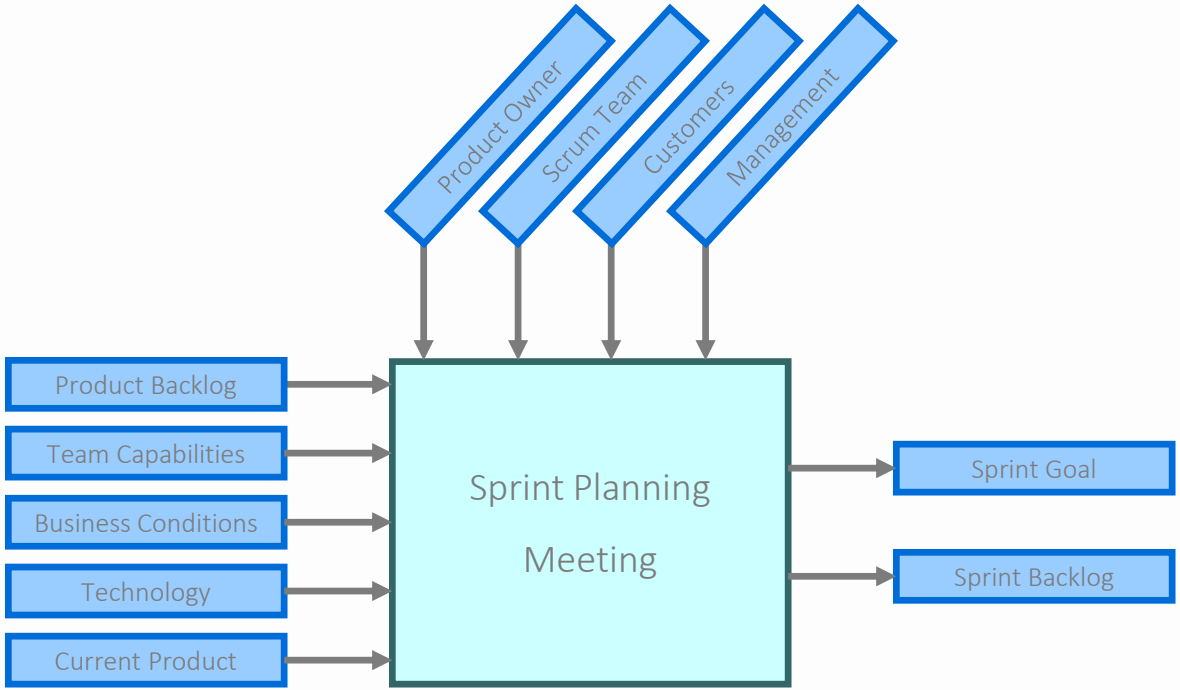
Scrum Team

- Typically 5-10 people
- Cross-functional
  - QA, Programmers, UI Designers, etc.
- Members should be full-time
  - May be exceptions (e.g., System Admin, etc.)
- Teams are self-organizing
  - What to do if a team self-organizes someone off the team??
  - Ideally, no titles but rarely a possibility
- Membership can change only between sprints

Ceremonies



Spring Planning Meeting



Parts of Sprint Planning Meeting

- **1st Part:**
  - Creating Product Backlog
  - Determining the Sprint Goal.
  - Participants: Product Owner, Scrum Master, Scrum Team
- **2nd Part:**
  - Participants: Scrum Master, Scrum Team
  - Creating Sprint Backlog

Pre-Project/Kickoff Meeting

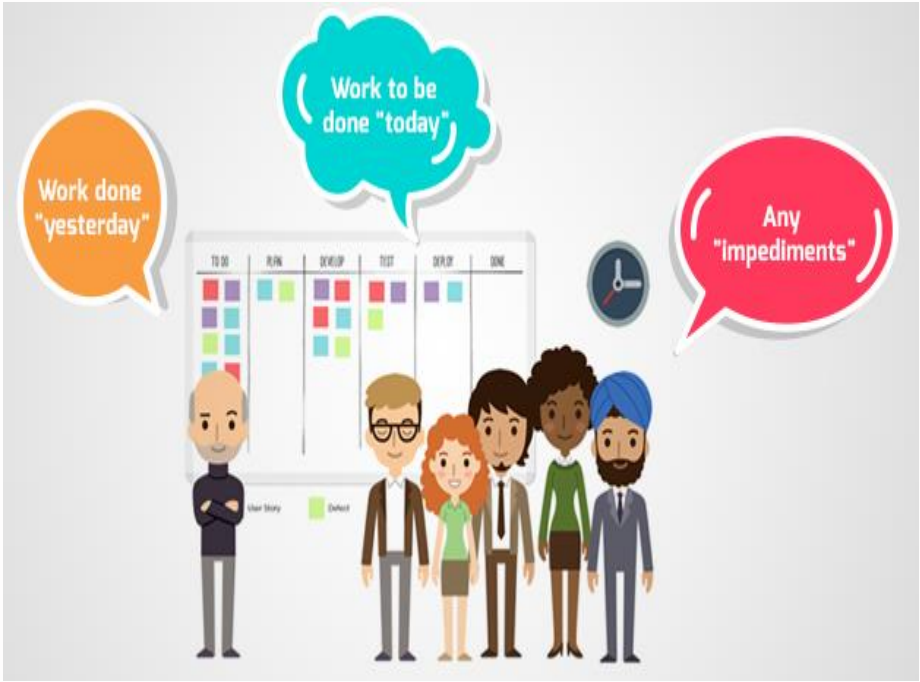
- A special form of Sprint Planning Meeting
- Meeting before the begin of the Project

