

How we use BDD to keep our developers smiling



Monica Obogeanu

Product Manager

eventrix

About me

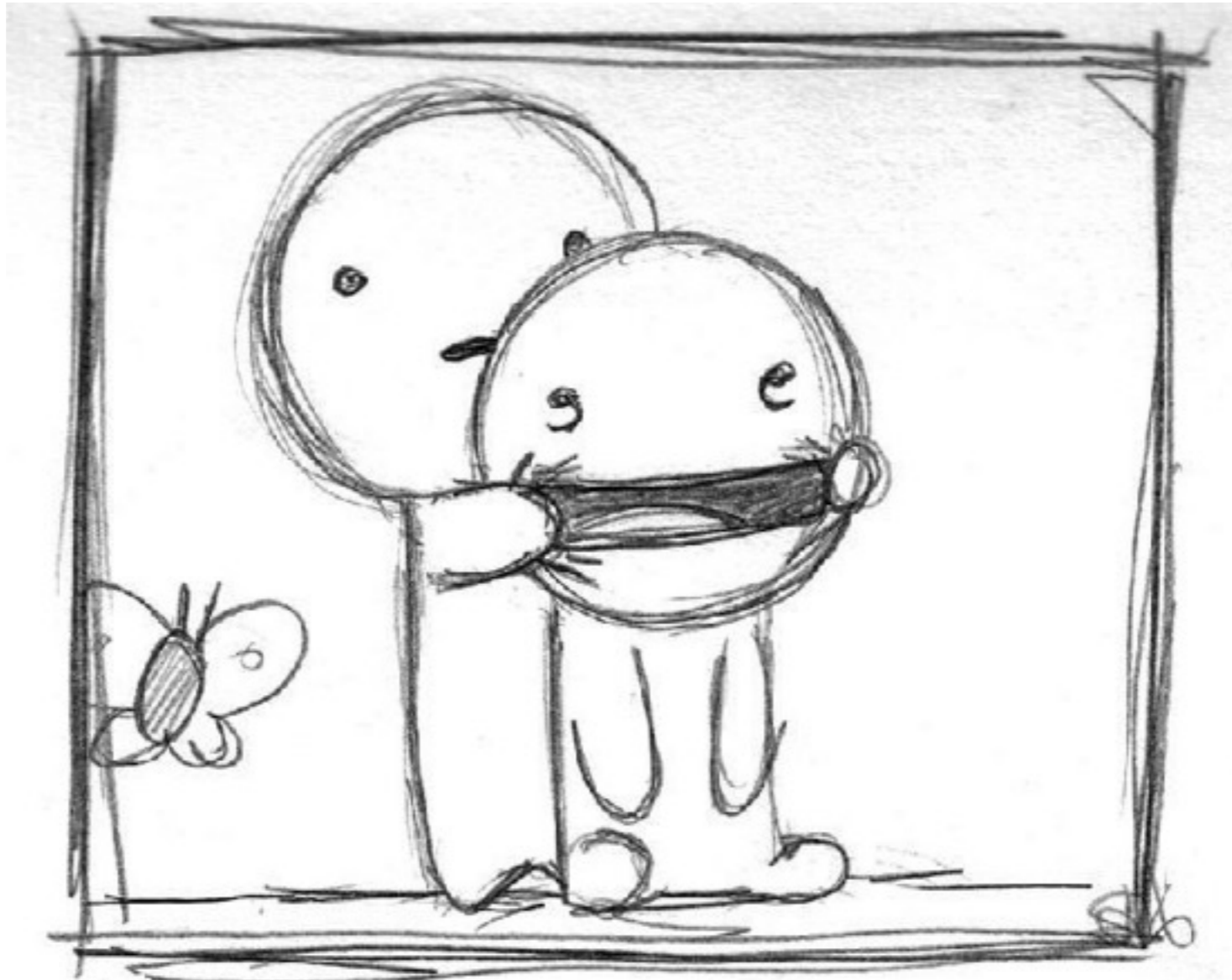
Product manager at eventrix

10 years in the industry

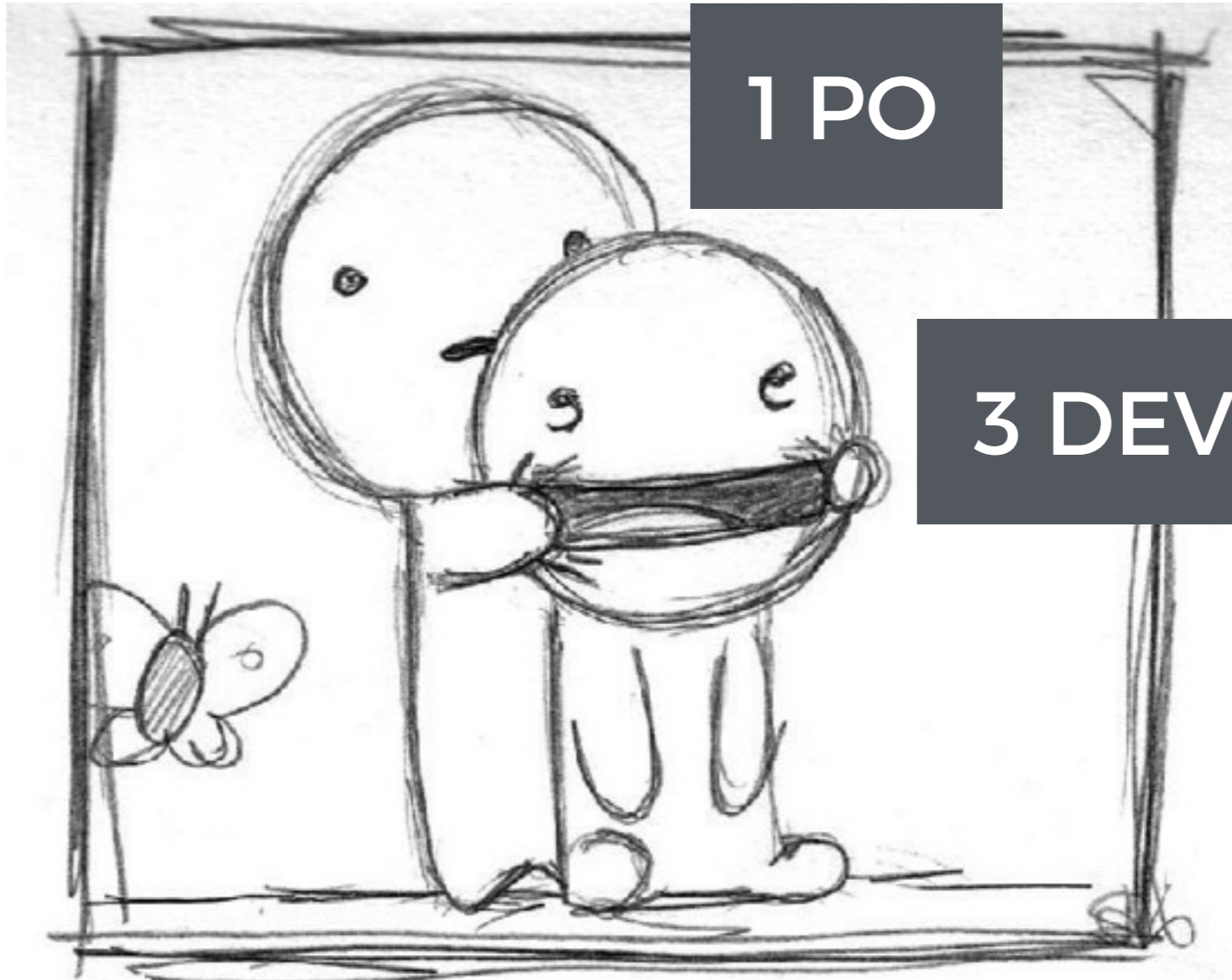
Startup programs

Software tester





I CAN ALWAYS MAKE
YOU SMILE.

