# An Introduction to User Stories

## Mike Cohn
### 11 November 2009

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# Mike Cohn - background
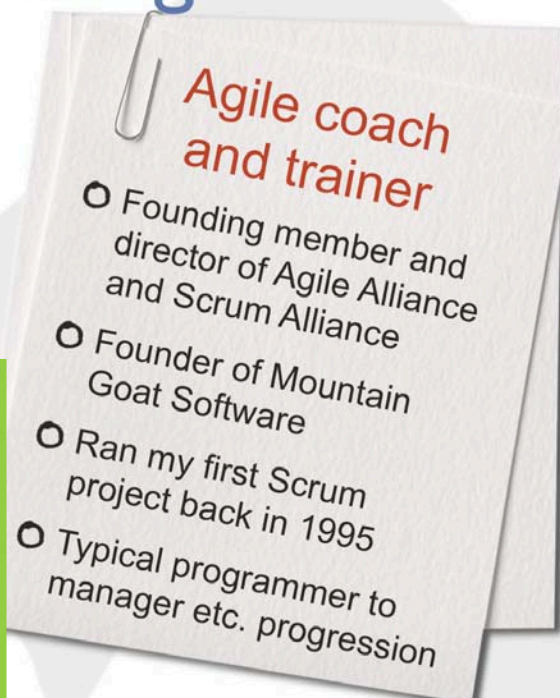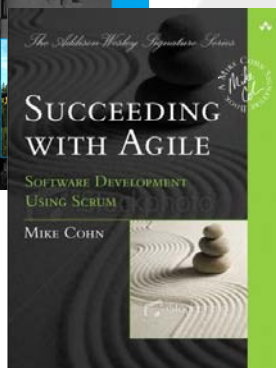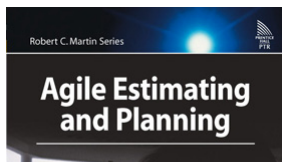
**Agile coach and trainer**

- Founding member and director of Agile Alliance and Scrum Alliance
- Founder of Mountain Goat Software
- Ran my first Scrum project back in 1995
- Typical programmer to manager etc. progression

Agile Estimating and Planning
Robert C. Martin Series

USER STORIES APPLIED
FOR AGILE SOFTWARE DEVELOPMENT
MIKE COHN
Foreword by Kent Beck

SUCCEEDING WITH AGILE
SOFTWARE DEVELOPMENT USING SCRUM
MIKE COHN

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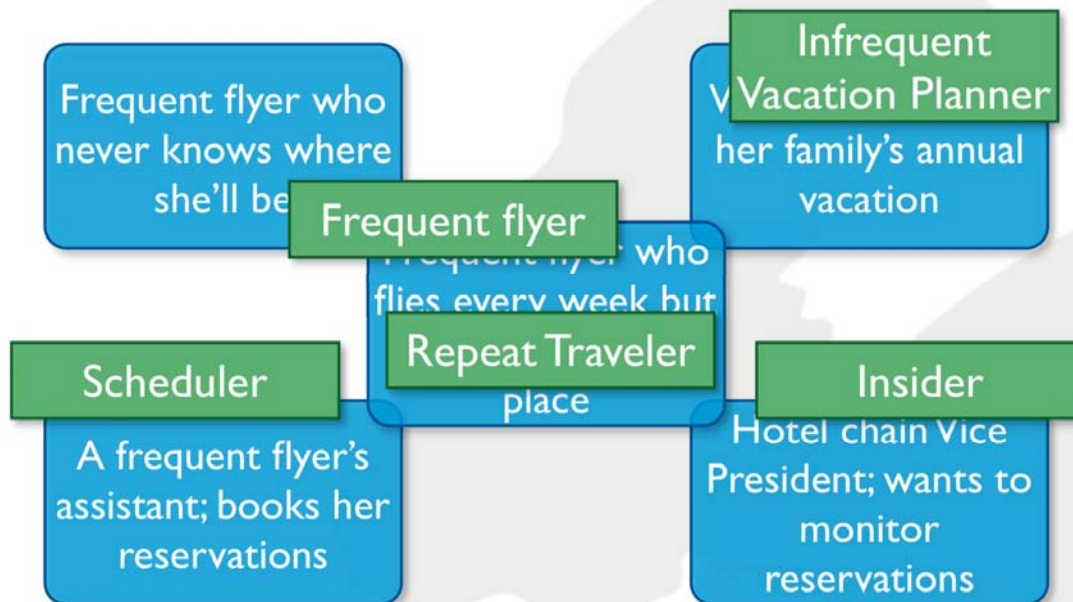
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# "The User"

