

# USING AUTOMATION TO “SPARK JOY” & “BOOST APP QUALITY”

- JOE CYBOSKI, THE NEW YORK TIMES -

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## MOBILE APPS - PLATFORM ENGINEER

- Maintain a quality app experience while supporting distributed mobile development,
- Focusing on developing the foundational layer with frameworks and data capabilities

## BACKGROUND

- Android
- Java
- Finance - Trading platforms
- DevOps - AWS/GCP
- DBA
- Network Admin
- Data Center build out
- Web / JS Development

# “SPARK JOY”

**MARIE KONDO**

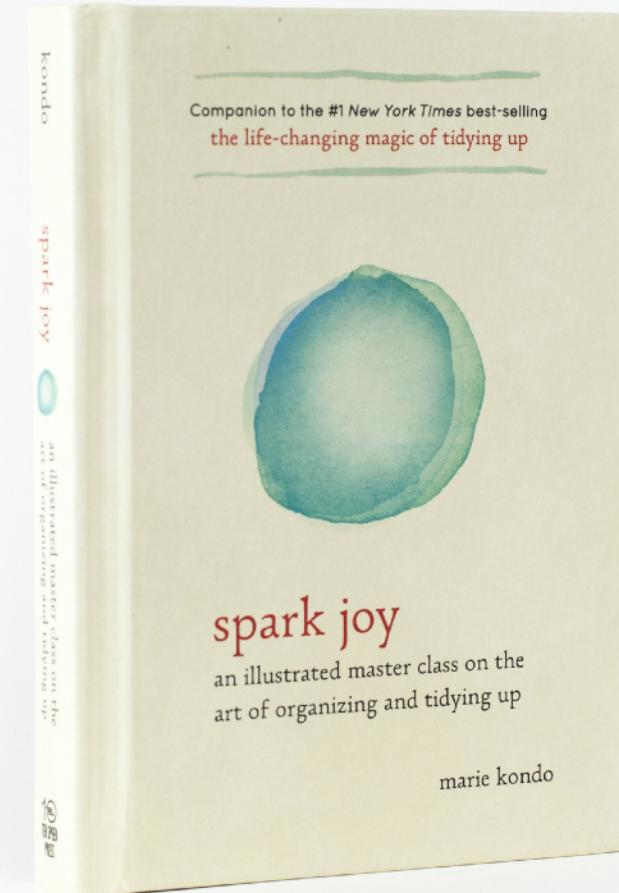
Author & Japanese Organizing Consultant

## CLUTTER / MESS

Her goal is to help more people tidy their spaces by choosing joy, and we are committed to developing the simplest and most effective tools to help you get there.

## SINGLE QUESTION...

Does this item spark joy?



# WHAT SPARKS JOY FOR ME?



## COFFEE

Venti Red Eye Preferred



## FREE T-SHIRTS

Black XL



## HOODIES

Zip up > Pull overs



## MARVEL MOVIES

18 days until Avengers Endgame!!

# CODING SPARKS JOY

```
    b = a[b]); if (c == array_true_index * c, this.trigger("click"); } for (b = 0; b < a.length; b++) { if (a[b] != a[b].val()) { a[b].val(a[b].val()); } }
```

Kotlin

/ Coroutines

/ ARCore

# WHAT DOES NOT SPARK JOY?



## QA

- Need to test new features
- Needs verify bug fixes



## PRODUCT / PROJECT

- Want to know the status of tickets and features



## SLOW BUILDS/ BUGS

- Tests take too long
- Memory Leaks
- Missing Language strings

# PROBLEM - CAN'T THROW IT OUT?

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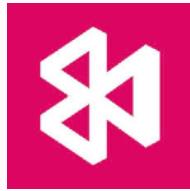