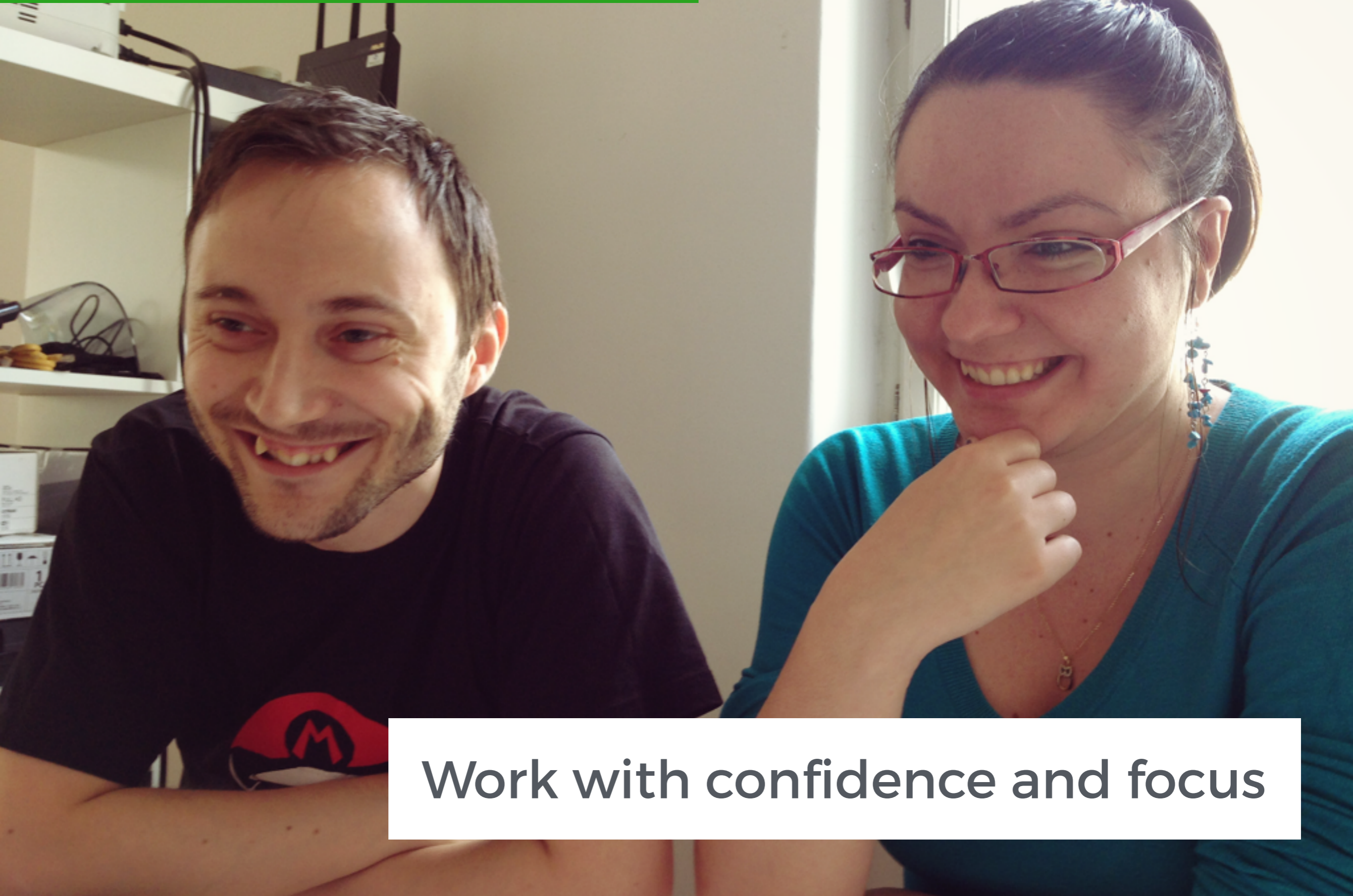


1 PO

3 DEVS

I CAN ALWAYS MAKE
YOU SMILE.

Smiling developers



Work with confidence and focus

Smiling developers



Know where their code is going

Smiling developers



Know exactly when the feature is ready for production

Smiling developers

Story maps

Fika

Retreats

Behaviour Driven Development

Learning Open Spaces

Retrospectives

Celebrations



Topics

- What is BDD - quick recap
- How we use BDD
- Benefits
- Red flags
- Q&A and experience sharing

Behaviour Driven Development

GIVEN

WHEN

THEN

EVENT ORGANIZER
"ALEX"

EVENT
"ALEX'S CONFERENCE"

EVENT HAS RECEIVED

ALEX CLICKS
COLUMN
HEADER

• ALEX IS LOGGED IN
• ALEX VIEWS RECEIVED SUBMISSIONS

SUBMISSIONS ORDERED BY
COLUMN ATTRIBUTE

▼ MARKER IS SHOWN NEAR THE COLUMN HEADER

Brings test writing close to human language

Behaviour Driven Development

GIVEN

WHEN

THEN

EVENT ORGANIZER
"ALEX"

EVENT
"ALEX'S CONFERENCE"

EVENT HAS RECEIVED MULTIPLE SUBMISSIONS

ALEX CLICKS COLUMN HEADER

• ALEX IS LOGGED IN
• ALEX VIEWS

SUBMISSIONS ORDERED BY COLUMN ATTRIBUTE

▼ MARKER IS SHOWN NEAR THE

Common vocabulary for analysts, testers, developers and business.

Behaviour Driven Development

GIVEN

WHEN

THEN

EVENT ORGANIZER
"ALEX"

ALEX CLICKS
COLUMN

SUBMISSIONS
ORDERED BY
COLUMN

Define user scenarios for each user story:

GIVEN some initial context
WHEN an event occurs
THEN ensure some outcomes

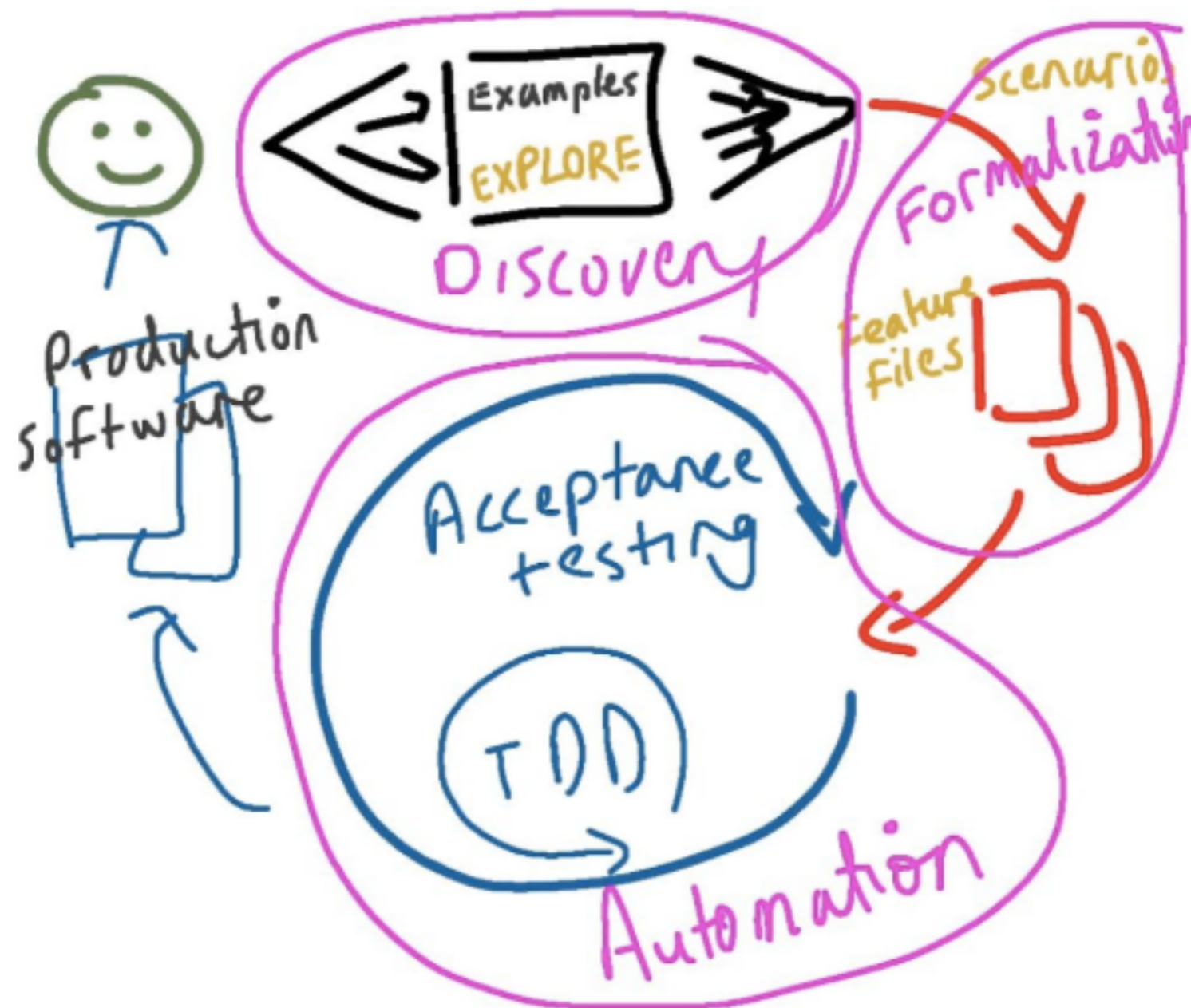
EVE
"ALEX"
CONTEXT

"ALEX IS
CLICKING

▼ MARKER
is

EVENT HAS
RECEIVED
MULTIPLE
SUBMISSIONS

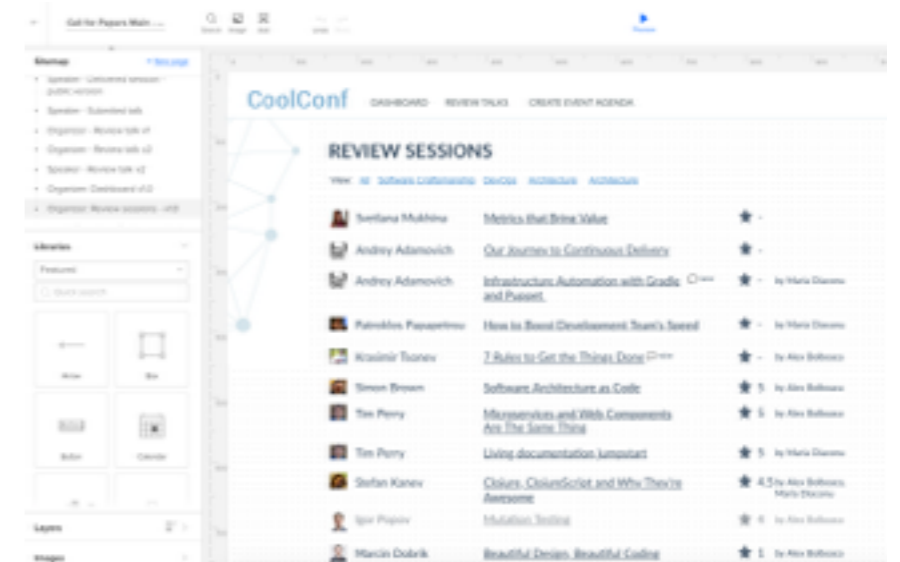
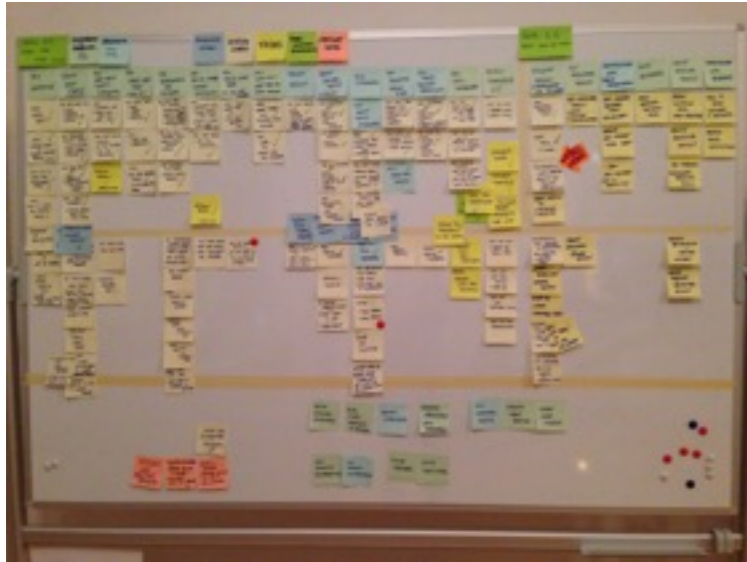
Behaviour Driven Development



