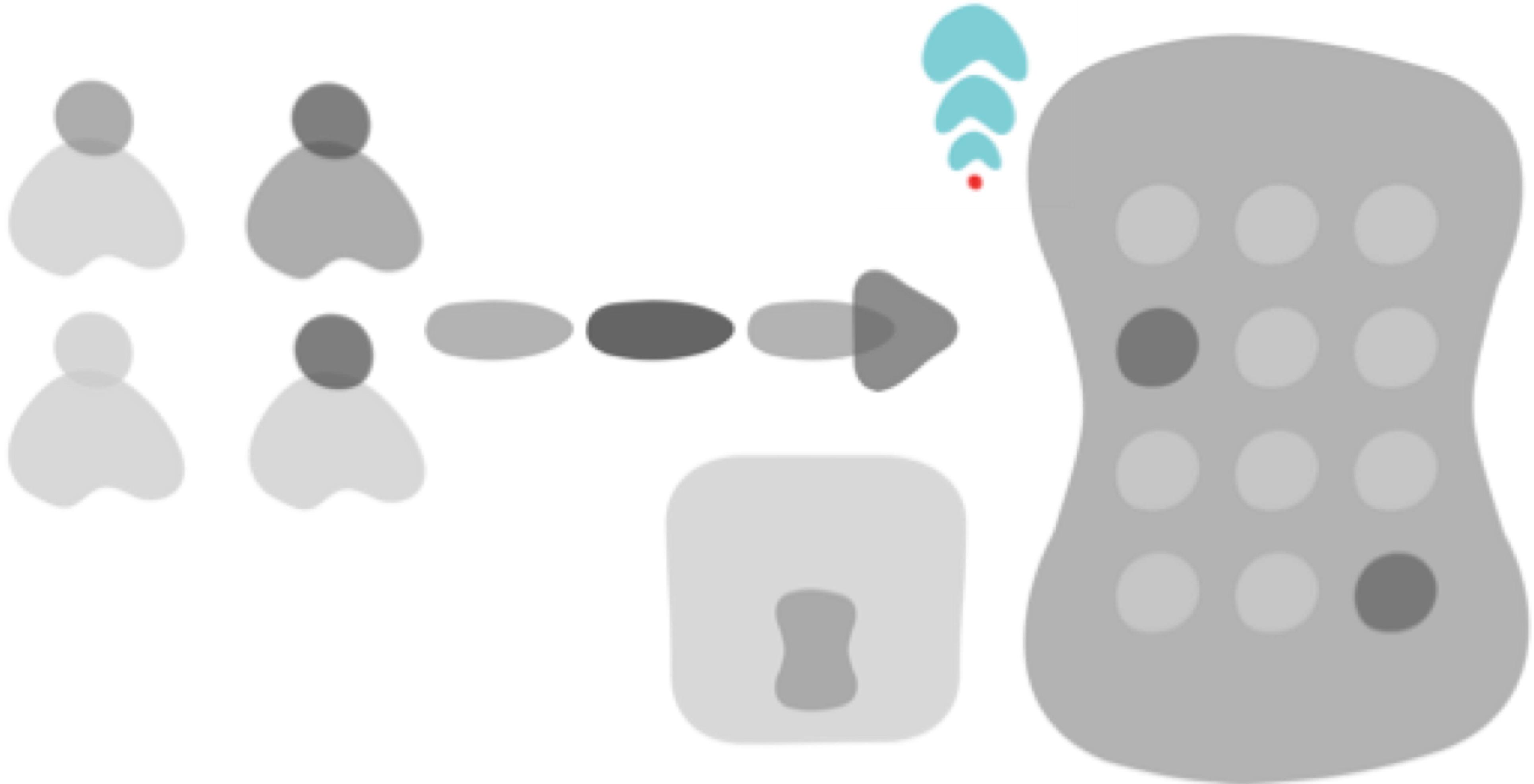


Architecture Katas Online



ThoughtWorks®

NEAL FORD

Director / Software Architect / Meme Wrangler

 @neal4d

<http://nealford.com>

Where did this
idea come from?

The screenshot shows a web browser window with the URL `archkatas.herokuapp.com` in the address bar. The page title is "Architectural Katas". Below the title are two quotes:

"How do we get great designers? Great designers design, of course." --Fred Brooks

"So how are we supposed to get great architects, if they only get the chance to architect fewer than a half-dozen times in their career?"
--Ted Neward

A blue button labeled "Do one! »" is visible.

The main content area is divided into several sections:

- About**: Describes the origin of Architectural Katas as a presentation workshop by Ted Neward. A "Learn more »" button is present.
- Invite**: Asks for an experienced moderator to run the workshop at your place of business. A "Contact »" button is present.
- Rules**: Explains the rules required for an Architectural Kata. A "Read rules »" button is present.
- Lead**: Provides information for those who want to run the activity themselves. A "Learn how »" button is present.
- Contribute**: Invites users to send ideas. A "Send ideas »" button is present.
- Join**: Allows users to find groups near them. A "Find groups »" button is present.

At the bottom of the page, a copyright notice reads: © Neward & Associates 2012

...and then...

The screenshot shows a web browser window with the URL fundamentalsofsoftwarearchitecture.com in the address bar. The page title is "fundamentalsofsoftwarearchitecture.com". Below the title, there are several navigation links: "Architectural Katas", "Updated Fundamentals of Software Architecture Images", "Architectural", "Katas", "Fundamentals of Software Architecture", and "List of Architecture Katas". A horizontal line separates the header from the main content. The main content area has a light gray background. At the top of this area, the text "Architectural Katas" is displayed in bold. Below it, in a smaller italicized font, is the text "inspired by Ted Neward's original [Architectural Katas](#)". Inside a light gray box, there is a quote by Fred Brooks: "How do we get great designers? Great designers design, of course." followed by "Fred Brooks". Below this, another quote by Ted Neward is shown: "So how are we supposed to get great architects, if they only get the chance to architect fewer than a half-dozen times in their career?" followed by "Ted Neward".