- Many projects mistakenly assume there's only one user:
  - "The user"
- Write all stories from one user's perspective
- Assume all users have the same goals
- Leads to missing stories

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# Common attributes



Frequent flyer who never knows where she'll be

Frequent flyer

Frequent flyer who flies every week but

Repeat Traveler
place

Infrequent Vacation Planner
her family's annual vacation

Scheduler

A frequent flyer's assistant; books her reservations

Insider
Hotel chain Vice President; wants to monitor reservations

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# User roles

- Broaden the scope from looking at one user
- Allows users to vary by
  - What they use the software for
  - How they use the software
  - Background
  - Familiarity with the software / computers
- Used extensively in usage-centered design

Source: *Software for Use* by
Constantine and Lockwood (1999).

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# Habbo Hotel user roles

- Achievers
- Creatives
- Rebels
- Loners
- Traditionals

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# System and programmer users

As the payment verification system, I want all transactions to be well-formed XML.

As a programmer, I want an API for deleting widgets from the database.

# Advantages of using roles

| | |
|---|---|
| **Users become tangible** | Start thinking of software as solving needs of real people. |
| **Avoid saying "the user"** | Instead we talk about "a frequent flyer" or "a repeat traveler" |
| **Incorporate roles into stories** | "As a <user role>, I want to <goal> so that <benefit>." |

## What Stories Are

# The three Cs of a user story

| Card | • Stories are traditionally written on note cards.<br>• Cards may be annotated with estimates, notes, etc. |

| Conversation | • Details behind the story come out during conversations with product owner |

| Confirmation | • Acceptance tests confirm the story was coded correctly |

Source: XP Magazine 8/30/01, Ron Jeffries.

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# Samples from a travel website

As a user, I want to reserve a hotel room.

As a vacation planner, I want to see photos of the hotels.

As a user, I want to cancel a reservation.

As a frequent flyer, I want to rebook a past trip, so that I save time booking trips I take often.

## Split this into (at least) five stories

- As a registered user, I am required to login before being able to use the system.

### Use this template

"As a <user role>,
I want <goal>
so that <reason>."

# Where are the details?

- As a user, I can cancel a reservation.
  - Does the user get a full or partial refund?
    - Is the refund to her credit card or is it site credit?
  - How far ahead must the reservation be cancelled?
    - Is that the same for all hotels?
    - For all site visitors? Can frequent travelers cancel later?
  - Is a confirmation provided to the user?
    - How?

# Details as conditions of satisfaction

- The product owner's conditions of satisfaction can be added to a story
  - These are essentially tests

As a user, I can cancel a reservation.

☐ Verify that a premium member can cancel the same day without a fee.
☐ Verify that a non-premium member is charged 10% for a same-day cancellation.
☐ Verify that an email confirmation is sent.
☐ Verify that the hotel is notified of any cancellation.

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# Details added in smaller sub-stories

As a user, I can cancel a reservation.

As a premium site member, I can cancel a reservation up to the last minute

As a non-premium member, I can cancel up to 24 hours in advance.