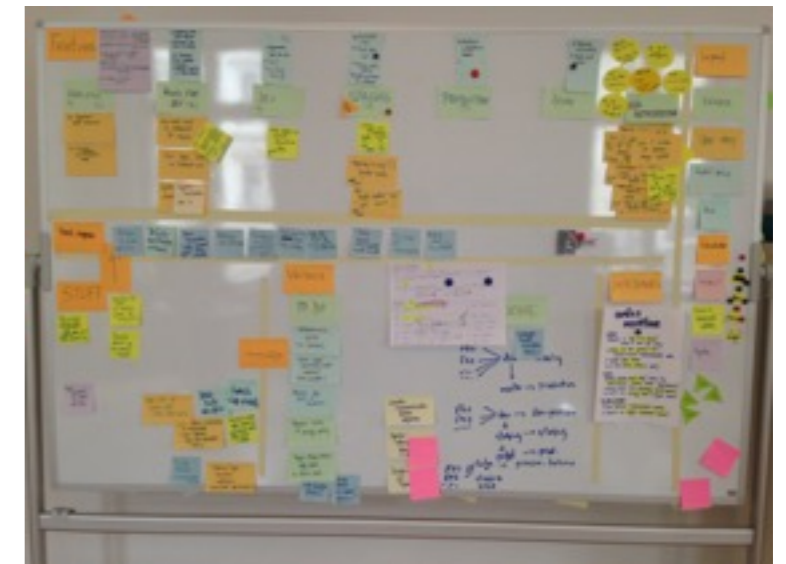
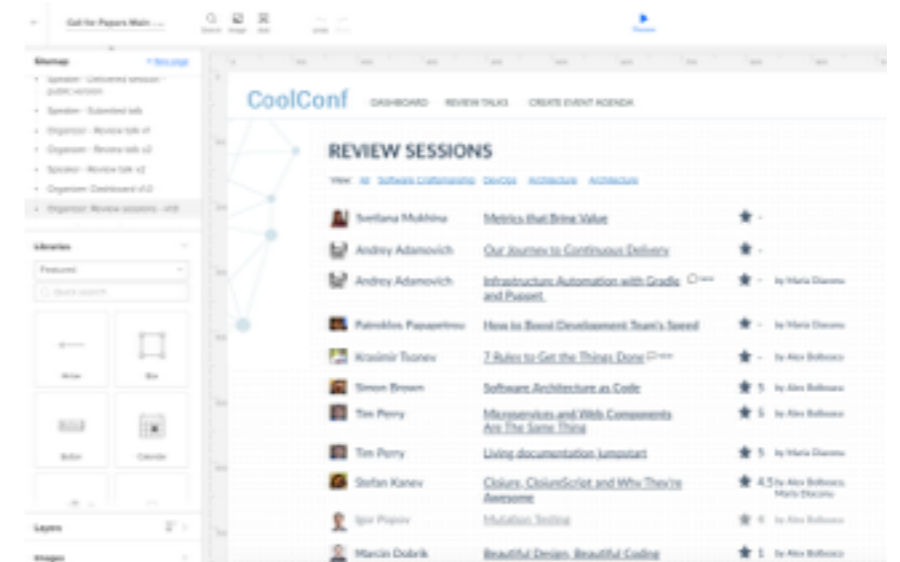
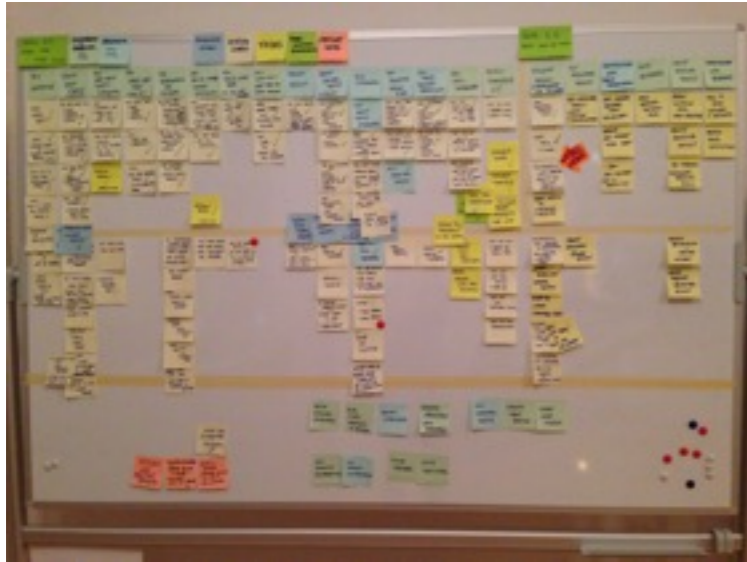
Our context



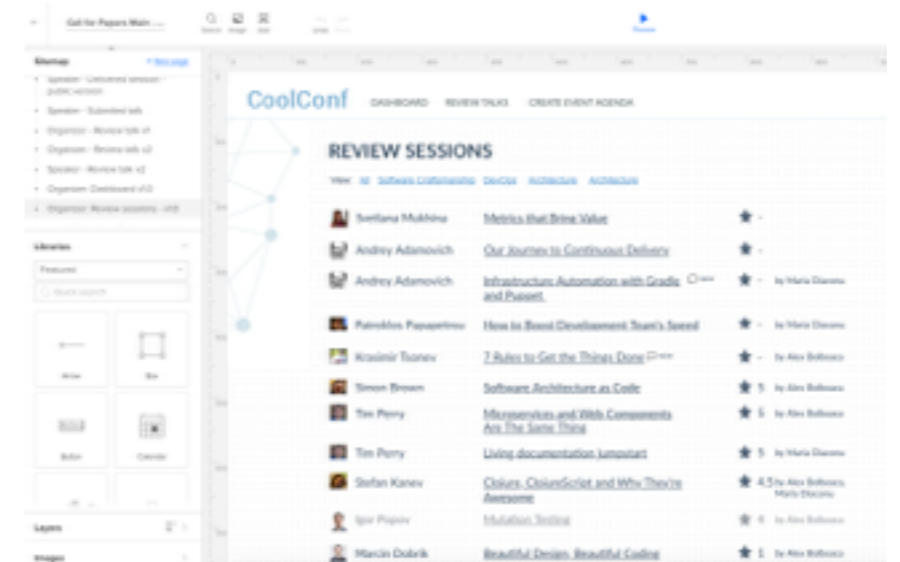
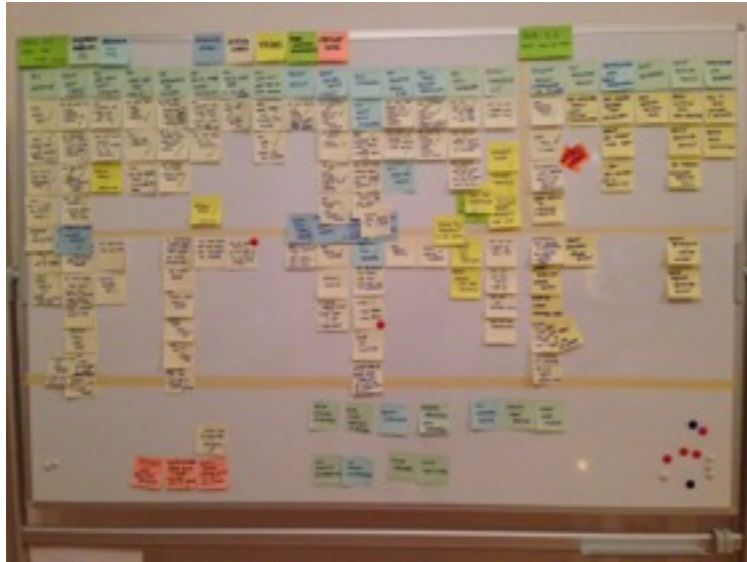
Our context