Architectural Katas

inspired by Ted Neward's original [Architectural Katas](#)

"How do we get great designers?
Great designers design,
of course."

Fred Brooks

"So how are we supposed to get great architects, if
they only get the chance to architect fewer than
a half-dozen times in their career?"

Ted Neward

About

Architectural Katas are intended as a small-group (3-5 people) exercise, usually as part of a larger group (4-10 groups are ideal), each of whom is doing a different kata. A Moderator keeps track of time, assigns Katas (or allows this website to choose one randomly), and acts as the facilitator for the exercise.

Each group is given a project (in many ways, an RFP–Request For Proposal) that needs development. The project team meets for a while, discovers requirements that aren't in the original proposal by

<http://fundamentalsofsoftwarearchitecture.com/katas/>

...and then...

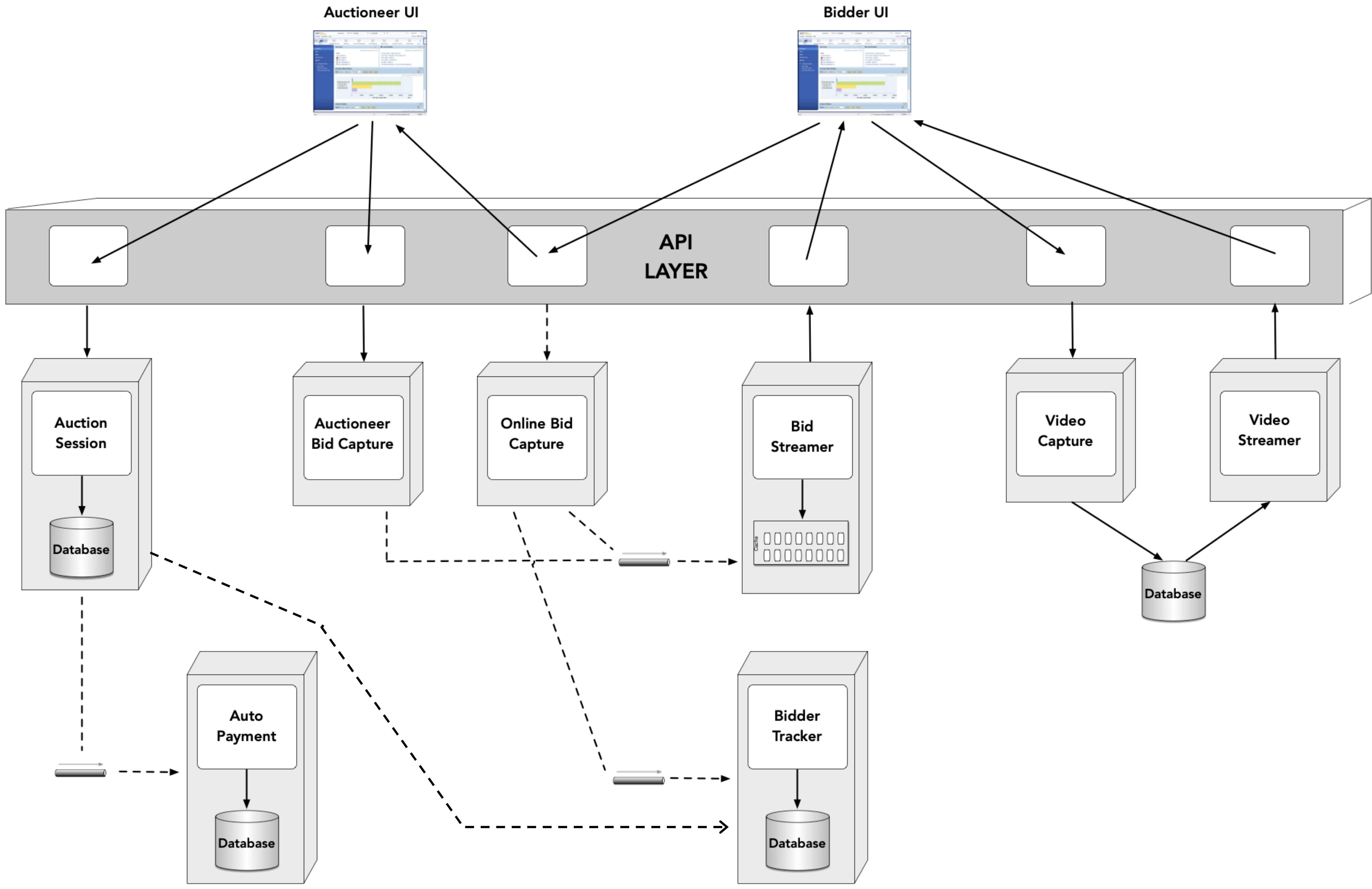


...and now.

The deliverables

Your Architectural Kata is...

Going Going Gone!



1. Separate Queues for Bid Streamer and Tracker Services

Status

Accepted

Context

The Bid Capture Services, upon receiving a bid, must forward that bid to the Bid Streamer Service and the Bidder Tracker Service. This could be done using a single topic (pub/sub) or separate queues (p2p) for each service.

Decision

We will use separate queues for the Bid Streamer and Bidder Tracker services.

Multiple bids will come in for the same ask amount. The Streamer service only needs the first bid received for that amount, whereas the Bidder Tracker needs all bids received. Using a topic (pub/sub) would require the Bid Streamer to contain logic to ignore bids that are the same as the prior amount, forcing the Bid Streamer to store shared state between instances.

