# From idea to end user faster and with better quality

**Kristian Karl, Spotify**

# Engineering Manager at Spotify

@kristiankarl

Spotify

GraphWalker
Overview
Get started
MBT How to
Supported features
How to build it
Change Log
Support
General workflow
Documentation
Command Line Interface
REST API
Websocket API
Maven plugins
File formats
Examples
Download
License

graphwalker.org

# Getting started overview

**Summary:** GraphWalker is an open source Model-based testing tool for test automation. It's designed to make it easy to design your tests using graphs.

## GraphWalker survey

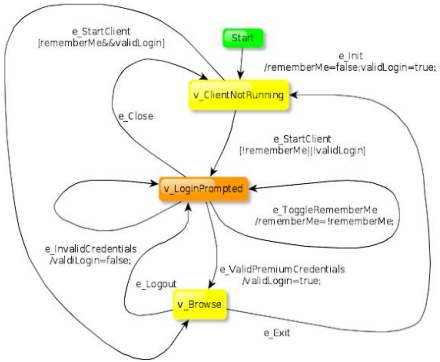
We created a questionnaire which we would love our users to fill in. The purpose is to help us understand how GraphWalker is used.

Please go to GraphWalker Survey

## Overview

GraphWalker is an Model-Based testing tool. It reads models in the shape of directed graphs, and generate [test] paths from these graphs.

A model can look like the one to the next. The model is collection of arrows and nodes and together they create a graph.




- An arrow represents an action.
- A node represents a verification.

## What GraphWalker does

Given a model and a generator rule, GraphWalker by mathematical algorithms generates a path which corresponds to your test idea. Next image illustrate such result.

XCODE
JS
TEAM
PRODUCT MANAGER
#RIDESHIMANO

# Psychological safety

Spotify

Home 36 Notifications Messages Search Twitter Tweet

**Gitte Klitgaard**
@NativeWired

Agile Coach, curious, believer in Altruistic Reciprocity, hippie, friend, hugger, learner & more :) Cis, she/hers/her

Risskov, Denmark

Joined September 2011

© 2019 Twitter About Help Center Terms
Privacy policy Cookies Ads info

**Gitte Klitgaard**
@NativeWired

Follow

I love working with psychological safety. Creating a space for people to talk about things, contemplate, improve and learn. It is draining and rewarding at the same time.

10:57 AM - 12 Apr 2018

**16** Retweets **39** Likes

5 16 39

Tweet your reply

**Gitte Klitgaard** @NativeWired · 12 Apr 2018
I keep learning about people and keep being amazed about the ideas people come up with to have that safe space for themselves and others.
It is a privilige to help people open the gate to their ideas

1 3

**Gitte Klitgaard** @NativeWired · 12 Apr 2018
The more I work with it, the more I see just how important feeling safe is. Important to the work we do and the humans that we are

3 4

**Gitte Klitgaard** @NativeWired · 12 Apr 2018
Why draining you may ask?
Holding the space, opening my heart, caring gives and drains.
Facilitating intense sessions, reading people to see what they need to speak up - it all costs energy.
And it is worth it <3

3 3 12

**Karen Greaves** @karen_greaves · 12 Apr 2018
Replying to @NativeWired
I am amazed how much I have to reassure my team: I don't care what time they leave, I want them to invest in learning, they should take leave when they are sick, working from home is fine.