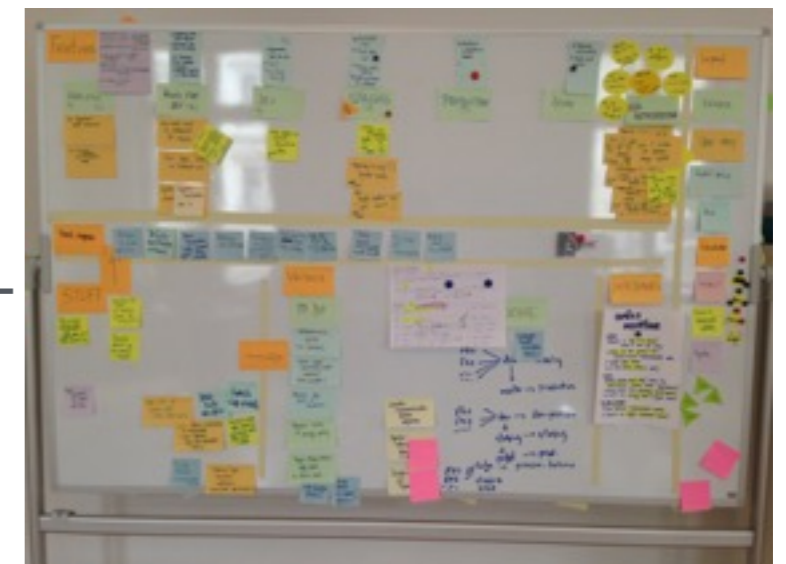
Our context



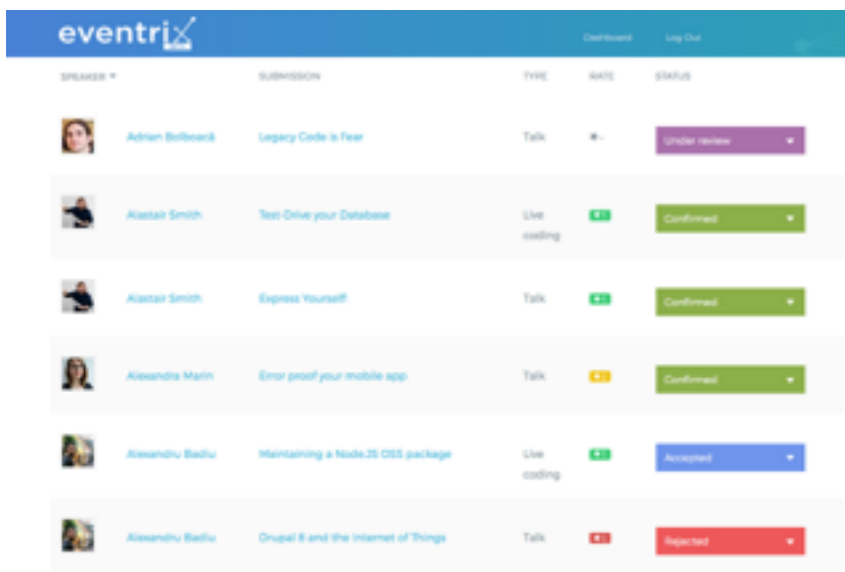
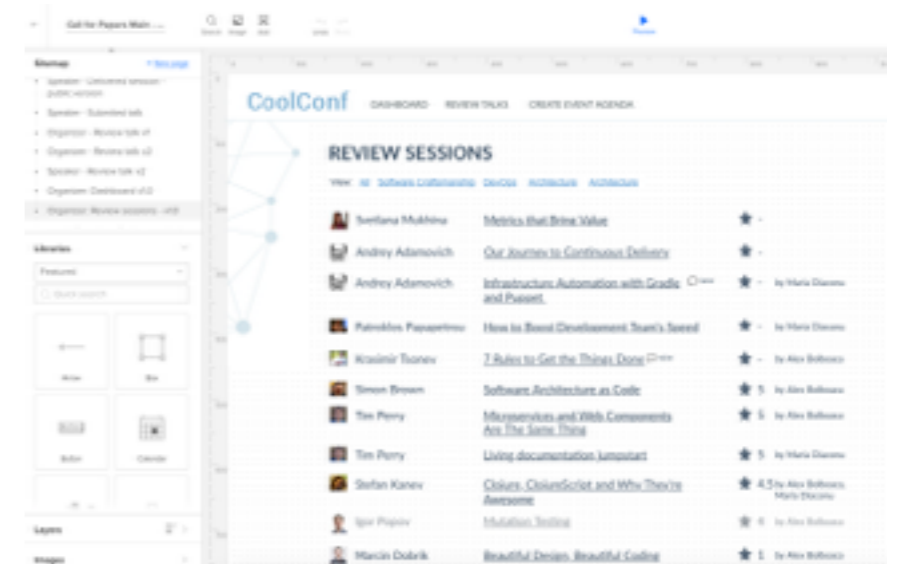
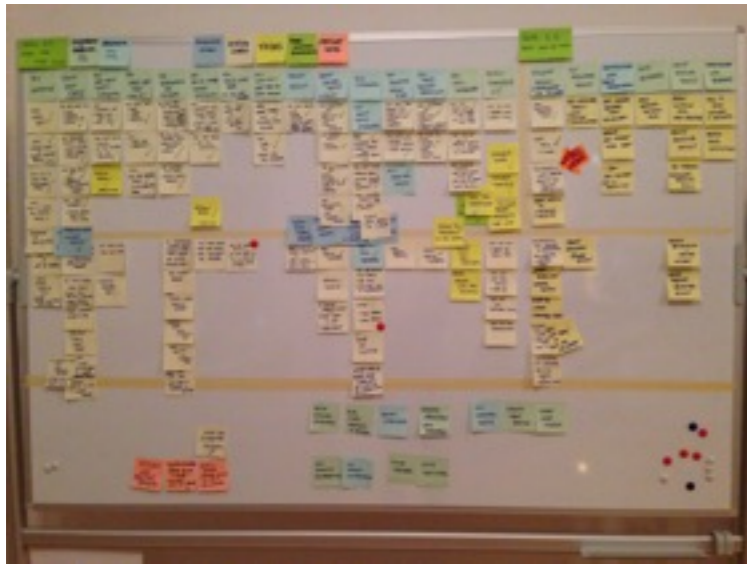
Our context



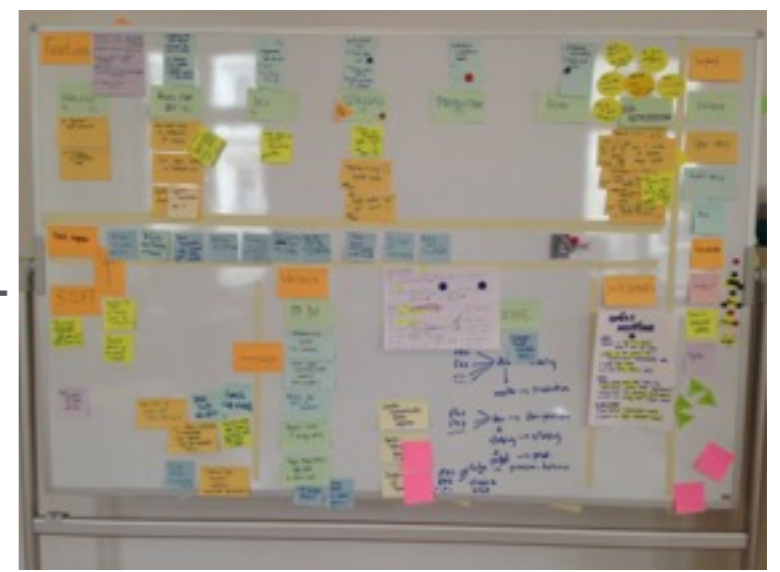
```
1 Feature: Add Order by option on Review list
2
3 As an organizer
4 I want to be able to view my submissions ordered by a criteria
5 So that I can select relevant sessions to work on first
6
7 # UI prototype is on post-it
8
9 Scenario: "Organizer view Review submissions list default - ordered by speaker, alphabetically"
10
11 Given
12 - "Alex" event organizer
13 - "Alex's conference" event
14 - "Alex's conference" has received multiple submissions
15
16 When
17 - Alex is logged in
18 - Alex is on the Review submissions page
19
20 Then
21 - Ensure that submissions are ordered by speaker alphabetically
22
23 # contributor is any column header in the Review submissions list: Speaker (in speaker name),
24 # Session (in session name), Type, Rating, Status
25 # Order by marker should be triangle facing down
26
27 Scenario: "Organizer orders submissions by contributor"
28
29 Given
30 - "Alex" event organizer
31 - "Alex's conference" event
32 - "Alex's conference" has received multiple submissions
33
34 When
35 - Alex is logged in
36 - Alex is on the Review submissions page
37 - Alex clicks column header
38
39 Then
40 - Ensure that submissions are ordered by the selected contributor and then ordered by speaker
41 - Ensure that <order by marker> is shown next to the selected contributor column header
```



Our context

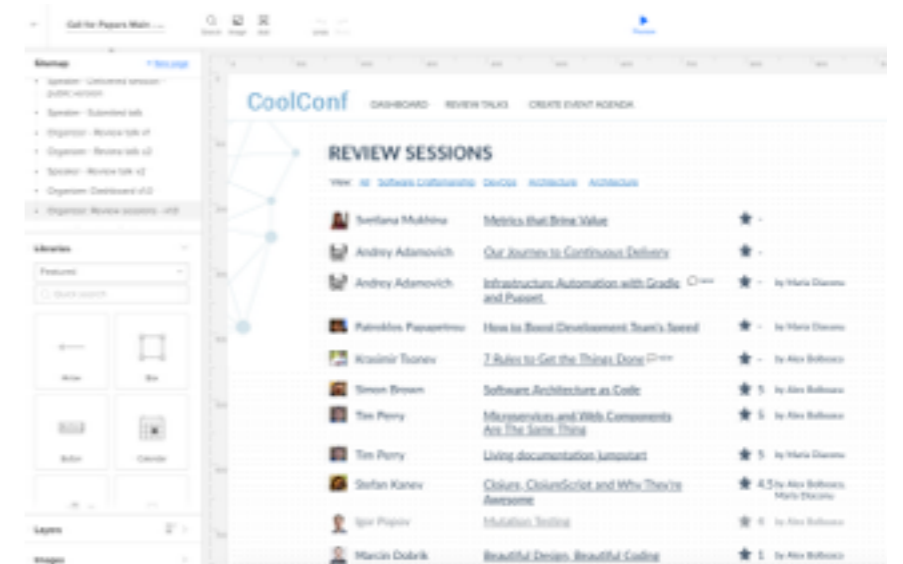
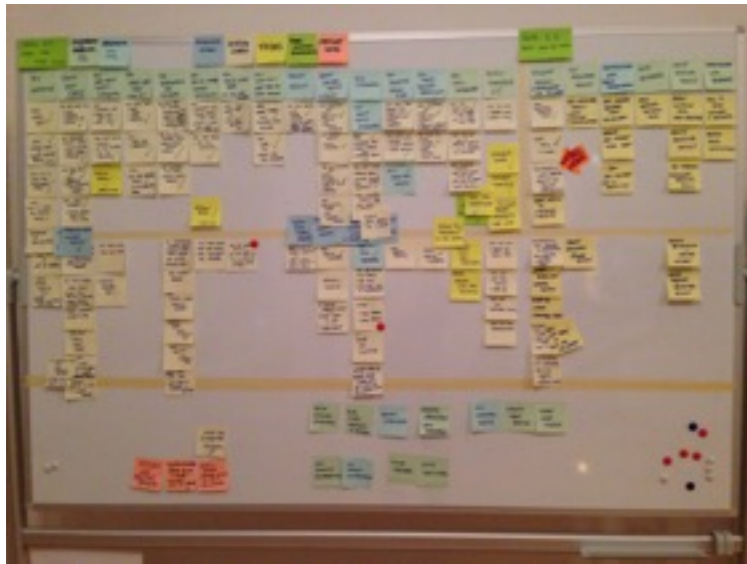


```
1 Features: Add Order by option on Review List
2
3 As an organizer
4 I want to be able to view my submissions ordered by a criteria
5 So that I can select relevant sessions to work on first
6
7 # 02 prototype is on post-11
8
9 Scenario: "Organizer view Review submissions list default - ordered by speaker, alphabetically"
10
11 Given
12 - "Alex" event organizer
13 - "Alex's conference" event
14 - "Alex's conference" has received multiple submissions
15
16 When
17 - Alex is logged in
18 - Alex is on the Review submissions page
19
20 Then
21 - Ensure that submissions are ordered by speaker alphabetically
22
23 # 03 prototype is on post-12
24 # 04 prototype is on post-13
25
26 Scenario: "Organizer orders submissions by contributor"
27
28 Given
29 - "Alex" event organizer
30 - "Alex's conference" event
31 - "Alex's conference" has received multiple submissions
32
33 When
34 - Alex is logged in
35 - Alex is on the Review submissions page
36 - Alex clicks column header
37
38 Then
39 - Ensure that submissions are ordered by the selected contributor and then ordered by speaker
40 - Ensure that <order by marker> is shown next to the selected <contributor> column header
```