The Bid Streamer Service stores the bids for an item in an in-memory cache, whereas the Bidder Tracker stored bids in a database. The Bidder Tracker will therefore be slower and might require back pressure. Using a dedicated Bidder Tracker queue provides this dedicated back pressure point.

Consequences

This decision will require the Bid Capture services to send the same information to multiple queues.

architecture katas

identifying characteristics

Your Architectural Kata is...

Going Going Gone!

An auction company wants to take their auctions online to a nationwide scale--customers choose the auction to participate in, wait until the auction begins, then bid during the live auction as if they were there in the room, with the auctioneer.

- **Users:** scale up to hundreds of participants (per auction), potentially up to thousands of participants, and as many simultaneous auctions as possible
- **Requirements:**
 - bidders can see a live video stream of the auction and see all bids as they occur
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- **Additional Context:**
 - auction company is expanding aggressively by merging with smaller competitors
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availability reliability performance

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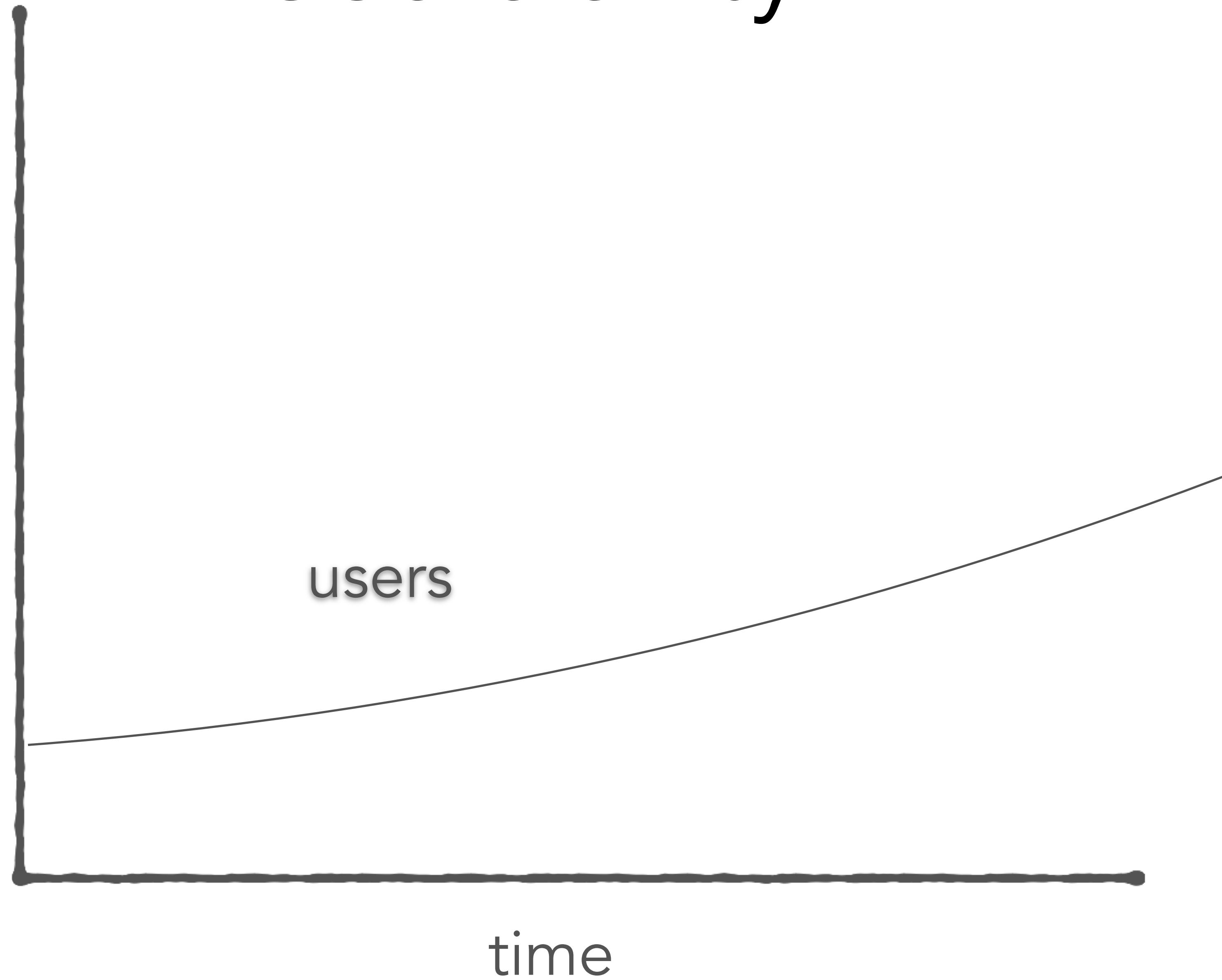
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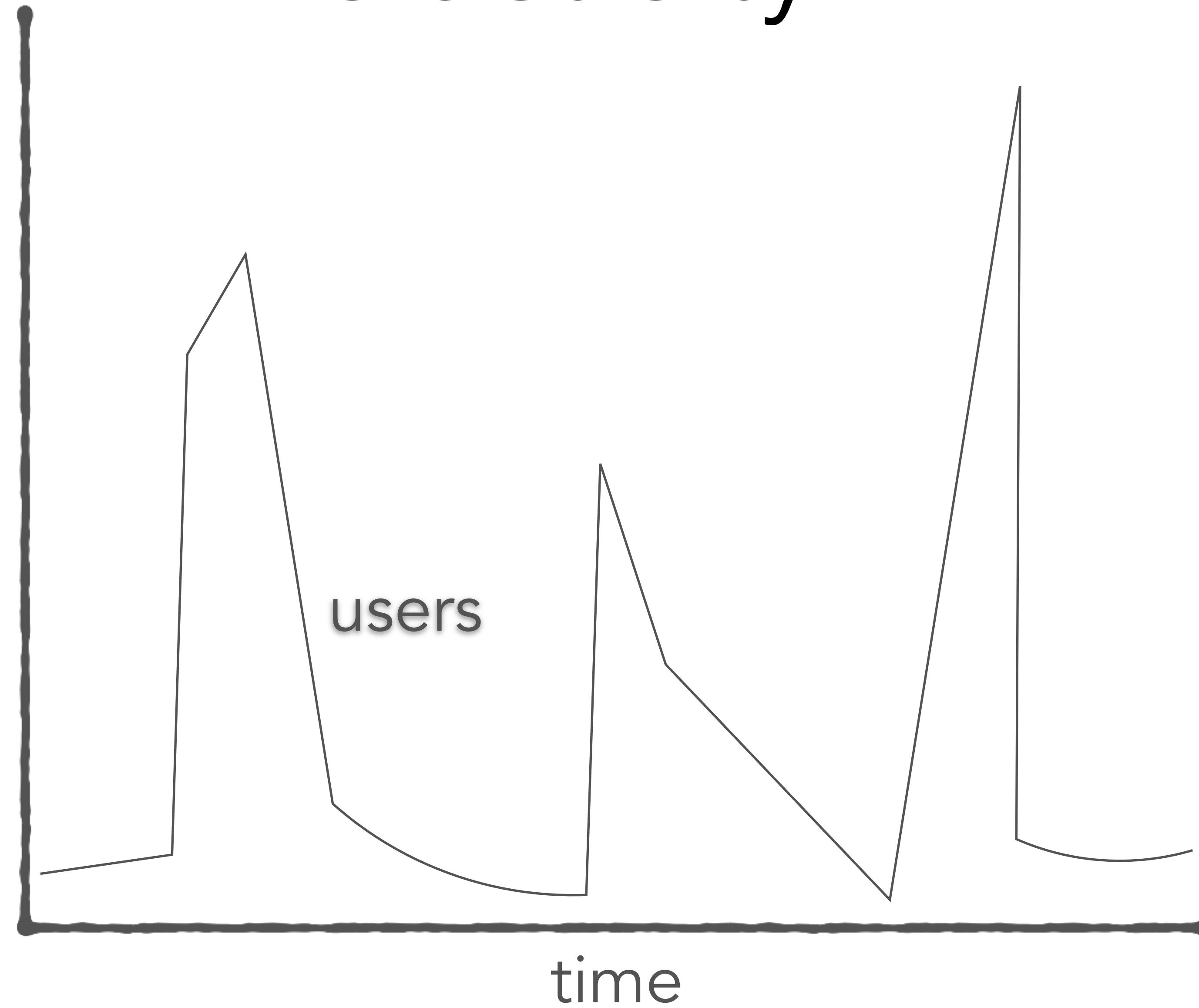
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availability reliability performance scalability elasticity

