ARTIFICIAL INTELLIGENCE SOFTWARE DEVELOPMENT

Week 3 Lecture 2

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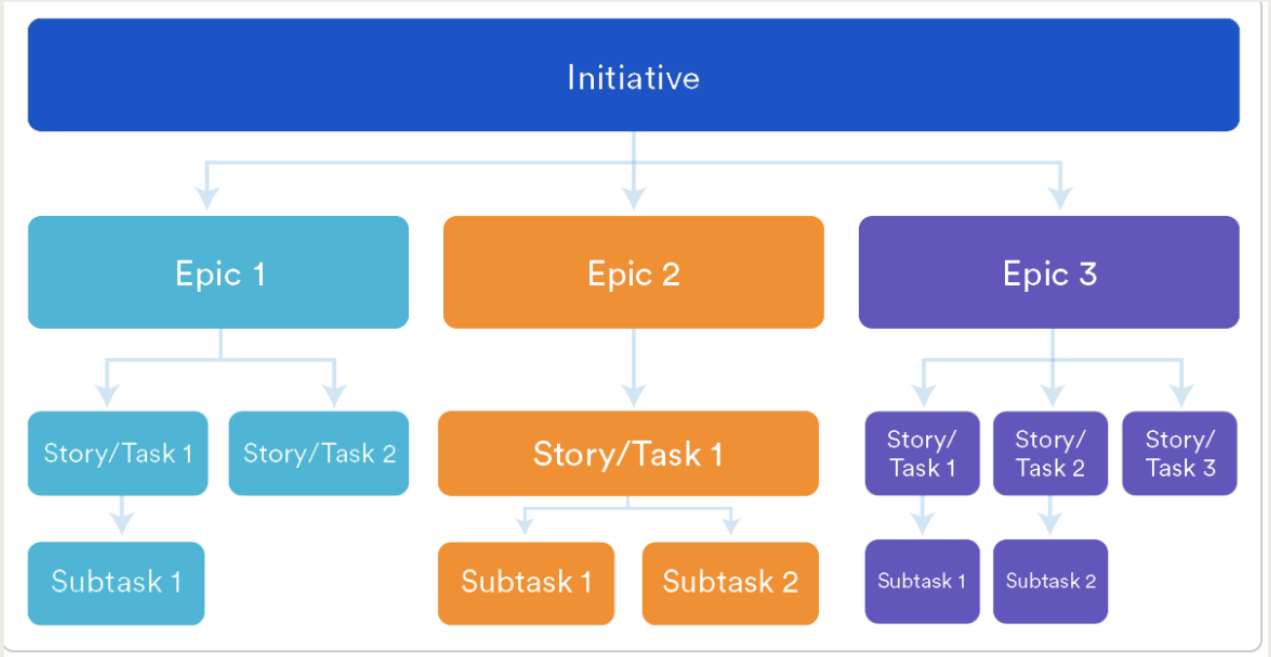
USER STORIES IN AGILE SOFTWARE DEVELOPMENT

Image Source
https://myleanexperience.blog/2018/05/30/utilisation-de-la-user-story-pourquoi-et-comment/

Hierarchical Structure of Agile Project Management



Reference:
https://www.atlassian.com/agile/project-management/

Initiatives

- Initiatives are bigger and broader goals that a company wants to achieve
- Happens over many quarters and through multiple product releases
- Involves multiple geographically distributed teams
- Examples of Initiatives:
  - A space recreational travel company wants to reduce cost per trip by 10%
    - Reduce fuel consumption during rocket launch by 20%
    - Make more trips in a year
    - Accommodate more passengers in a trip
- An initiative would involve multiple Epics

Epics

- **Epics** are large body of work that can be completed over several **Sprints**
- Epics are usually broken down to **User Stories**
- As the epic progresses more User Stories can be added or deleted
- Epic: March 2050 Launch
  - Stories for the Software Development Team
    - Update date range to include March 2050 Launch dates.
    - Reduce load time for requested flight listings to < 0.45 seconds
    - Promote Summer Sale on confirm page for First Class bookings.
  - Stories for the Propulsion Team
    - Keep fuel tanks PSI > 250 PPM on launch
    - Reduce overall fuel consumption by 1%.
    - Hire new propulsion engineer.

User Stories

- A user story is a general explanation of a software feature written **from the perspective of the end user**.
- Non-Technical in Nature.
- Purpose is to articulate how a software feature will provide value to the customer.
- User stories are **not Software System Requirements.**
- They are one of the core components of an agile program.
- User stories are added to Sprints

Advantage of User Stories

- Stories keep **focus on the user**
- Understood equally well by **everyone**
- Useful for **iterative planning and development**
- Encourage **deferring of details to when needed**
- Support **opportunistic design**
- Emphasize verbal **communication**
- Stories creates **momentum**

How to Write User Stories

- Listen to Customer and capture the problem in their words
- Write a story for each Step to solve the problem
- Include a definition of Done for each story
- Template Role-Activity-Business Value
- Examples:
  - *As a **user** closing the application, I want **to be prompted to save anything that has changed since the last save** so that **I can preserve useful work**.*
  - As a manager, I want to be **able to understand my colleagues progress**, so I can **better report our sucess and failures.**
  - As a **non-administrative user**, I want to **search for my customers by their first and last names** so that I can view their profiles quickly

The 3 C’s of User Stories

Card: is the short 2-3 sentence description of the specific User Story. The card must address the *who* (a specific user role), *what* (the desired task or action), and *why* (the benefit of completing this task or action).