1 4

**Gitte Klitgaard** @NativeWired · 12 Apr 2018
It is amazing.. And just because they are not used to it..

1

**Karen Greaves** @karen_greaves · 12 Apr 2018
Mostly it's because they have been told no in the past.

1

**Gitte Klitgaard** @NativeWired · 12 Apr 2018

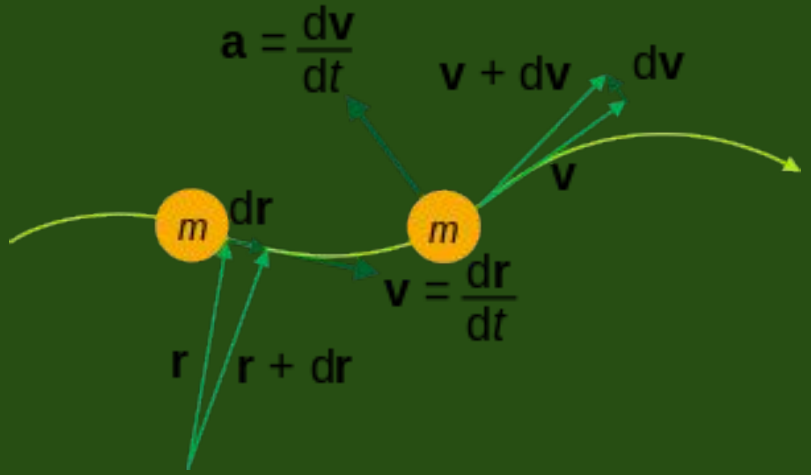
# Planning: understanding the whys

Spotify

# Realistic planning

Spotify

# Know your velocity

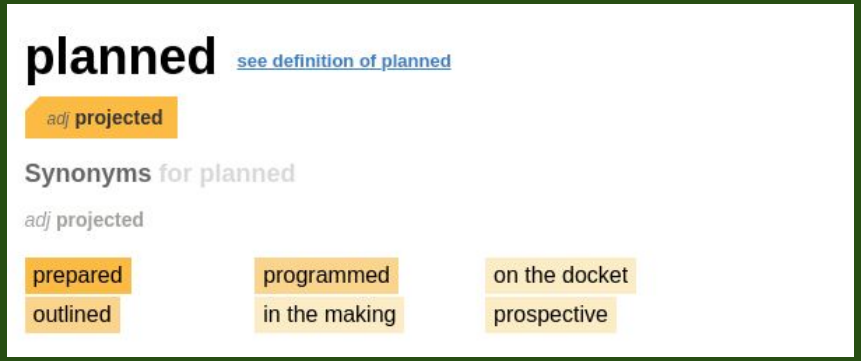



Spotify

# Capacity planning

Spotify

# Planned vs unplanned



**planned** see definition of planned

*adj* **projected**

Synonyms for planned

*adj* **projected**

| | | |
|---|---|---|
| prepared | programmed | on the docket |
| outlined | in the making | prospective |