scalability:



elasticity:



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availability reliability performance scalability elasticity (security)

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availability reliability performance scalability elasticity (security)

architecture katas

identifying major components

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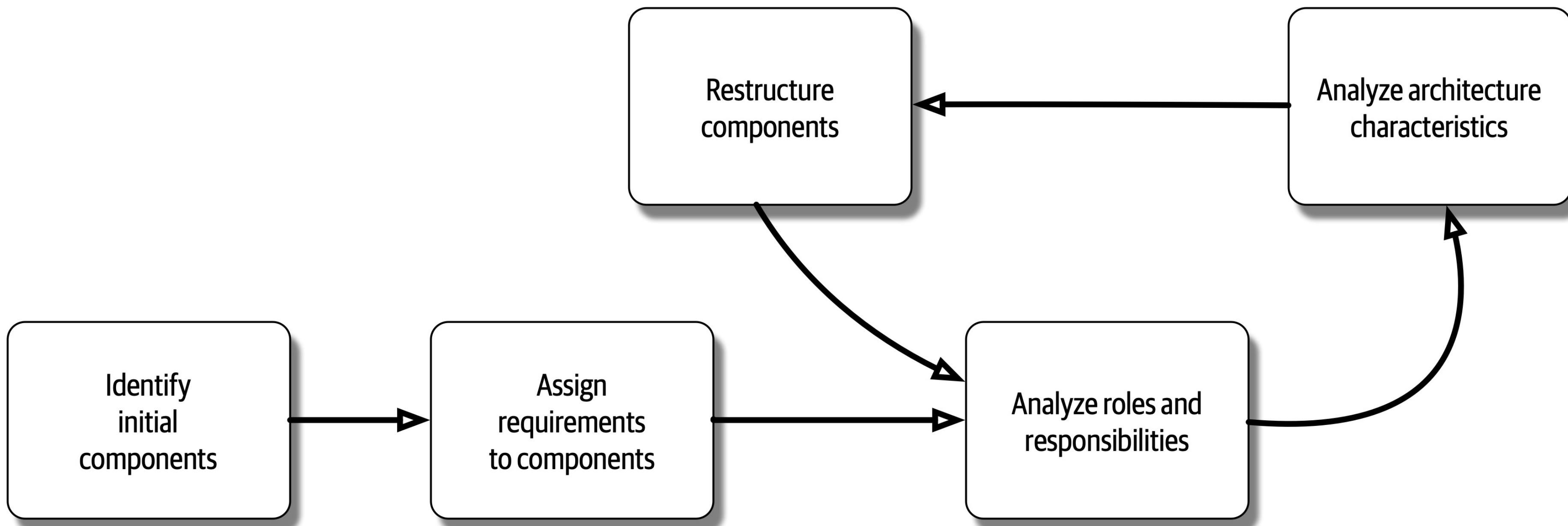
Your Architectural Kata is...