As a site visitor, I am emailed a confirmation of any cancelled

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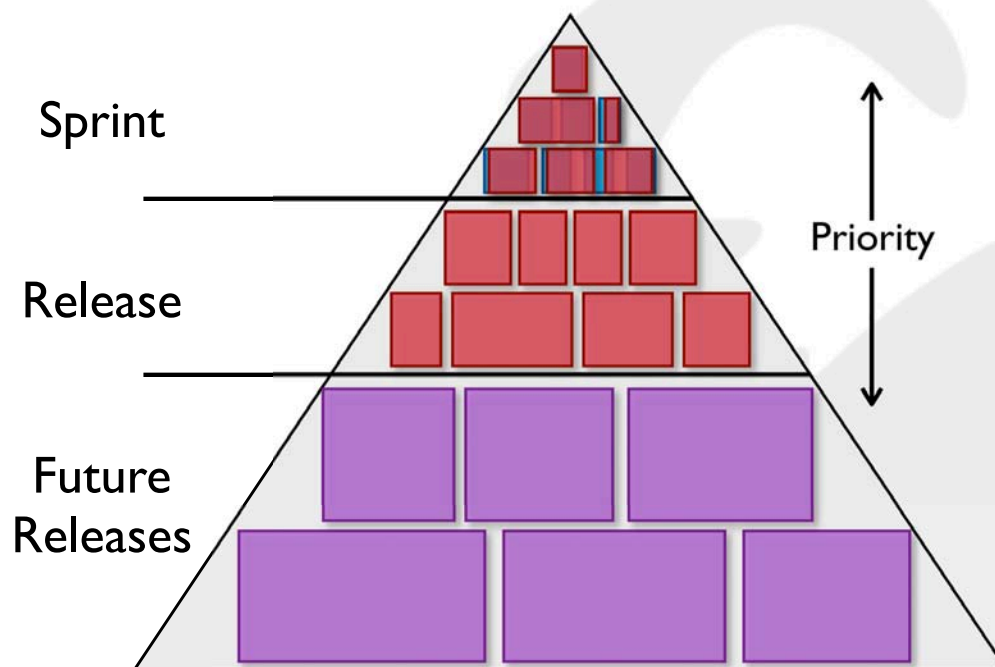
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# Techniques can be combined

- These approaches are not mutually exclusive

- Write stories at an appropriate level

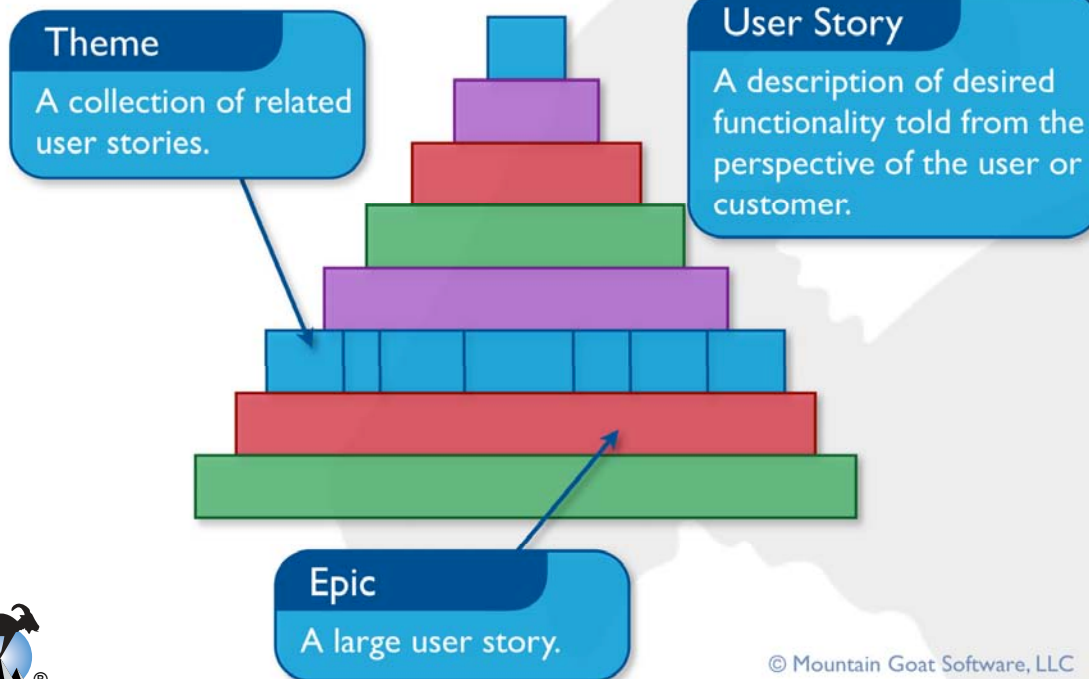- By the time it's implemented, each story will have conditions of satisfaction associated with it

# The product backlog iceberg



Sprint

Release

Future
Releases

Priority

# Stories, themes and epics



**Theme**
A collection of related user stories.

**User Story**
A description of desired functionality told from the perspective of the user or customer.

**Epic**
A large user story.

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# An example

As a VP Marketing, I want to review the performance of historical promotional campaigns so that I can identify and repeat profitable ones.