Conversation: The Conversation represents a promised discussion between all stakeholders – including the end user, production and development teams, and the Product Owner.

Confirmation: The Confirmation is an acceptance test in which the Product Owner confirms that the User Story has been satisfied based on a predetermined definition of “done”.

Estimation

- Estimation is a team-work which requires inputs from different team members.
- Estimation is done as number of **story points.**
- **Story points** are units of measure for expressing an estimate of the overall effort required to fully implement a product backlog item.
- Story points are assigned relative to work complexity, the amount of work, and risk or uncertainty.
- Usually 8 hours (single day) is taken as 10 story points.
- No single work item should take more than 20 story points.

Estimation-Fibonacci Scale

- Fibonacci Sequence - 0, 1,1, 2, 3, 5, 8, 13, 21, 34, 55, and 89.
- How to generate Fibonacci Sequence?
- Use Fibonacci scale to prioritize tasks to be included in the next sprint.
  - *complex tasks are assigned more story points*
  - *smaller tasks are assigned fewer*
- Why Fibonacci Sequence?
  - Is a non-linear sequence
  - Effort would be a non-linear function of complexity

How Estimation is done in Practice?

- Each team member estimates a number on the Fibonacci scale that represents the task's size
- All team members disclose their numbers at the same time to avoid being influenced by each other's estimates
- Together, they conduct a review of the disclosed numbers until they reach a consensus about each task and user story
- Each user story is then added to a bucket which represents a corresponding point in the Fibonacci sequence

Example – Flight Management System

Goal: Build an online system to manage flights and passengers to ease the flight management.

Value Proposition: Ease flight management and to create a convenient and easy-to-use application for passengers, trying to buy airline tickets.

System Description:

- The system is based on a relational database with its flight management and reservation functions.
- Database server supporting hundreds of major cities around the world as well as thousands of flights by various airline companies.
- Database stores:
  - Flight details
  - Customer description
  - Reservation description

Example – Flight Management System

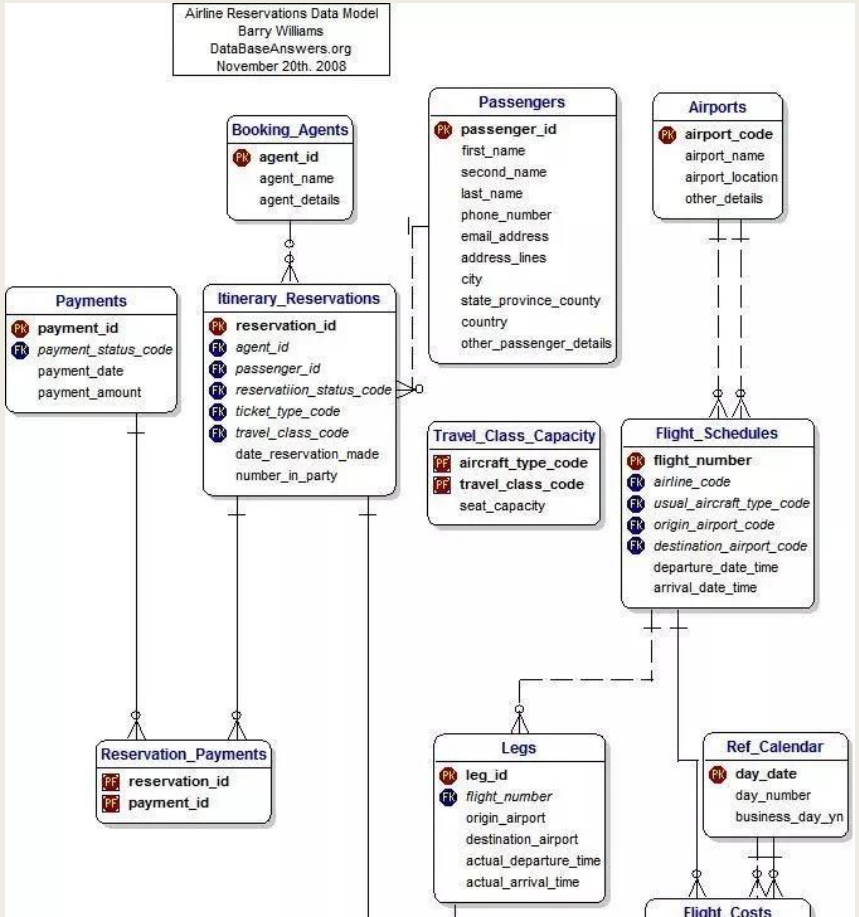
Main Functionalities:

- Make a new reservation
  - One-way
  - Round-Trip
  - Multi-city
  - Flexible Date/time
  - Confirmation
- Cancel an existing reservation
- View itinerary of a user

Example – Flight Management System

- CUSTOMER FUNCTIONS
  - Get all customers who have seats reserved on a given flight.
  - Get all flights for a given airport.
  - View flight schedule.
  - Get all flights whose arrival and departure times are on time/delayed.
  - Calculate total sales for a given flight.
- Get all customers who have seats reserved on a given flight
  - Get all flights for a given airport.
  - View flight schedule.
  - Get all flights whose arrival and departure times are on time/delayed.
  - Calculate total sales for a given flight.

Example – Flight Management System



Example – Flight Management System

Task:

Write down Epic and User stories for building a Database for the flight management system.

More details about the requirements can be found here:

https://krazytech.com/projects/sample-software-requirements-specificationsrs-report-airline-database