Silicon Sandwiches

A national sandwich shop wants to enable 'fax in your order' but over the Internet instead (in addition to their current fax-in service)

- **Users:** thousands, perhaps one day millions
- **Requirements:**
 - users will place their order, then be given a time to pick up their sandwich and directions to the shop (which must integrate with several external mapping services that include traffic information)
 - if the shop offers a delivery service, dispatch the driver with the sandwich to the user
 - mobile-device accessibility
 - offer national daily promotional specials
 - offer local daily promotional specials
 - accept payment online or in person/on delivery
- **Additional Context:**
 - Sandwich shops are franchised, each with a different owner.
 - Parent company has near-future plans to expand overseas.
 - Corporate goal is to hire inexpensive labor to maximize profit.

component identification



Your Architectural Kata is...

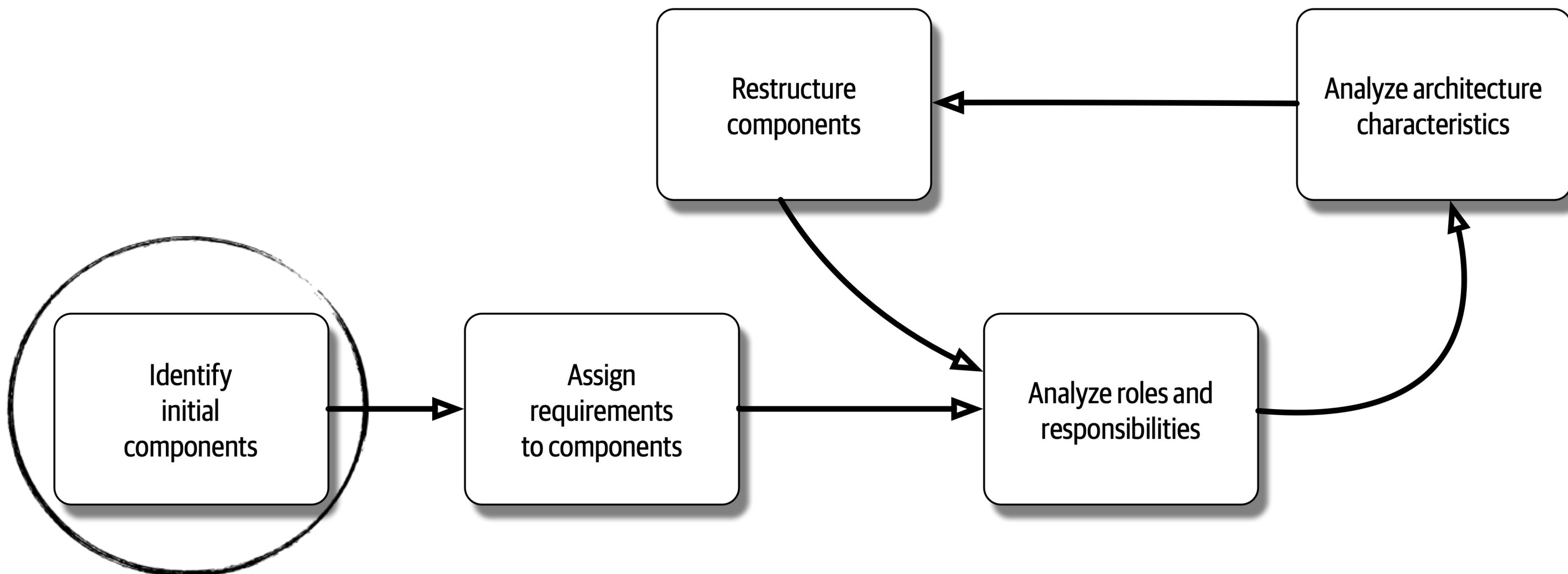
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Your Architectural Kata is...

Going Going Gone!



Your Architectural Kata is...

Going Going Gone!

the “entity trap”