www.thesaurus.com

**unplanned** see definition of unplanned

*adj* **not planned**

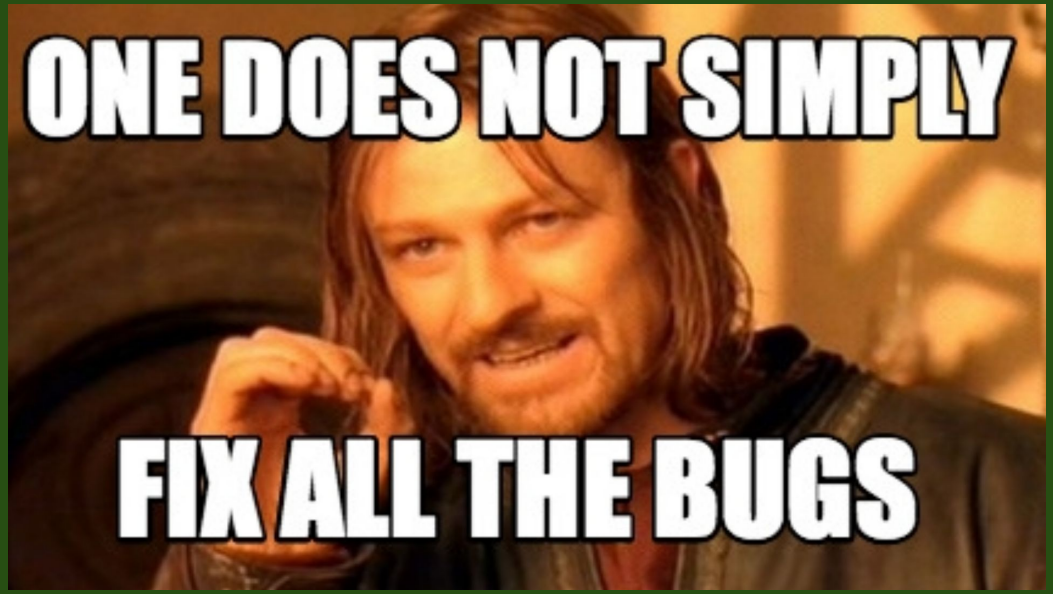
Synonyms for unplanned

*adj* **not planned**

| | | | |
|---|---|---|---|
| accidental | random | unintended | aleatory |
| haphazard | spontaneous | unintentional | fortuitous |
| impromptu | unexpected | adventitious | undesigned |