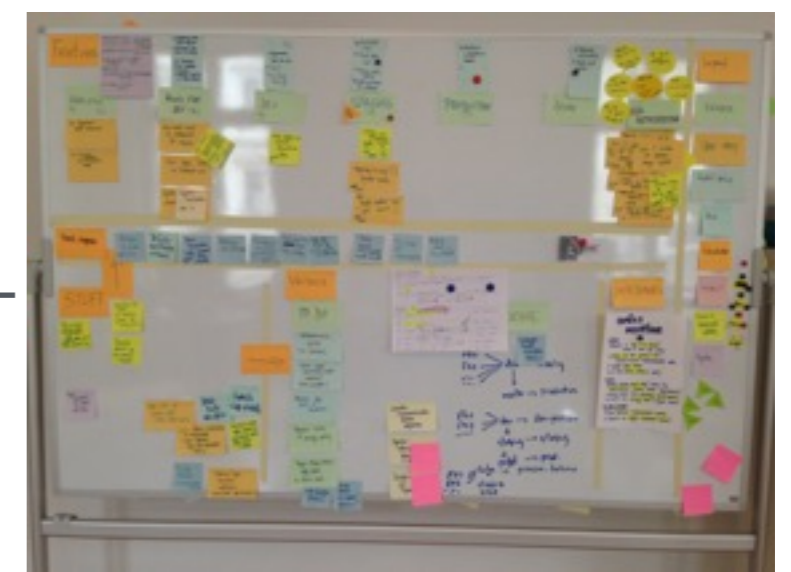
Our context

PO (UX) + stakeholders



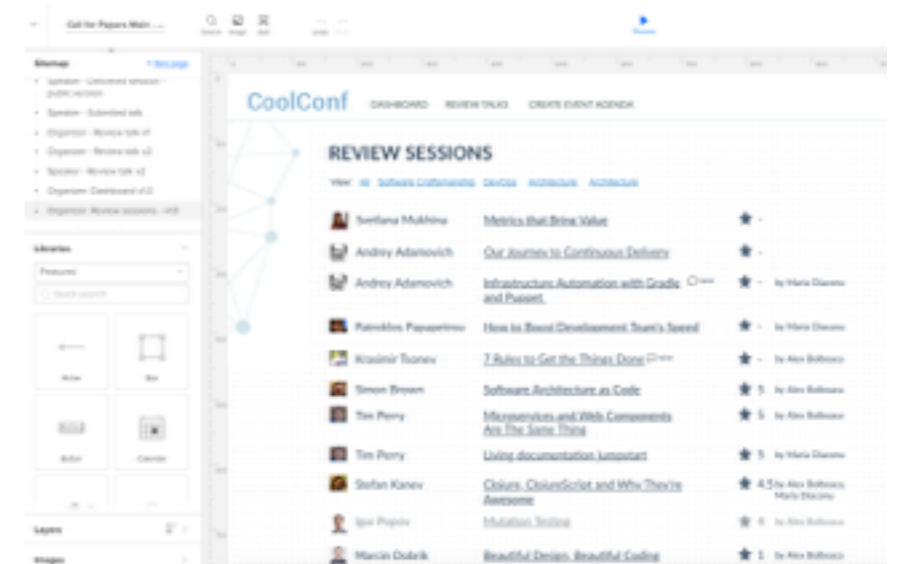
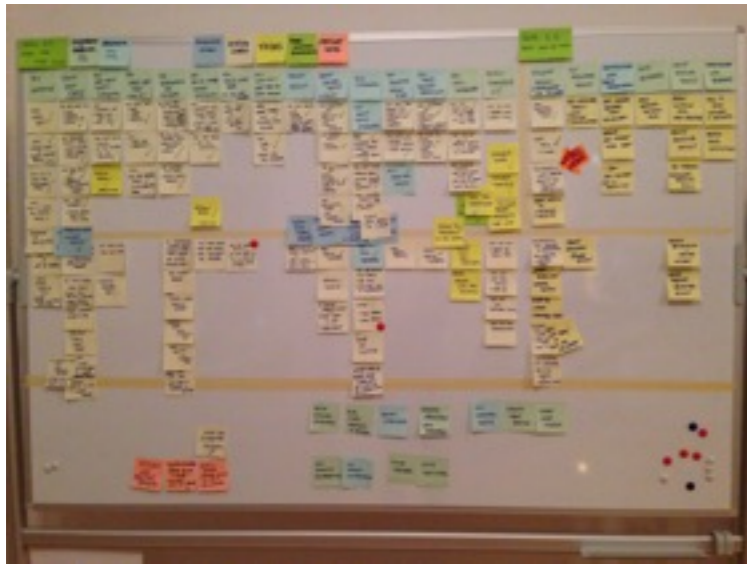
SPEAKER	SUBMISSION	TYPE	RATE	STATUS
Adrian Bolboacă	Legacy Code is Fear	Talk	4.0	Under review
Alexandr Smith	Test Drive your Database	Live coding	5.0	Confirmed
Alexandr Smith	Express Yourself!	Talk	5.0	Confirmed
Alexandra Marin	Error proof your mobile app	Talk	5.0	Confirmed
Alexandru Badu	Maintaining a NodeJS OSS package	Live coding	5.0	Accepted
Alexandru Badu	Drupal 8 and the Internet of Things	Talk	3.0	Rejected

```
1 Features: Add Order by option on Review List
2
3 As an organizer
4 I want to be able to view my submissions ordered by a criteria
5 So that I can select relevant sessions to work on first
6
7 # 02 prototype is on post-it
8
9 Scenario: "Organizer view Review submissions list default - ordered by speaker, alphabetically"
10
11 Given
12 - "Alex" event organizer
13 - "Alex's conference" event
14 - "Alex's conference" has received multiple submissions
15
16 When
17 - Alex is logged in
18 - Alex is on the Review submissions page
19
20 Then
21 - Ensure that submissions are ordered by speaker alphabetically
22
23 # contributor is any column header in the Review submissions list: Speaker (in speaker name),
24 # Session (in session name), Type, Rating, Status
25 # Order by marker should be triangle facing down
26
27 Scenario: "Organizer orders submissions by contributor"
28
29 Given
30 - "Alex" event organizer
31 - "Alex's conference" event
32 - "Alex's conference" has received multiple submissions
33
34 When
35 - Alex is logged in
36 - Alex is on the Review submissions page
37 - Alex clicks column header
38
39 Then
40 - Ensure that submissions are ordered by the selected contributor and then ordered by speaker
41 - Ensure that <order by marker> is shown next to the selected contributor column header
```



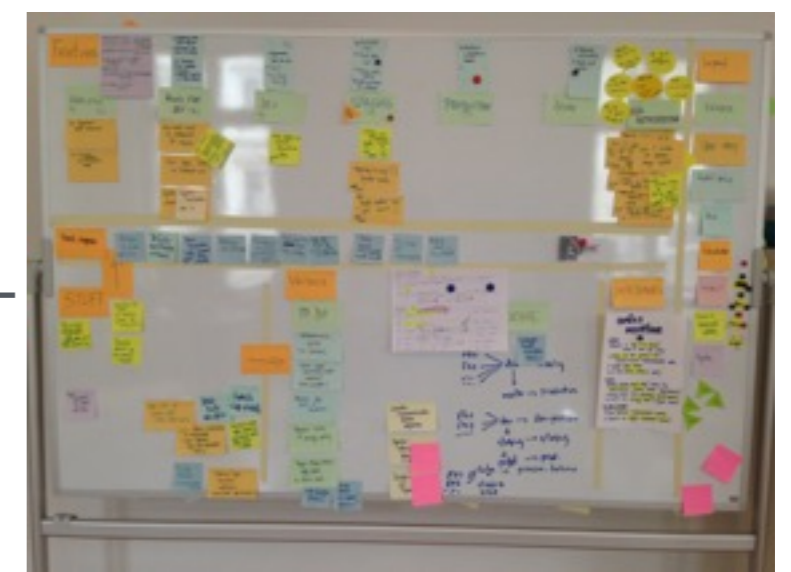
Our context

PO (UX) + stakeholders



SPEAKER *	SUBMISSION	TYPE	RATE	STATUS
Adrian Bolboacă	Legacy Code is Fear	Talk	4-	Under review
Alexandr Smith	Test Drive your Database	Live coding	3+	Confirmed
Alexandr Smith	Express Yourself!	Talk	3+	Confirmed
Alexandra Marin	Error proof your mobile app	Talk	2+	Confirmed
Alexandru Badu	Maintaining a NodeJS OSS package	Live coding	3+	Accepted
Alexandru Badu	Drupal 8 and the Internet of Things	Talk	2+	Rejected

```
1 Features: Add Order by option on Review List
2
3 As an organizer
4 I want to be able to view my submissions ordered by a criteria
5 So that I can select relevant sessions to work on first
6
7 # 03 prototype to an expert
8
9 Scenario: "Organizer view Review submissions list default - ordered by speaker, alphabetically"
10
11 Given
12 - "Alex" event organizer
13 - "Alex's conference" event
14 - "Alex's conference" has received multiple submissions
15
16 When
17 - Alex is logged in
18 - Alex is on the Review submissions page
19
20 Then
21 - Ensure that submissions are ordered by speaker alphabetically
22
23 # 04 prototype to an expert
24 Scenario: "Organizer orders submissions by contributor"
25
26 Given
27 - "Alex" event organizer
28 - "Alex's conference" event
29 - "Alex's conference" has received multiple submissions
30
31 When
32 - Alex is logged in
33 - Alex is on the Review submissions page
34 - Alex clicks column header
35
36 Then
37 - Ensure that submissions are ordered by the selected contributor and then ordered by speaker
38 - Ensure that "Order by markers" is shown next to the selected contributor column header
```



PO + devs (+ testers)

How we use BDD

Framework to analyse features

Support for team communication

Executable documentation

Acceptance criteria



How we use BDD

The whiteboard is organized into several columns and sections:

- ANALYSIS (1)**: Includes notes on "in context" and "out of context".
- Ready FOR DEV (2)**: Notes on "you need to be addressed for review" and "you can't work on production and".
- DEV (3)**: Notes on "code reviewed by colleague" and "code merged to release".
- STAGING (4)**: Notes on "code merged to staging" and "code merged to prod".
- PRODUCTION (5)**: Notes on "code merged to prod" and "code merged to prod".
- DONE**: Notes on "Deployed successfully" and "Smoke test passed".