Sprint

- A month-long iteration, during which is incremented a product functionality
- NO outside influence can interfere with the Scrum team during the Sprint
- Each Sprint begins with the Daily Scrum Meeting

Daily Scrum

- **Parameters**
  - Occurrence - Daily
  - Time Box - 15-minutes
  - Meeting Type - Stand-up
  - Facilitated by - Scrum Master
  - **Not for problem solving**
- **Three questions:**
  1. What did you do yesterday
  2. What will you do today?
  3. What obstacles are in your way?



Daily Scrum

- Is NOT a problem solving session
- Is NOT a way to collect information about WHO is behind the schedule
- Is a meeting in which team members make commitments to each other and to the Scrum Master
- Is a good way for a Scrum Master to track the progress of the Team

Sprint Review Meeting

- Team presents what it accomplished during the sprint
- Typically takes the form of a demo of new features or underlying architecture
- Informal
  - 2-hour prep time rule
- Participants
  - Customers
  - Management
  - Product Owner
  - Other engineers

Sprint Retrospective Meeting

- Sprint Retrospective is about identifying areas of improvement to make the next sprint better
- Scrum Team only
- Feedback meeting
- Three questions
  - What worked well?
  - What could be improved?
  - What will team commit to do in next sprint?
- Scrum team members makes actionable commitments

Scrum Board

Epic - Is simply a story, but is considered so large that it needs to be broken down into multiple stories.

Story - Is essentially a requirement that is in a low enough detail that it can be estimated.

Task - Developers, testers may break the story down further into tasks to allow them to estimate, develop and test it.

Product Backlog

- A list of all desired work on the project
  - Usually a combination of
    - story-based work (“let user search and replace”)
    - task-based work (“improve exception handling”)
- List is prioritized by the Product Owner
  - Typically a Product Manager, Marketing, Internal Customer, etc.

Product Backlog

- Requirements for a system, expressed as a prioritized list of Backlog Items
- Is managed and owned by a Product Owner
- Spreadsheet (typically)
- Usually is created during the Sprint Planning Meeting
- Can be changed and re-prioritized before each PM

Sample Product Backlog

	Item #	Description	Est	By
Very High				
	1	**Finish database versioning**	16	KH
	2	**Get rid of unneeded shared Java in database**	8	KH
	-	**Add licensing**	-	-
	3	Concurrent user licensing	16	TG
	4	Demo / Eval licensing	16	TG
		Analysis Manager		
	5	File formats we support are out of date	160	TG
	6	Round-trip Analyses	250	MC
High				
	-	**Enforce unique names**	-	-
	7	In main application	24	KH
	8	In import	24	AM
	-	**Admin Program**	-	-
	9	Delete users	4	JM
	-	**Analysis Manag**	-	-
	10	When items ar up again in the	8	TG
	-	**Query**	-	-
	11	Support for wil	16	T&A
	12	Sorting of numl	16	T&A
	13	Horizontal scro	12	T&A
	-	**Population Gen**	-	-
	14	Frequency Ma	400	T&M
	15	Query Tool	400	T&M
	16	Additional Edit	240	T&M
	17	Study Variable	240	T&M
	18	Haplotypes	320	T&M
	19	**Add icons for v**	-	-
	-	**Pedigree Manager**	-	-
	20	Validate Derived kindred	4	KH
Medium				
	-	**Explorer**	-	-
	21	Launch tab synchronization (only show queries/analyses for logged in users)	8	T&A
	22	Delete settings (?)	4	T&A