Spotify

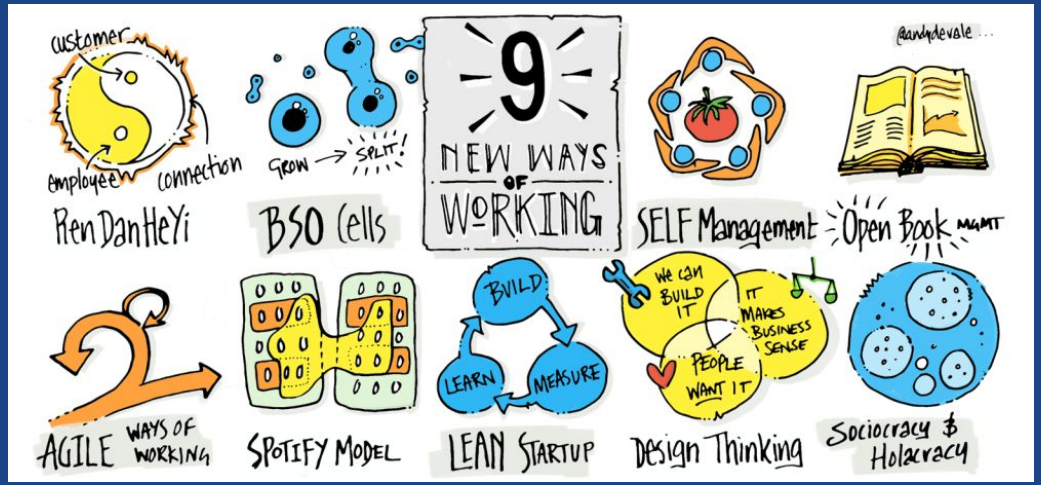
# Zero bug policy




Spotify

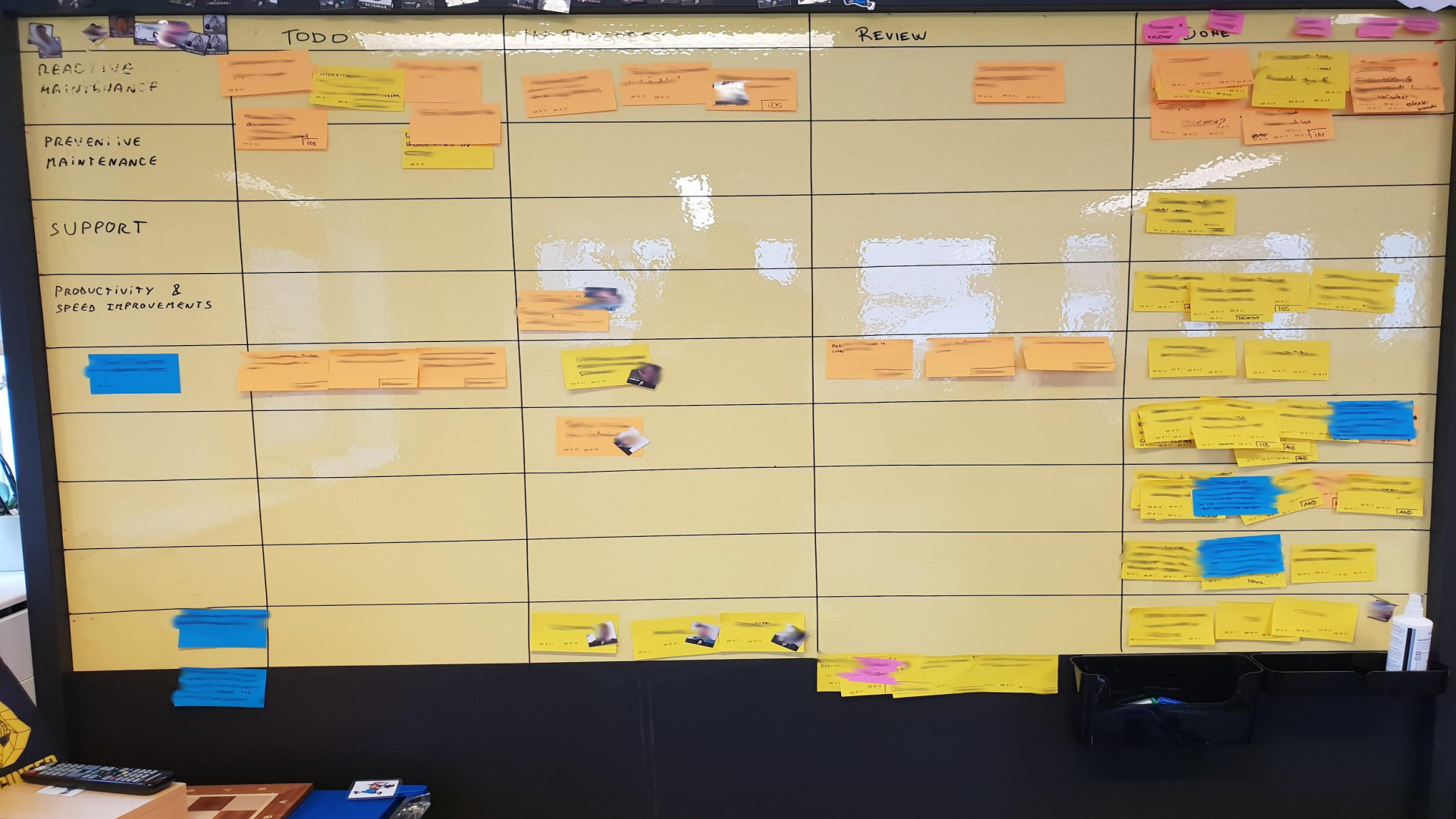
# Add 20%

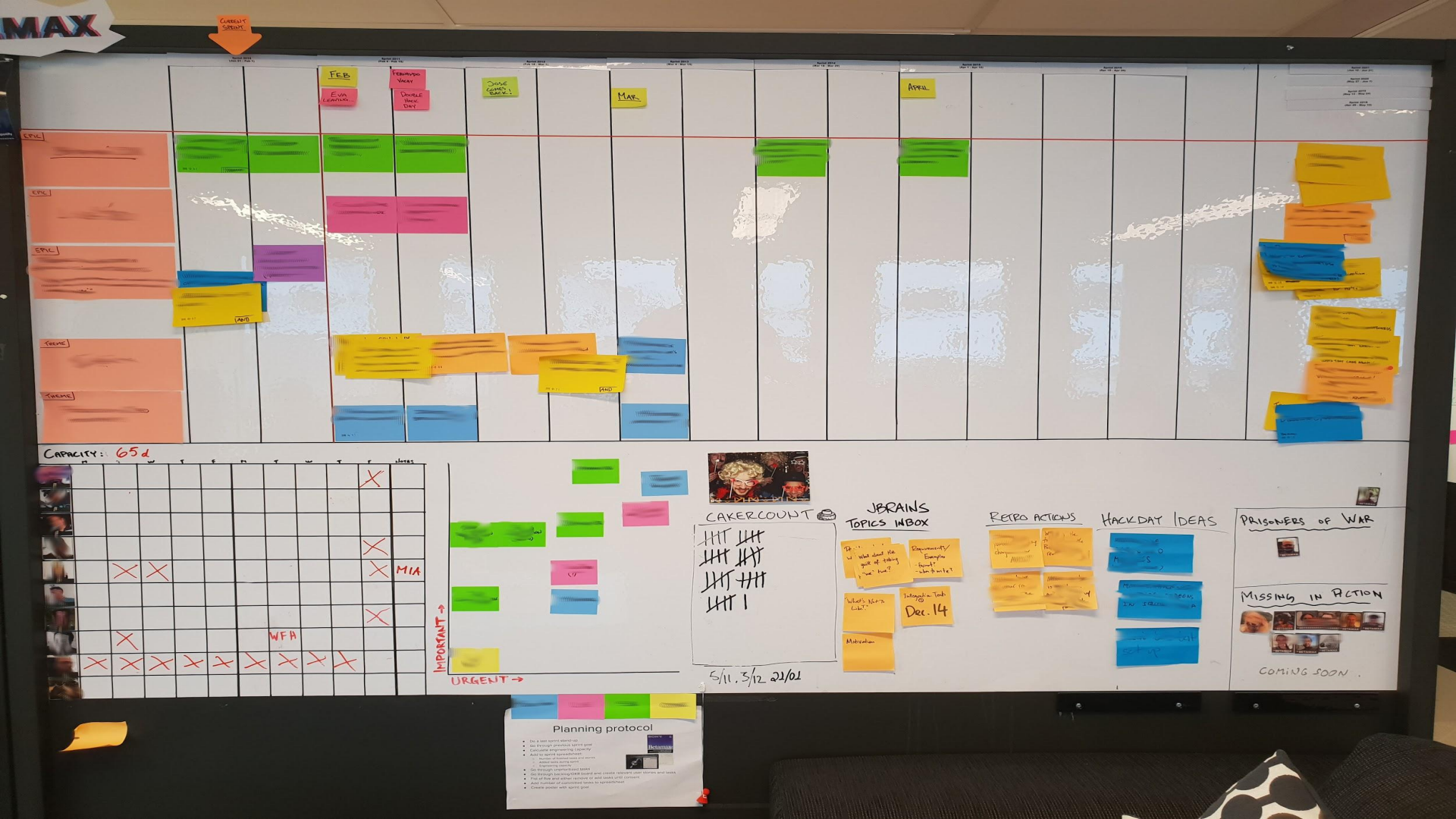
Spotify




# Ways of working

Spotify


TODO
REVIEW
DONE
REACTIVE MAINTENANCE
PREVENTIVE MAINTENANCE
SUPPORT
PRODUCTIVITY & SPEED IMPROVEMENTS


MAX
CURRENT SPRINT
FEB
EVA LEAVES
FEBRUARY VACAY
DOUBLE HACK DAY
JOSE COMES BACK!
MAR
APRIL
EPIC
EPIC
EPIC
THEME
THEME
AND
AND
CAPACITY: 65d
MTWTFMTWTF Notes
MIA
WFH
IMPORTANT →
URGENT →
CAKE COUNT
5/11, 3/12 21/01
JBRAINS TOPICS INBOX
What about the goal of doing "not" here?
Requirements/ Examples - Primal - Use it or lose it
What's Next? Links?
Integration Test Dec. 14
Motivation
RETRO ACTIONS
HACKDAY IDEAS
PRISONERS OF WAR
MISSING IN ACTION
COMING SOON.
Planning protocol
Do a last sprint stand-up
Go through previous sprint goal
Calculate engineering capacity
Add to sprint spreadsheet
Add number of committed tasks to spreadsheet
Create poster with sprint goal