Various section:

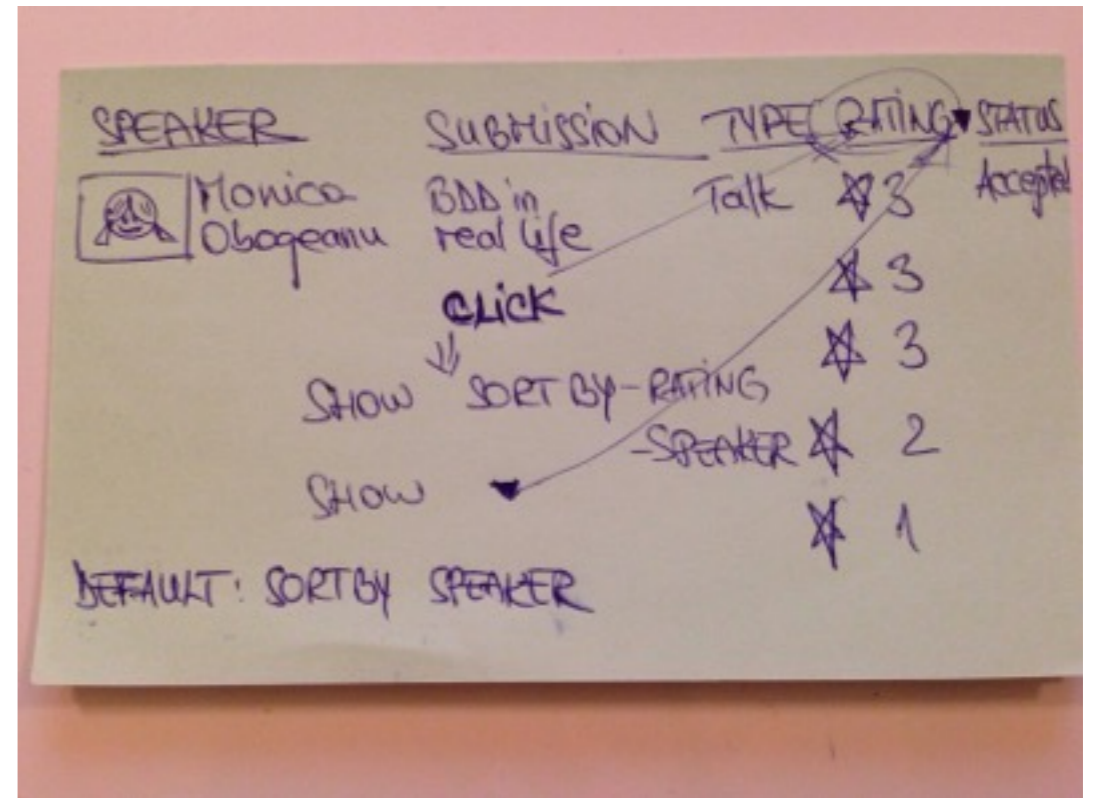
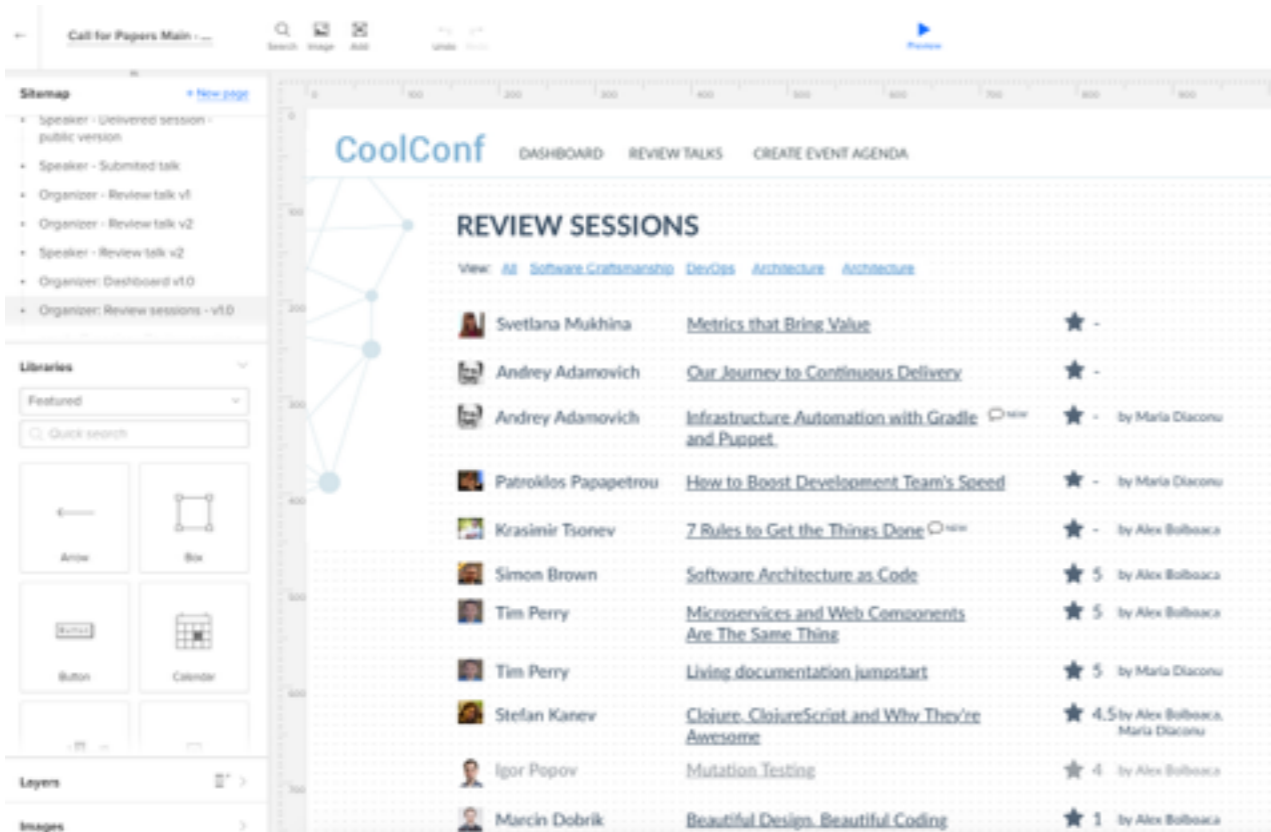
- TO DO**: A list of tasks including "PERFORMING KATA (in company)", "PLAN story SPLITTING WITH WORKING (non-follower)", "Review app tests + scenarios", "Review names & naming policy", and "Review scenarios".
- DAILY MEETING**: A structured agenda with questions like "What is done in 2 days?", "What is not done in 2 days?", "What are the blockers?", "What are the dependencies?", "What are the risks?", "What are the next steps?", "What are the next actions?", "What are the next priorities?", "What are the next milestones?", "What are the next deliverables?", "What are the next releases?", "What are the next updates?", "What are the next features?", "What are the next improvements?", "What are the next changes?", "What are the next updates?", "What are the next features?", "What are the next improvements?", "What are the next changes?"

Flow Diagram (Right side):

```
graph TD
    FB1[FB1] --> dev
    FB2[FB2] --> dev
    FB3[FB3] --> dev
    dev --> master
    master --> production
    dev --> dev_preview[dev -> dev-preview]
    dev_preview --> staging
    staging --> staging
    staging --> prod
    prod --> prod
```

Policy: when Ready for Dev < 3

How we use BDD



PO (UX) prepares visual prototype

How we use BDD



PO + developer + tester

UX researcher, UX designer, data analyst etc.

Facilitator: knows the framework well

How we use BDD

```
add order by option on review sessions
1 Feature: Add Order by option on Review list
2
3 As an organizer
4 I want to be able to view my submissions ordered by a criteria
5 So that I can select relevant sessions to work on first
6
7 # UI protitype is on post-it
8
9 Scenario: "Organizer views Review submissions list default - ordered by speaker, alphabetically"
10
11 Given
12 - "Alex" event organizer
13 - "Alex's conference" event
14 - "Alex's conference" has received multiple submissions
15
16 When
17 - Alex is logged in
18 - Alex is on the Review submissions page
19
20 Then
21 - Ensure that submissions are ordered by speaker aplhabetically
22
23
24 # <atribute> is any column header in the Review submissions list: Speaker (= speaker name), Session (= session name)
25   , Type, Rating, Status
26   # Order by marker should be triangle facing down
27 Scenario: "Organizer orders submissions by <atribute>"
28
29 Given
30 - "Alex" event organizer
31 - "Alex's conference" event
32 - "Alex's conference" has received multiple submissions
33
34 When
35 - Alex is logged in
36 - Alex is on the Review submissions page
37 - Alex clicks column header
38
39 Then
40 - Ensure that submissions are ordered by
41 - Ensure that <Order by marker> is shown
42
```

Discuss scenarios:

Start with the outputs
Give real-life examples
Ask What if...