From Sprint Goal to Sprint Backlog

- Scrum team takes the Sprint Goal and decides what tasks are necessary
- Team self-organizes around how they'll meet the Sprint Goal
  - Manager doesn't assign tasks to individuals
- Managers don't make decisions for the team
- Sprint Backlog is created

Sprint Backlog during the Sprint

- Changes
  - Team adds new tasks whenever they need to in order to meet the Sprint Goal
  - Team can remove unnecessary tasks
  - But: Sprint Backlog can only be updated by the team
- Estimates are updated whenever there’s new information

Sprint Backlog

- A subset of Product Backlog Items, which define the work for a Sprint
- Is created ONLY by Team members
- Each Item has it’s own status
- Should be updated every day

Sprint Backlog

- No more than 300 tasks in the list
- If a task requires more than 16 hours, it should be broken down
- Team can add or subtract items from the list. Product Owner is not allowed to do it

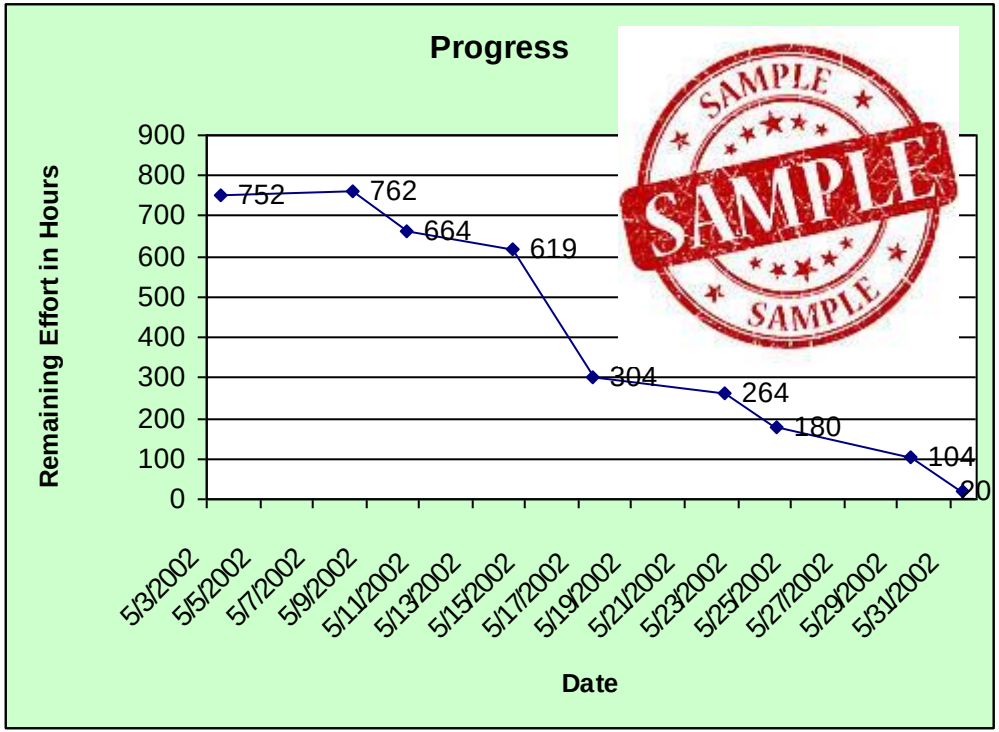
Sample Sprint Backlog

		Days Left in Sprint	15	13	10	8	
Who	Description		7/22/2002	7/24/2002	7/26/2002	7/31/2002	
		Total Estimated Hours:	554	458	362	270	0
-	**User's Guide**		-	-	-	-	-
SM	Start on Study Variable chapter first draft		16	16	16	16	
SM	Import chapter first draft		40	24	6	6	
SM	Export chapter first draft		24	24	24	6	
	Misc. Small Bugs						
JM	Fix connection leak		40				
JM	Delete queries		8	8			
JM	Delete analysis		8	8			
TG	Fix tear-off messaging bug		8	8			
JM	View pedigree for		2	2	2	2	
AM	Derived kindred v		8				
	Environment						
TG	Install CVS		16	16			
TBD	Move code into C		40	40	40	40	
TBD	Move to JDK 1.4		8	8	8	8	
	Database						
KH	Killing Oracle ses		8	8	8	8	
KH	Finish 2.206 data		8	2			
KH	Make a 2.207 da		8	8	8	8	
KH	Figure out why 4		4				

Sprint Burn down Chart

- Depicts the total Sprint Backlog hours remaining per day
- Shows the estimated amount of time to release
- Ideally should burn down to zero to the end of the Sprint
- Actually is not a straight line
- Can bump UP

Sprint Burn down Chart

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