auctions

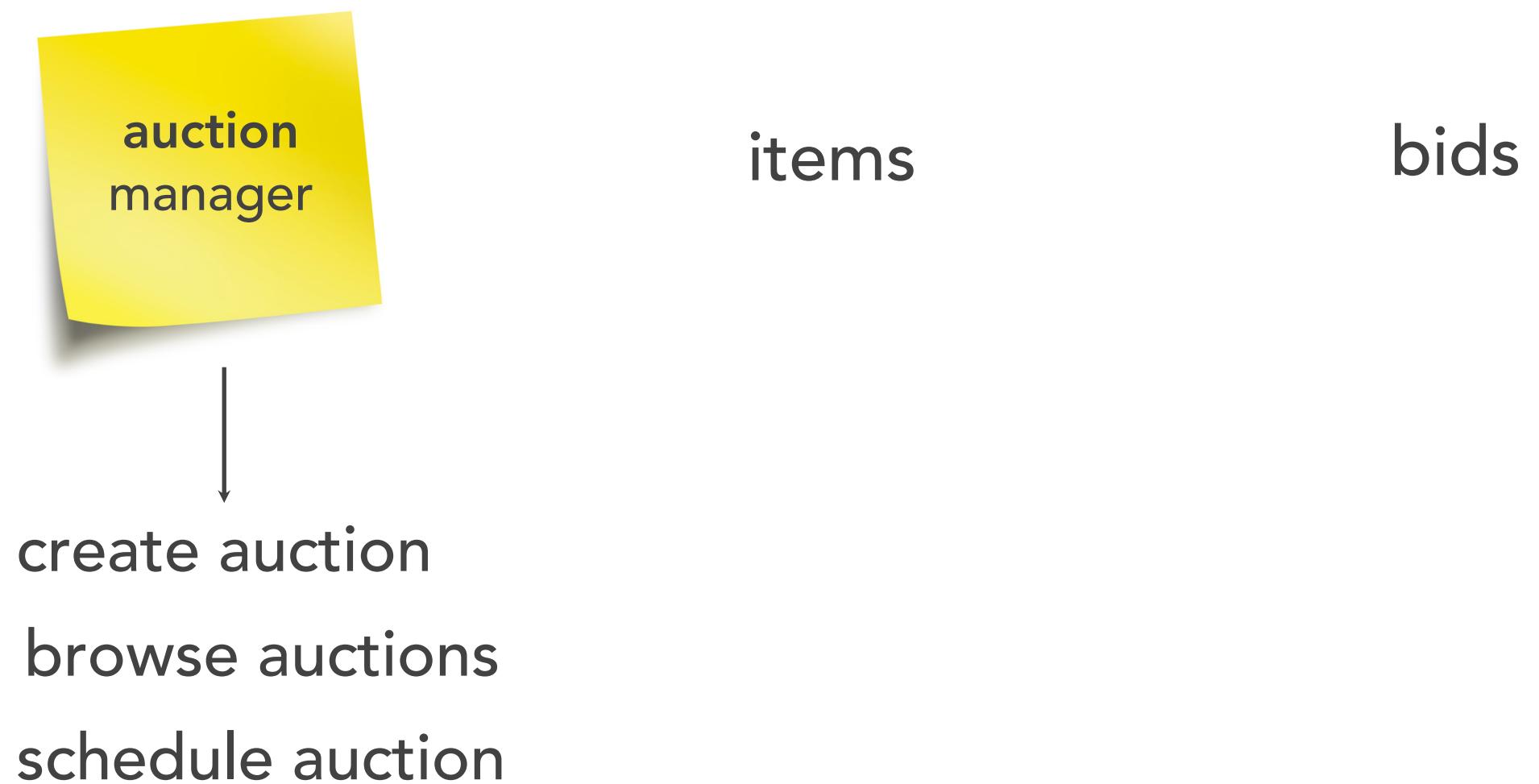
items

bids

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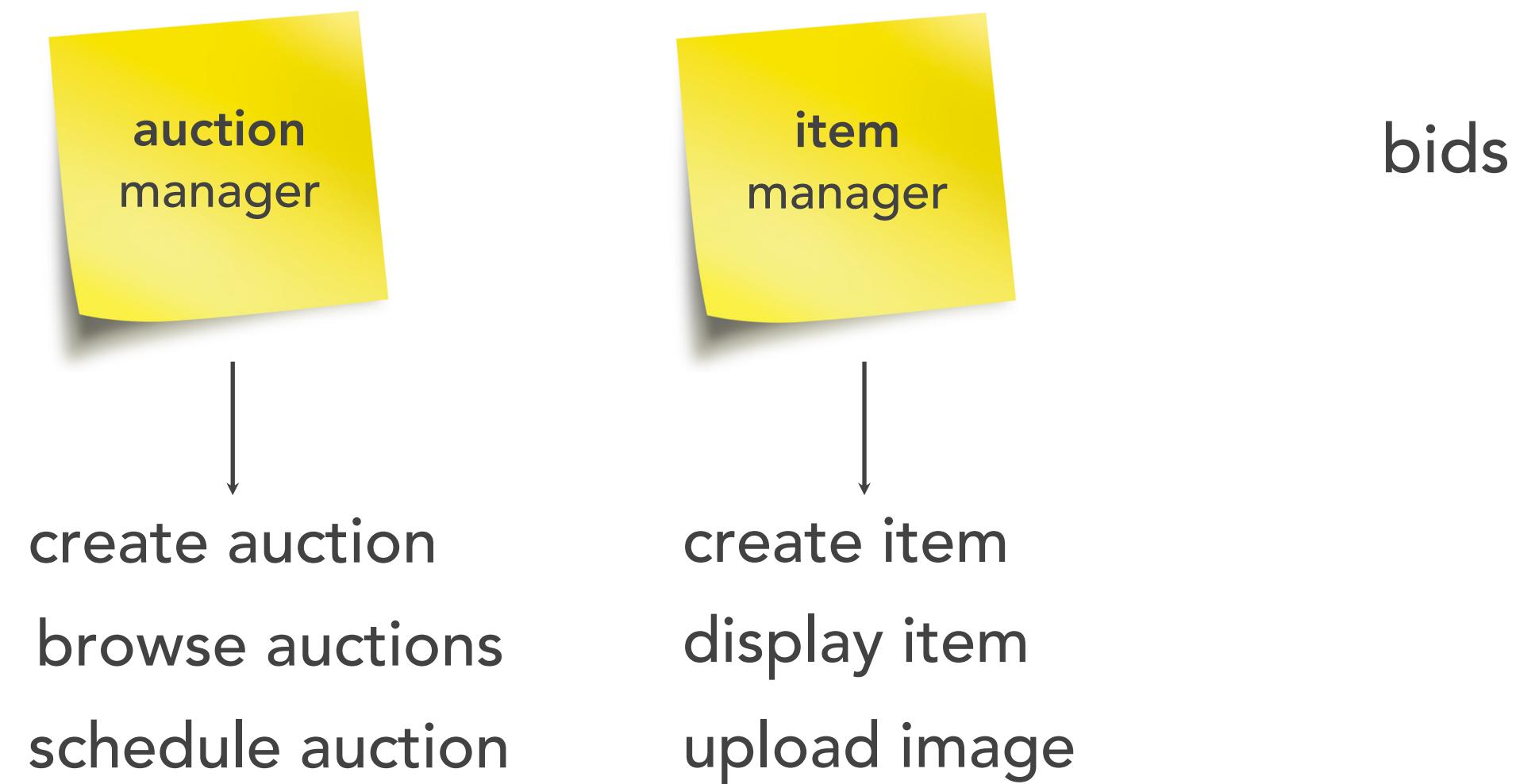