USE
CHECKLIST



How we use BDD

```
add order by option on review sessions x
1 Feature: Add Order by option on Review list
2
3 As an organizer
4 I want to be able to view my submissions ordered by a criteria
5 So that I can select relevant sessions to work on first
6
7 # UI protitype is on post-it
8
9 Scenario: "Organizer views Review submissions list default - ordered by speaker, alphabetically"
10
11 Given
12 - "Alex" event organizer
13 - "Alex's conference" event
14 - "Alex's conference" has received multiple submissions
15
16 When
17 - Alex is logged in
18 - Alex is on the Review submissions page
19
20 Then
21 - Ensure that submissions are ordered by speaker aphabetically
22
23
24 # <atribute> is any column header in the Review submissions list: Speaker (= speaker name), Session (= session name)
25 , Type, Rating, Status
26 # Order by marker should be triangle facing down
27 Scenario: "Organizer orders submissions by <atribute>"
28
29 Given
30 - "Alex" event organizer
31 - "Alex's conference" event
32 - "Alex's conference" has received multiple submissions
33
34 When
35 - Alex is logged in
36 - Alex is on the Review submissions page
37 - Alex clicks column header
38
39 Then
40 - Ensure that submissions are ordered b
41 - Ensure that <Order by marker> is show
42
```

Write & save scenarios: Gerkin

Goals - Signals - Metrics

How we use BDD

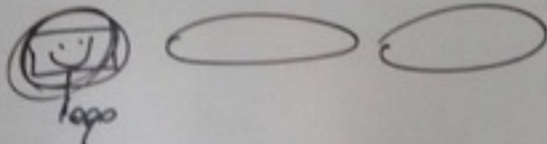
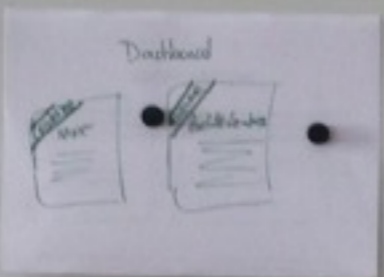
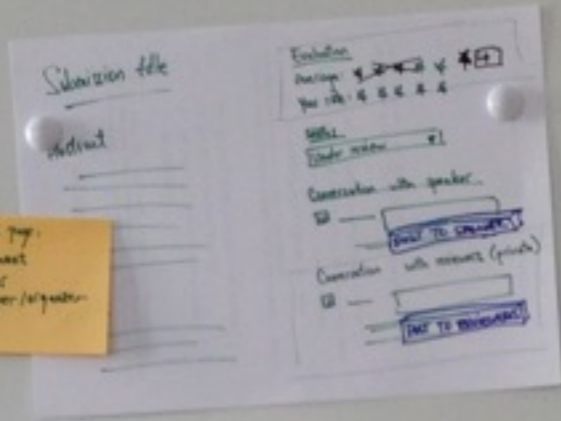
```
def "asks for password reset with email associated to a user"() {  
  given: "from reset password page"  
  to ResetPasswordPage  
  
  when: "writes the email"  
  email = "alexboly@gmail.com"  
  submit.click()  
  
  then: "displays password reset message"  
  info.text() == "A message was sent to alexboly@gmail.com with instructions for next steps"  
}  
  
def "asks for password reset with email not associated to a user"() {  
  given: "from reset password page"  
  to ResetPasswordPage  
  
  when: "writes the email"  
  email = "ttt@ttt.com"  
  submit.click()  
  
  then: "displays password reset message"  
  info.text() == "A message was sent to ttt@ttt.com with instructions for next steps"  
}
```

Write functional tests: Groovy + GEB + Spock

Make sure all resources are shared

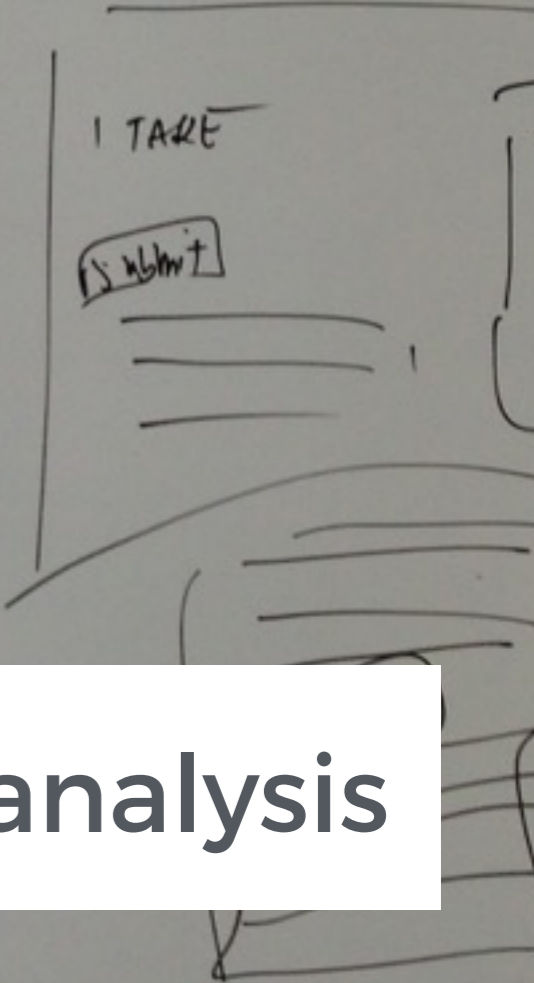
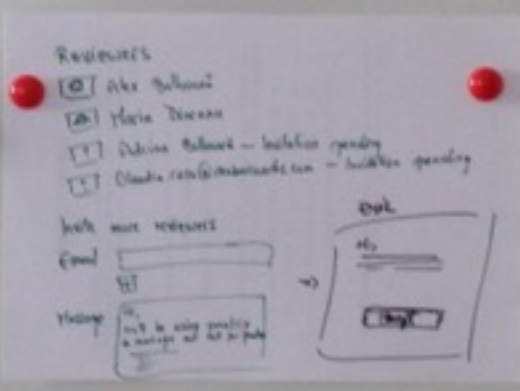
Benefits

- View rating average on submission
- View average rate on submission
- View average rate in Review submissions list
- On Submission view private conversations between reviewers
- When new private conversation Show new message each in Review submissions list
- When just connect on submission private conversation - send email notifications
- Add Collapse or Conversation on Submission
- On submission page. Delete comment via speaker and reviewer/organizer
- Keep date for Submission = same = view = list
- Update "last submission" date, add number one?
- Keep date for Session = same = view = list
- Add sorting on Speaker My submissions
- Add sorting on Speaker My reviews
- View card card on dashboard for reviewer
- View Role such on Dashboard card
- As Organizer back reviewers
- As Organizer - Submit new Submission page
- As Organizer with reviewer = view it will form = send invitation email = view Reviewer - invitation
- As Reviewer - receive invitation email - accept invitation - create user profile - assign as reviewer to event - view card, view permission - upgrade some features
- As Reviewer when on Submit submission page show card "Can't submit as reviewer yet..."
- As Organizer back team member (organizer permission)



- Separate conversation view
- Choose is private message?
- Who sees / gets notification?
- ! 2 separate
- ! When speaker & reviewer
- Speaker on his own Submission = Speaker
- Speaker on other Submission = Reviewer
- ! Email notifications → "subscriptions"

- ! Keep menu in event context
- Review for events → menu in event context



FEATURE ANALYSIS

- START WITH THE OUTPUT
- GIVE EXAMPLES
- WHAT ELSE DOES THIS IMPLY?
- SHOULD THIS STORY BE SPLIT?
- IF YES TIME TO SPLIT THAN 2 DAYS
- NAME SPEC AS GIVE MEETS
- Active / loading (visual details)
- Needs ordering in list
- Needs focus on first field

Determines a thorough feature analysis

Benefits

View rating average on submission

View average rate & call submission

View average rate in Review submissions list

On Submission View private conversations between reviewers

When new private conversation Show new message each in Review submissions list

When just connect on submission private conversation - send email notifications

Add Collapse or Conversation on Submission

On submission page. Delete comment via speaker + as reviewer/organizer

Keep date for Submission = same = view = list

Update "last submission" date, add number one?

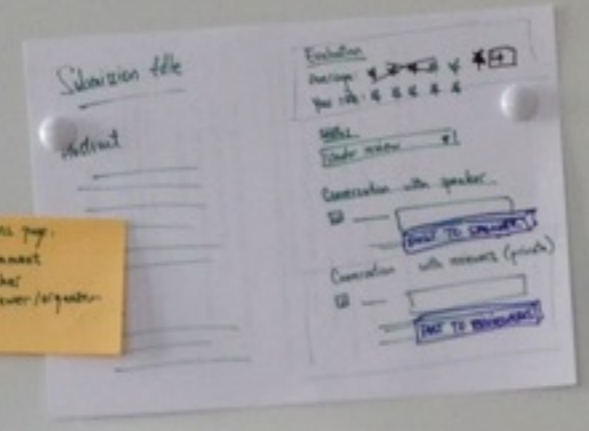
Keep date for Session = same = view = list

Add sorting on Speaker My submissions

Add sorting on Speaker My reviews

View next card on dashboard for reviewer

View Role such on Dashboard next



→ Separate conversation view

→ Choose is private message?

→ Who sees / gets notification?

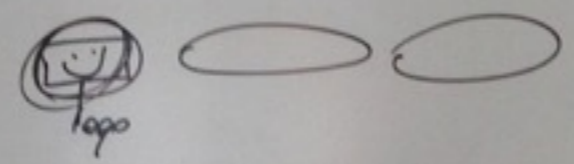
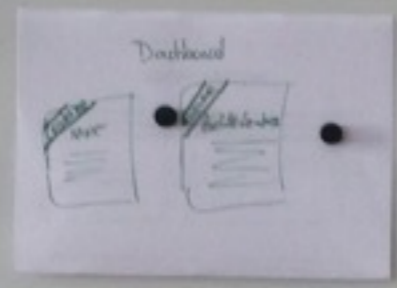
! When speaker & reviewer

• Speaker on his own Submission = Speaker

• Speaker on other Submission = Reviewer

! Email notifications → "subscriptions"

! Keep menu in event context



Supports team communication:

Clarify requirements
Discover new use-cases
Make just-in-time decisions

FEATURE ANALYSIS

- START WITH THE OUTPUT
- GIVE EXAMPLES
- WHAT ELSE DOES THIS IMPLY?
- SHOULD THIS STORY BE SPLIT?
- DOES THIS TAKE LONGER THAN 2 DAYS
- USE SPECS AS GIB NETS

! Active / loading (logical delete)

! Needs ordering in list

! Needs focus on first field

! Sort by rating

! Avg computed at review!