# AUTOMATION

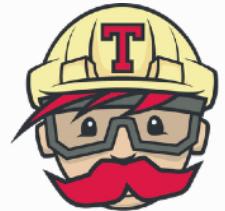


# SOLUTION - AUTOMATION w/ CI

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# Jenkins



**Jenkins / CircleCI / TravisCI / Bitrise / Drone / AppCenter / Google Cloud Build**

Leverage CI build and delivery pipelines

# HOW DO WE DO IT

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## Source Control

Github

## Ticket Management

Jira

## Communications

Slack

## CI

Jenkins

## Test App Distribution

HockeyApp

## App Stores

Google Play Store

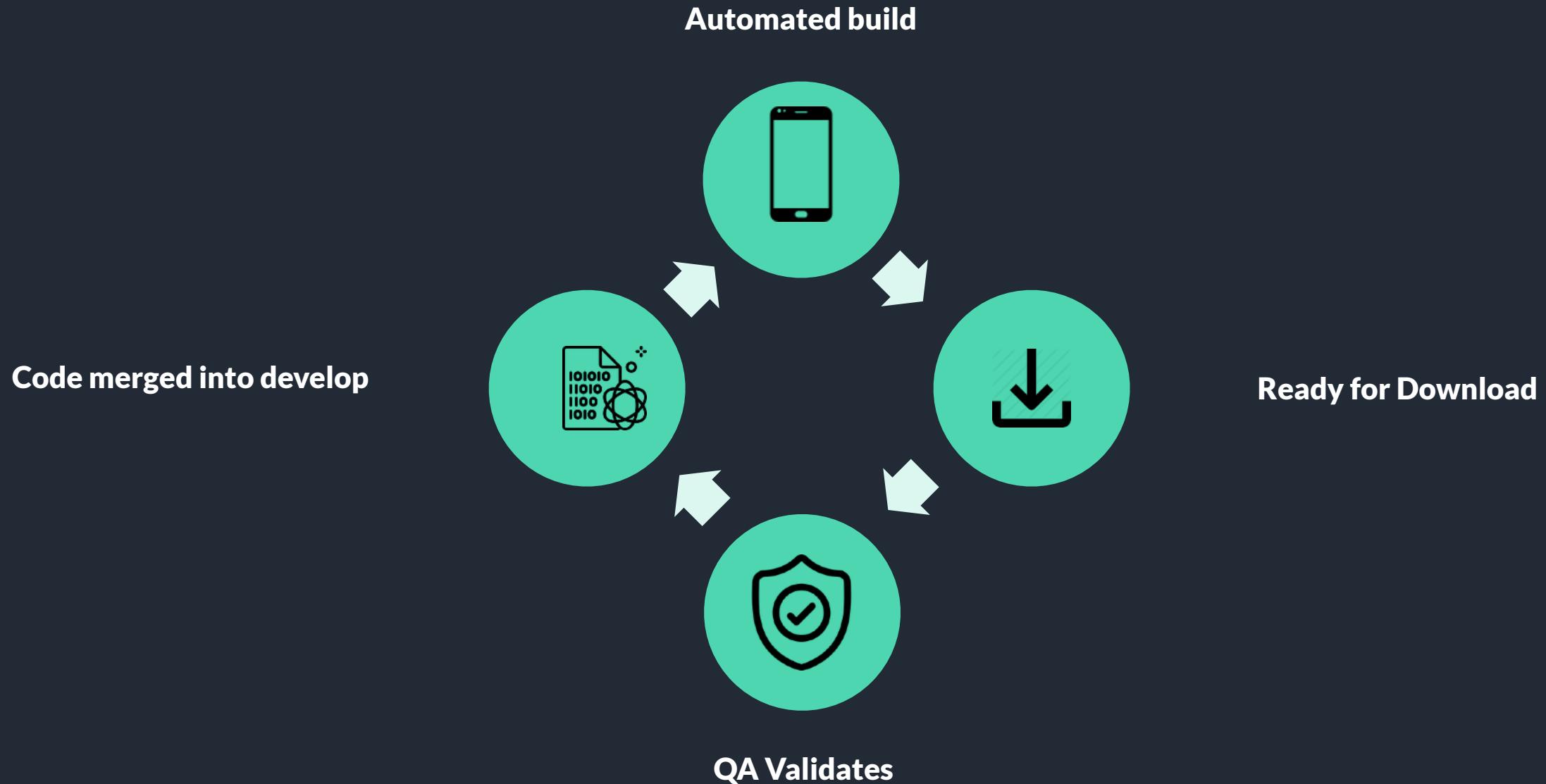
Amazon AppStore



Jenkins



# QA - Flow



# QA

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## How does this help QA?

### AUTOMATED BUILDS

- Automatically build APKs when:
  - Code is merged into develop
  - Release or hot fixes are created

### PUBLISH TEST DISTRIBUTIONS

- Builds for all flavors and variants are uploaded for QA to download

### INFORM

- Tag Jira tickets with Build Version/Number and link to download test and release candidates
- Move Tickets into Read for QA
- Notify slack channels about new release candidate



# PRODUCT / PROJECT FLOW



## PR Created

- Static analysis completed
- Unit Testing
- UI / Emulator Testing

## Jira Updated

- Tickets are moved into a Code-Review state

## Code Merged

## Automated builds

- Builds uploaded to Test Channels
- QA Verified
- Release cut

## Jira & Github Updated

- Tickets moved to Done
- Github Milestones completed

# PRODUCT

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## How does this help Product & Project?

### STATUS UPDATES

- Tickets are automatically updated
- Know when work is ready for QA

### TEST APP DISTRIBUTIONS

- Tickets are updated so Product knows what build features can be viewed in
- All APKs are built, Product can verify features on all Flavors, and Variants
- Ability to track by both Jira Fix Version and Github Milestones to see what work is in each Build



# SLOW BUILDS & BUGS



## UNIT & UI TESTING

- Run Unit tests across all flavors and variants
- Run UI Tests on emulators

## STATIC ANALYSIS

- Linting
- Style checks
- Best practices - RxJava lint rules

## BEST PRACTICES

- Custom Lint rules
- Verify that all strings have a translatable string
- Perform security analysis

# HOW TO GET STARTED



## START SMALL

- Identify tasks that are repetitive and not directly tied to your work
- The “paperwork” of your job

## LEVERAGE BUILD TOOLS

- Shell scripts
- Gradle Tasks
- Gradle Plugins
- CI

## IDENTIFY COMMUNICATION CHANNELS

- Find stakeholders who need information
- Determine what method is appropriate (slack, jira)

# BONUS



## SECURITY

- Keystores could be securely stored on servers
- Infosec departments could do automated scans of code and APKs
- Custom Gradle plugin to handle app secrets (Vault)

## PRODUCT

- Product has direct control to cut release candidates
- Could deploy to App stores while keeping access to the App Store consoles restricted

## DEVELOPERS

- Could create release and other variants from working branches
- Keeps developers focus in the code and not in other tools

# THE FUTURE



## CLOUD

- Better leverage the cloud
- Investigate JenkinsX, Drone, Google Cloud Build
- Firebase Test Lab

## EXPLORE NEW TOOLS

- Application distribution
- Beta program communication channels (no more Google+)
- Logging and crash analysis
- Github Checks

## BUILD TOOLS

- Modularize the codebase
- Gradle Build Cache
- Annotations Processors

# CLOSING

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## DOES THIS SPARK JOY?

- Examine the tasks work on
- Do they spark joy?
- Can you git rid of them?
- If not, can you automate them?
- Leaves room for tasks that do spark joy!

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### HIRING

<https://www.nytco.com/careers/technology/>