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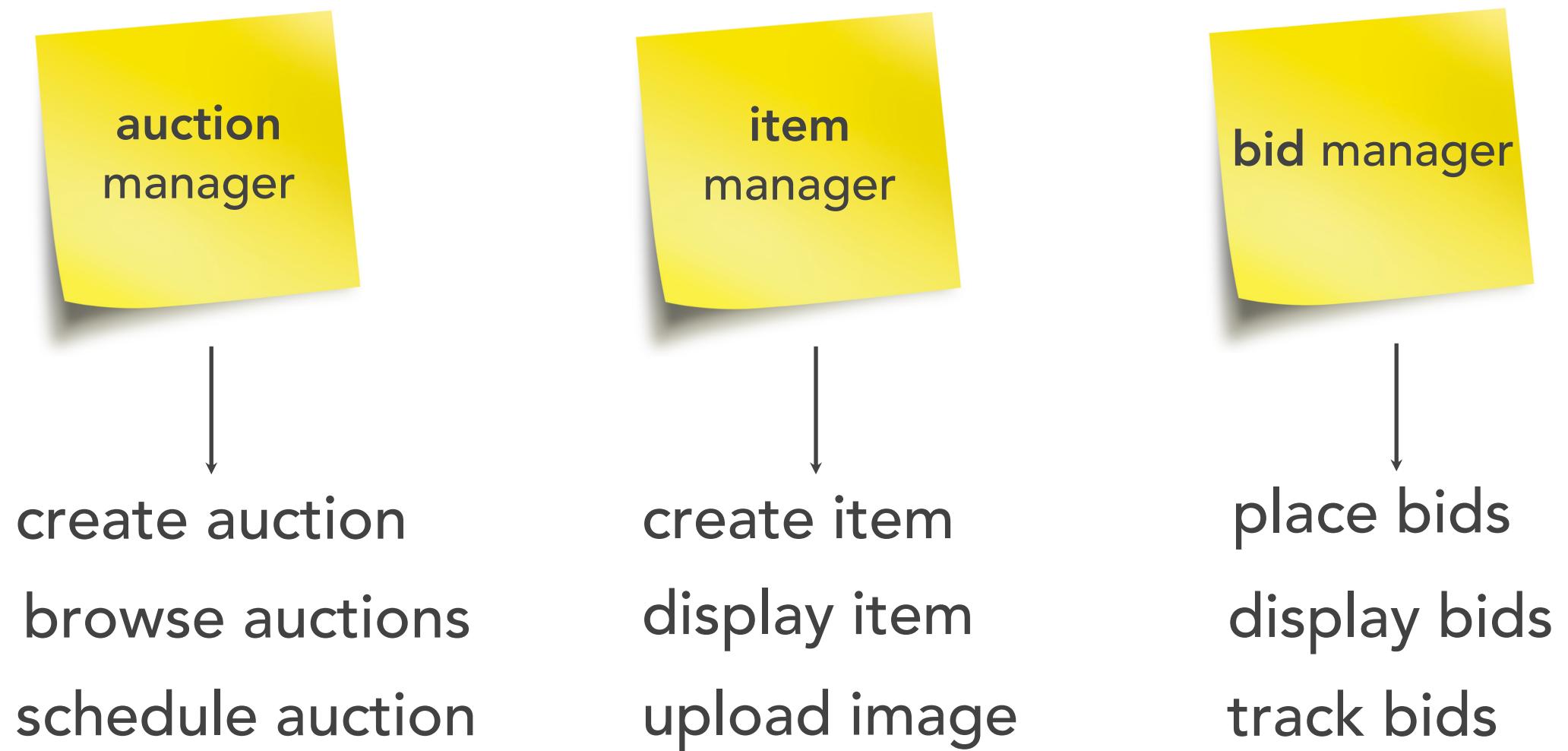
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Your Architectural Kata is...