Benefits

```
= new MyPageChangeListener()  
pageChangeListener(pageChangeListener)
```

```
def "asks for password reset with email associated to a user"() {  
  given: "from reset password page"  
  to ResetPasswordPage  
  
  when: "writes the email"  
  email = "alexboly@gmail.com"  
  submit.click()  
  
  then: "displays password reset message"  
  info.text() == "A message was sent to alexboly@gmail.com with instructions for next steps"  
}
```

```
def "asks for password reset with email not associated to a user"() {  
  given: "from reset password page"  
  to ResetPasswordPage  
  
  when: "writes the email"  
  email = "ttt@ttt.com"  
  submit.click()  
  
  then: "displays password reset message"  
  info.text() == "A message was sent to ttt@ttt.com with instructions for next steps"  
}
```

```
def "asks for password reset with invalid email"() {  
  given: "from reset password page"  
  to ResetPasswordPage
```

Executable documentation

Benefits

1 **Feature:** Add Order by option on Review list

2
3 As an organizer

4 I want to be able to view my submissions ordered by a criteria

5 So that I can select relevant sessions to work on first

6
7 # UI protitype is on post-it

8
9 **Scenario:** "Organizer views Review submissions list default – ordered by speaker, alphabeti

10
11 **Given**

12 – "Alex" event organizer

13 – "Alex's conference" event

14 – "Alex's conference" has received multiple submissions

15
16 **When**

17 – Alex is logged in

18 – Alex is on the Review submissions page

19
20 **Then**

21 – Ensure that submissions are ordered by speaker aplhabetically

22
23
24 # <atribute> is any column header in the Review submissions list: Speaker (= speaker name)

25 Session (= session name), Type, Rating, Status

26 # Order by marker should be triangle facing down


27 **Scenario:** "Organizer orders submissions by <atribute>"

28
29 **Clear acceptance criteria**

30
31 – "Alex's conference" event

32 – "Alex's conference" has received multiple submissions

A handwritten table with columns: SPEAKER, SUBMISSION, TYPE, RATING. The first row shows a speaker icon, 'Monica Obageanu', 'BBB in real life', 'Talk', and a star rating of 3. Below the table, there are handwritten notes: 'CLICK', 'SHOW', and 'SORT BY - RATING' with a downward arrow pointing to the RATING column.

SPEAKER	SUBMISSION	TYPE	RATING
 Monica Obageanu	BBB in real life	Talk	★ 3

CLICK
SHOW ↓ SORT BY - RATING

Benefits

Request password reset
- existing user
26.04 Notification user changed password 26.04

Add My sessions list (+ new menu item)
6.04 6.04

but No Call for Speakers
Session types & Timeline dates
7.03 Invitation only
Speaker - Dashboard - Card
If no CFS or Invitations
don't show states

3.03 DS
Please upload a file of up to 16 MB.

Automatically Open & Close
Call for Speakers
When all dates are entered
8.03 DS

When special characters in session / submission
Save nice slugs
15.03 DS 16.03

When special characters is speaker name
Save nice slug
14.03 DS 16.03

DDS
Add color codes on session state drop-down list
27.02 DDS 1.03

Add thumbnail version for default avatar
29.02 DDS 3.03
* SPEAKER
* EVENT LOGO

When special characters in ~~Speaker~~ / event name
ä => a (now it's -)
s => S
etc.
14.03 DSS 16.03

Faster & more predictable delivery of features

5.04 Design

(all places where we have input fields)

Public profile.

Red flags



Don't skip the conversation

Red flags



Too many outcomes => story sliced enough?

Red flags



Analyse just-in-time (your #of devs & cycle time)

Benefits

Red flags

View rating average on submission

View average rate & call submission

View average rate in Review submissions list

On Submission view private conversation between reviewers

When new private conversation Show new message each in Review submissions list

When just connect on submission private conversation - send email notifications

Add Collapse or Conversation on Submission

On submission page. Delete comment via speaker + as reviewer/speaker

Keep date for Submission = same = view = list

Update "last submission" date, add number one?

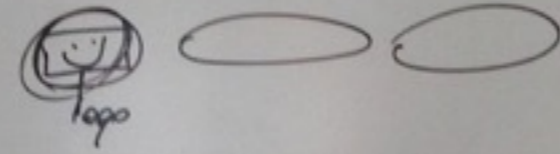
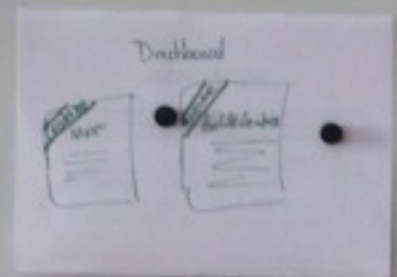
Keep date for Session = same = view = list

Add sorting on Speaker My submissions

Add sorting on Speaker My reviews

View card card on dashboard for reviewer

View Role such on Dashboard card



As Organizer built reviewers

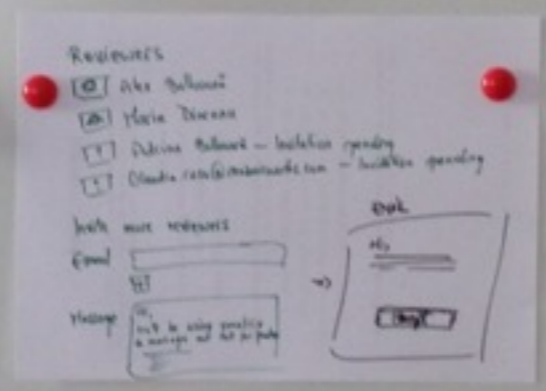
As Organizer - Speaker - Reviewer app

As Organizer with reviewer = view & call form = send invitation email = view Reviewer - invitation

As Reviewer - receive invitation email - accept invitation - create user (profile) - accept as reviewer in app (view card, view permission) - register some features...

As Reviewer when on submit submission page show start - Can't get out of reviewer yet...

As Organizer built team member (organizer permission)



FEATURE ANALYSIS

- START WITH THE OUTPUT
- GIVE EXAMPLES
- WHAT ELSE DOES THIS IMPACT?
- SHOULD THIS STORY BE SPLIT?
- DOES TIME ADD UP TO MORE THAN 2 DAYS
- USE SPEC AS GIB NETS

Active / loading (visual details)

Needs ordering in list

Needs focus on first field

! Sort by rating

! Avg computed at review update & review!

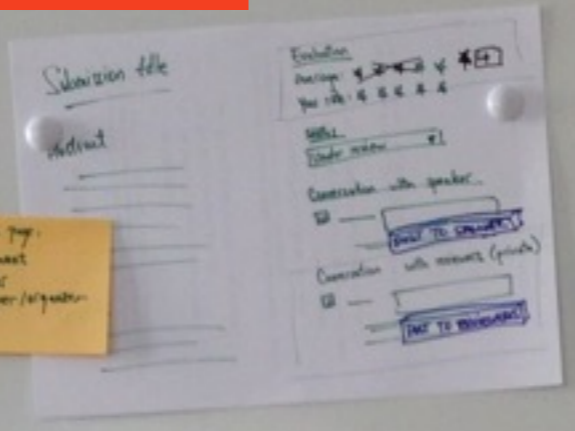
Can you enter view submission see Evaluation

Rate Submission

End comment - rating - view & log

End comment (org) no view

Send comment - send to list post



→ Separate conversation view

→ Choose is private message?

→ Who sees / gets notification?

! 2 separate

! When speaker & reviewer

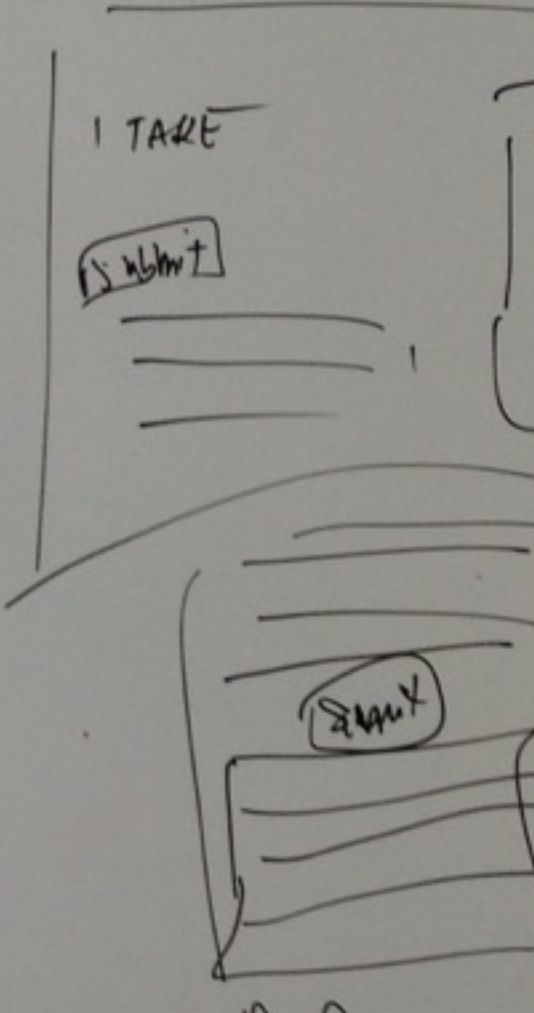
- Speaker on his own Submission = Speaker
- Speaker on other Submission = Reviewer

! Email notifications → "subscriptions"

! Keep menu in event context

Review for threads

→ menu in card context



Red flags



Analyse just-in-time (your #of devs & cycle time)

Red flags

You'll still miss things:

**Communicate fast
Don't assign blame**



Topics

- What is BDD - quick recap
- How we use BDD
- Benefits
- Red flags
- Q&A and experience sharing

Topics

- ✓ What is BDD - quick recap
 - ✓ How we use BDD
 - ✓ Benefits
 - ✓ Red flags
 - ✓ Q&A and experience sharing
- Thank you!*