# The silos within

Spotify

# Swarming and spiking

Spotify

# The T-shaped developer

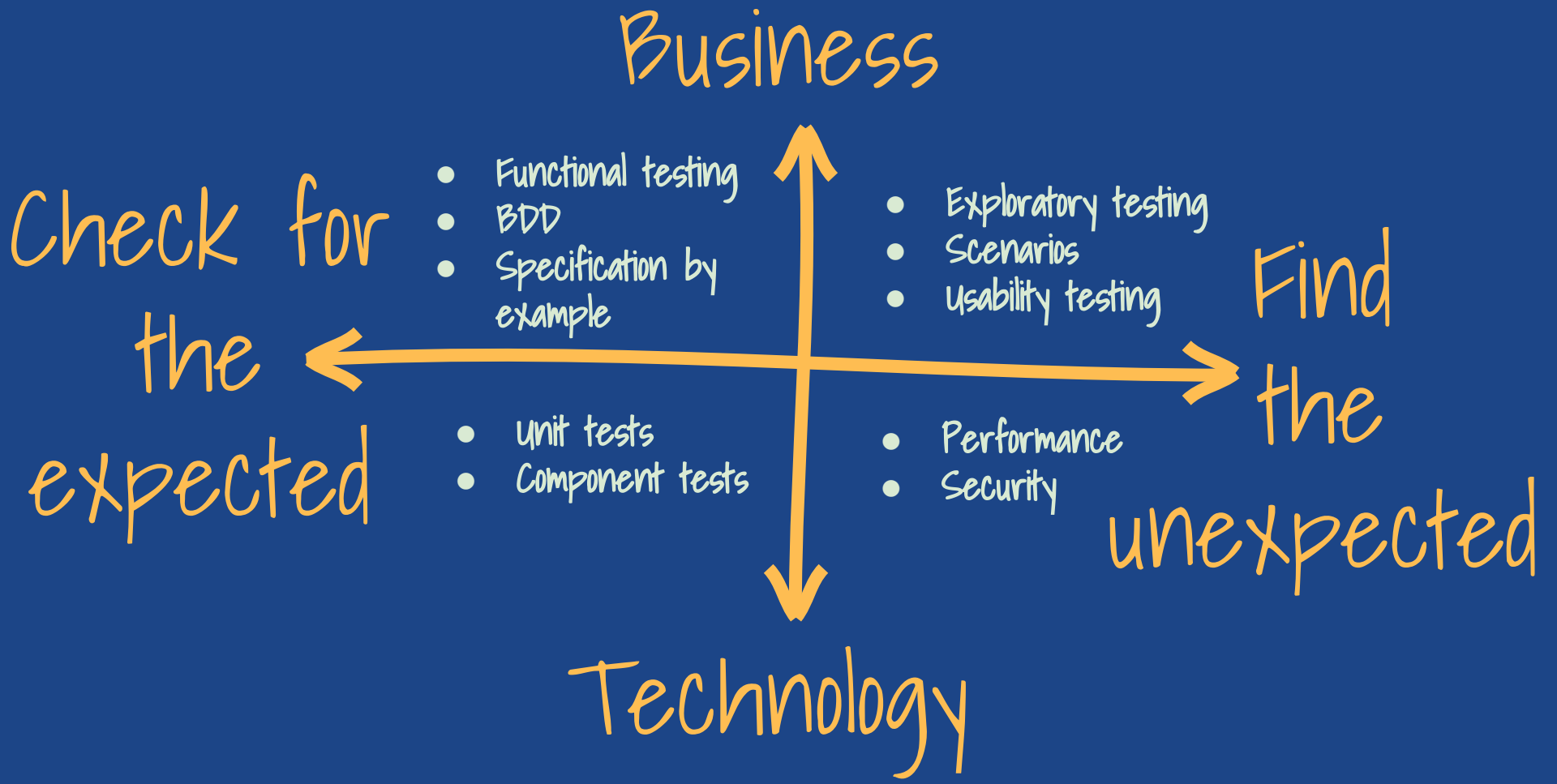
Spotify

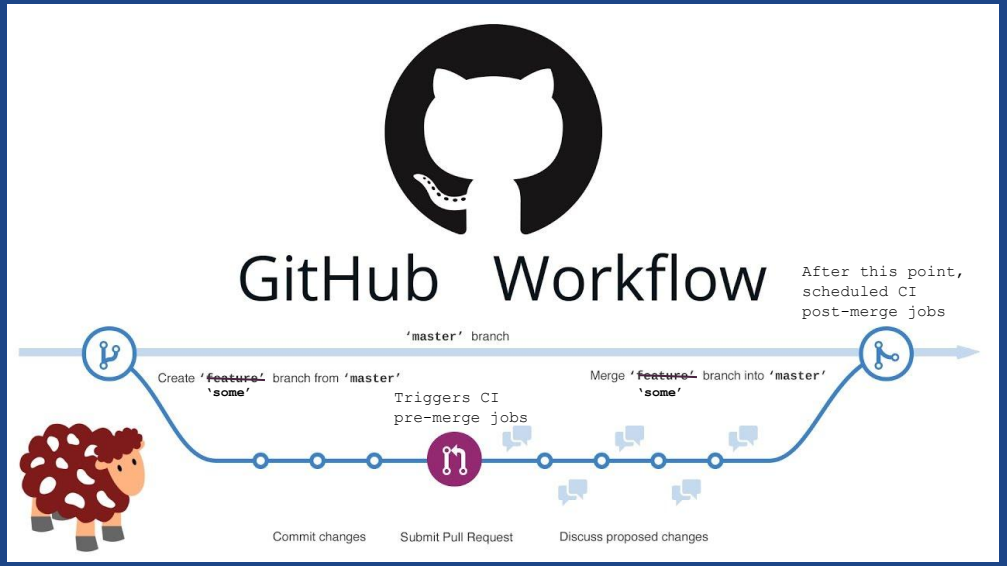
# Always releasable master

Spotify

# Testing and checking

Spotify


Business
Check for the expected
Find the unexpected
Technology
Functional testing
BDD
Specification by example
Exploratory testing
Scenarios
Usability testing
Unit tests
Component tests
Performance
Security