Clearly an epic

As a VP Marketing, I want to select the timeframe to use when reviewing the performance of past promotional campaigns, so that I can identify and repeat profitable ones.

Epics??

As a VP Marketing, I can select which type of campaigns (direct mail, TV, email, radio, etc.) to include when reviewing the performance of historical promotional campaigns.

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# An example

As a VP Marketing, I want to see information on direct mailings when reviewing historical campaigns.

As a VP Marketing, I want to see information on television advertising when reviewing historical campaigns.

As a VP Marketing, I want to see information on email advertising when reviewing historical campaigns.

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# Finally, add the Conditions Of Satisfaction

As a VP Marketing, I want to see information on television advertising when reviewing historical campaigns.

- See how many viewers by age range.
- See how many viewers by income level.

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What are the Conditions of Satisfaction for our original login story?

As a registered user, I am required to login before being able to use the system.

Nonfunctional requirements as user stories

# Non-functional examples

As a customer, I want to be able to run your product on all versions of Windows from Windows 95 on.

As a user, I want the site to be available 99.999% of the time I try to access it.

As the CTO, I want the system to use our existing orders database rather than create a new one.

As someone who speaks a Latin-based language, I might want to run your software someday.

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Write a user story for 2-3 of these common non-functional requirements.

- Performance
- Accuracy
- Portability
- Reusability
- Maintainability
- Interoperability
- Capacity

Some examples are on the following pages. Try thinking of some without looking at those though.

# Some possible answers

## Reusability

- As the CTO I expect the database and database access code to be reusable in future applications.

## Accuracy

- As a user, I want the software to correctly predict the winner of a basketball game at least 53% of the time.
- As a user, I want the driving directions to be the best 90% of the time and reasonable 99% of the time.

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## Performance

- As a user I want 80% of account searches to complete within 2 seconds.

## Interoperabilty

- As a[n IT person at a] customer I want the system to use MySQL so that I can integrate data with my own systems.

## Portability

- As a Linux user and prospective user of a future version, I want the system not to use any technologies that would make porting to Linux difficult.

## Capacity

- As the product owner, I want the system to be able to hold 20 million members on the specified hardware while meeting performance objectives.

## Maintainability

- As a customer I want you to have automated unit tests for all components so that you can enhance this system for a long time.

# Why User Stories

# Words are imprecise

# Examples

| The user can enter a name. It can be 127 characters. | • Must the user enter a name?<br>• Can it be other than 127 chars? |
| --- | --- |
| The system should prominently display a warning message whenever the user enters invalid data. | • What does should mean?<br>• What does prominently display mean?<br>• Is invalid data defined elsewhere? |

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**2** Stories are equally understandable by developers and customers.

**3** Stories support and encourage iterative development.

**4** Stories are the right size for planning.

**5** Stories support participatory design.

**6** Stories emphasize the user's goals not the system's attributes.

**What are we building?**

1. The product shall have a gas engine.
2. The product shall have four wheels.
   2.1. The product shall have a rubber tire mounted to each wheel.
3. The product shall have a steering wheel.
4. The product shall have a steel body.

Source: Adapted from *The Inmates are Running the Asylum* by Alan Cooper (1999).

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# What if we had stories instead?

# Most importantly...

## Don't forget the purpose

The story text we write on cards is less important than the conversations we have.

# Upcoming public classes

| Date | What | Where |
|---|---|---|
| Feb 1–2<br>Feb 3–4 | Certified ScrumMaster<br>Certified Scrum Product Owner | Dallas |
| March 1<br>March 2–3<br>March 4 | User Stories for Agile Requirements<br>Certified ScrumMaster<br>Agile Estimating & Planning | Boulder |
| April 12<br>April 13–14<br>April 15 | User Stories for Agile Requirements<br>Certified ScrumMaster<br>Succeeding with Scrum (new!) | San Diego |

See
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for details
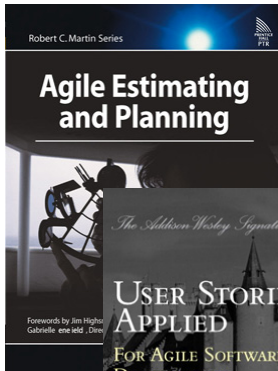
# Mike Cohn

mike@mountaingoatsoftware.com

www.mountaingoatsoftware.com

(720) 890-6110

twitter: mikewcohn

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