Going Going Gone!

the “entity trap”



Your Architectural Kata is...

Going Going Gone!

workflow approach

create auction —> find auction —> sign up —> watch auction —> place bid

Your Architectural Kata is...

Going Going Gone!

workflow approach

create auction —→ find auction —→ sign up —→ watch auction —→ place bid



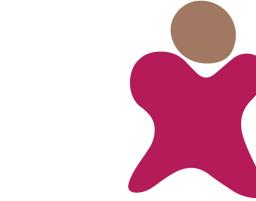
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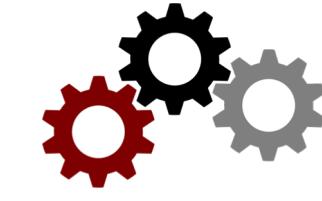
actor/action approach



bidder



auctioneer



system

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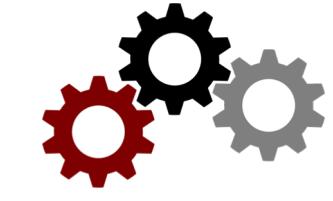
actor/action approach



bidder



auctioneer



system



view live video stream

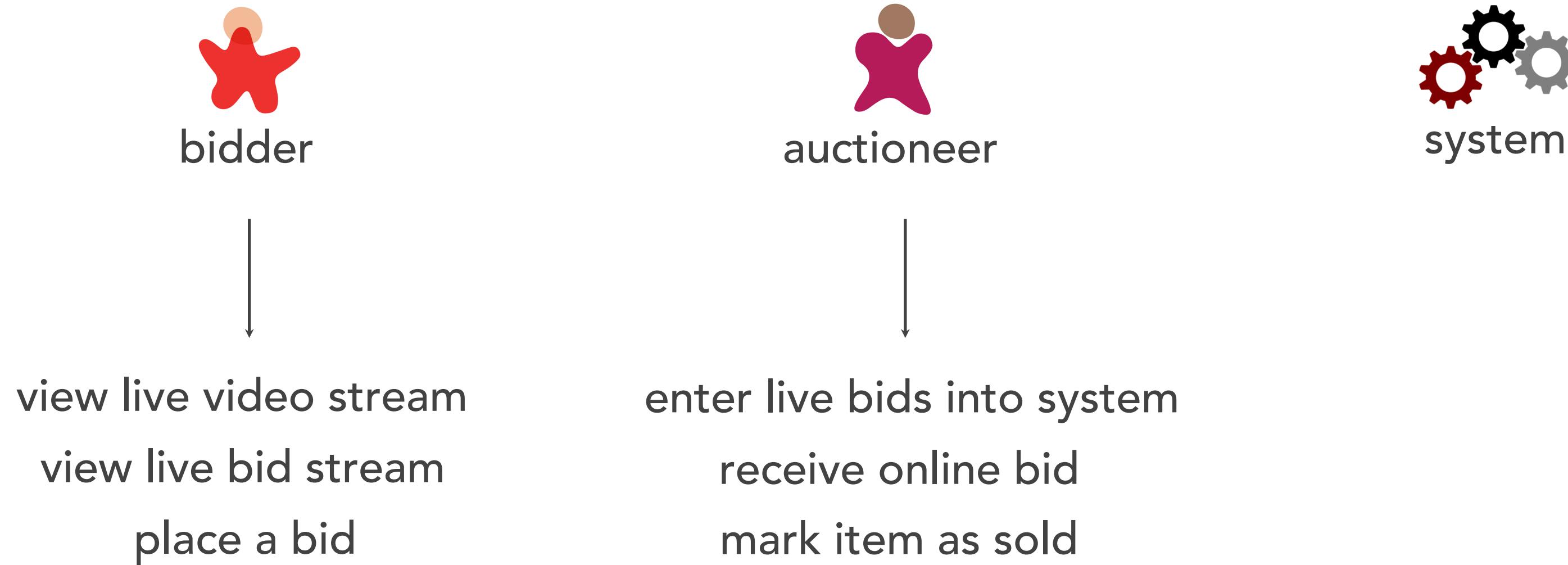
view live bid stream

place a bid

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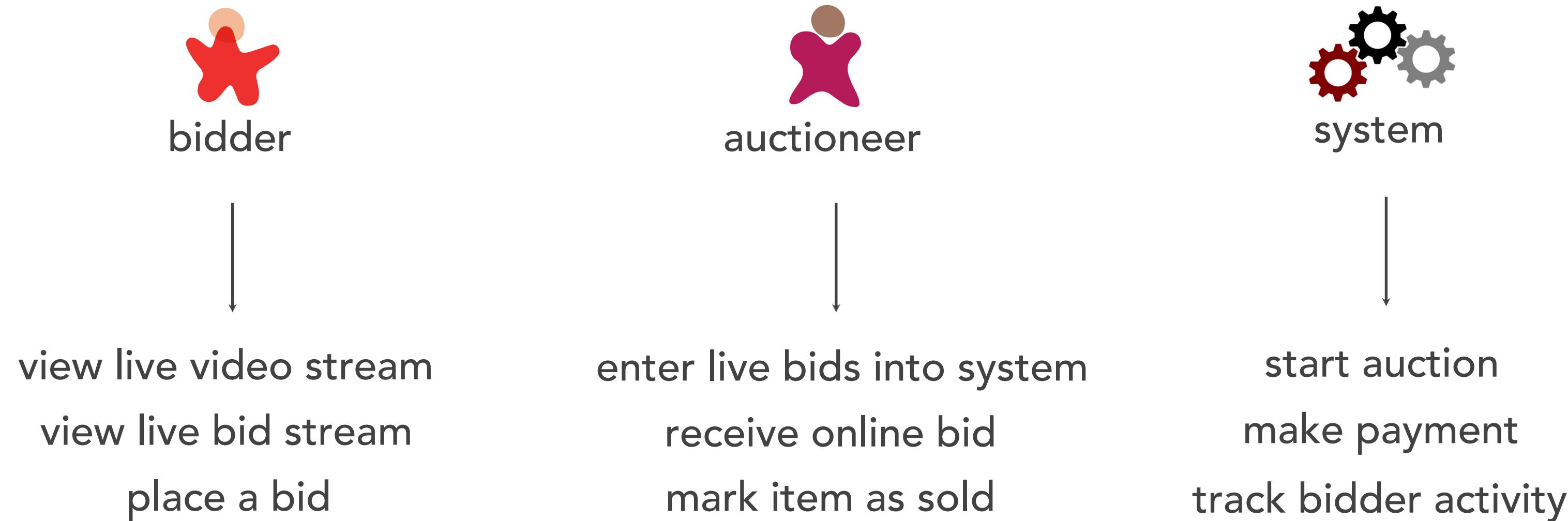
actor/action approach



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actor/action approach



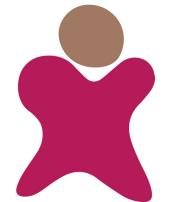
Your Architectural Kata is...

Going Going Gone!



bidder

- view live video stream
- view live bid stream
- place a bid



auctioneer

- receive online bid
- enter live bids into system
- mark item as sold



system

- start auction
- make payment
- track bidder activity

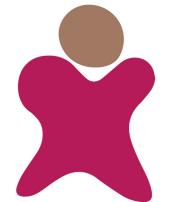
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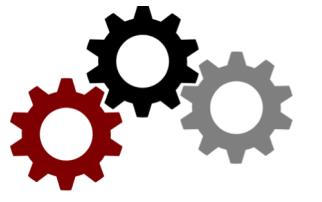
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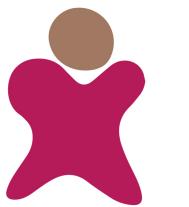
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