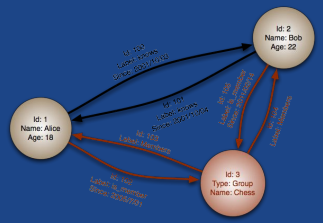

# Continuous Integration

Spotify

# Automation in CI is designed to verify

Spotify

- Property-based
- Model-based



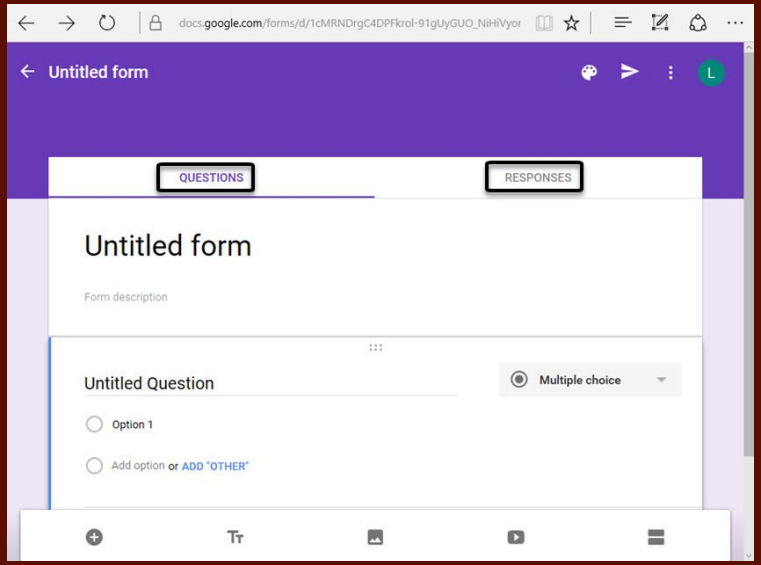

# Automation in post-merge is designed to find bugs

Spotify

# Testing in production

Spotify®

# Getting feedback from users




Spotify

# Maintenance takes precedence

Spotify

Spotify

# The outcome?

- Fewer incidents
- More planned work finished
- On-time deliveries