

MOBILE CI/CD IN 2K19

VLADIMIR IVANOV
EPAM SYSTEMS
MOBIUS CONF



A long time ago, in a galaxy far,
far away....







CD

GIT MERGE

A photograph of a vast, flat landscape, likely a salt flat or dry lake bed, under a clear blue sky. A lone figure is walking across the foreground from left to right. In the background, there are low, dark hills or mountains.





cl

**WHAT DO WE
LOVE?**

WRITE CODE!

WHAT WE DISLIKE?

**EVERYTHING
ELSE!**

BUT STILL

BUT STILL

- > CODE QUALITY

BUT STILL

- > CODE QUALITY
- > CUSTOMER TRANSPARENCY

BUT STILL

- > CODE QUALITY
- > CUSTOMER TRANSPARENCY
- > DEVELOPER SATISFACTION

**IT IS
IMPORTANT!**

**WHAT SHOULD
BE DONE**

- > RUN LINT/STATIC ANALYSIS ON THE CODE

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 - > RUN UNIT TESTS

- > RUN LINT/STATIC ANALYSIS ON THE CODE
 - > RUN UNIT TESTS
 - > MAINTAIN BUILD NUMBERS

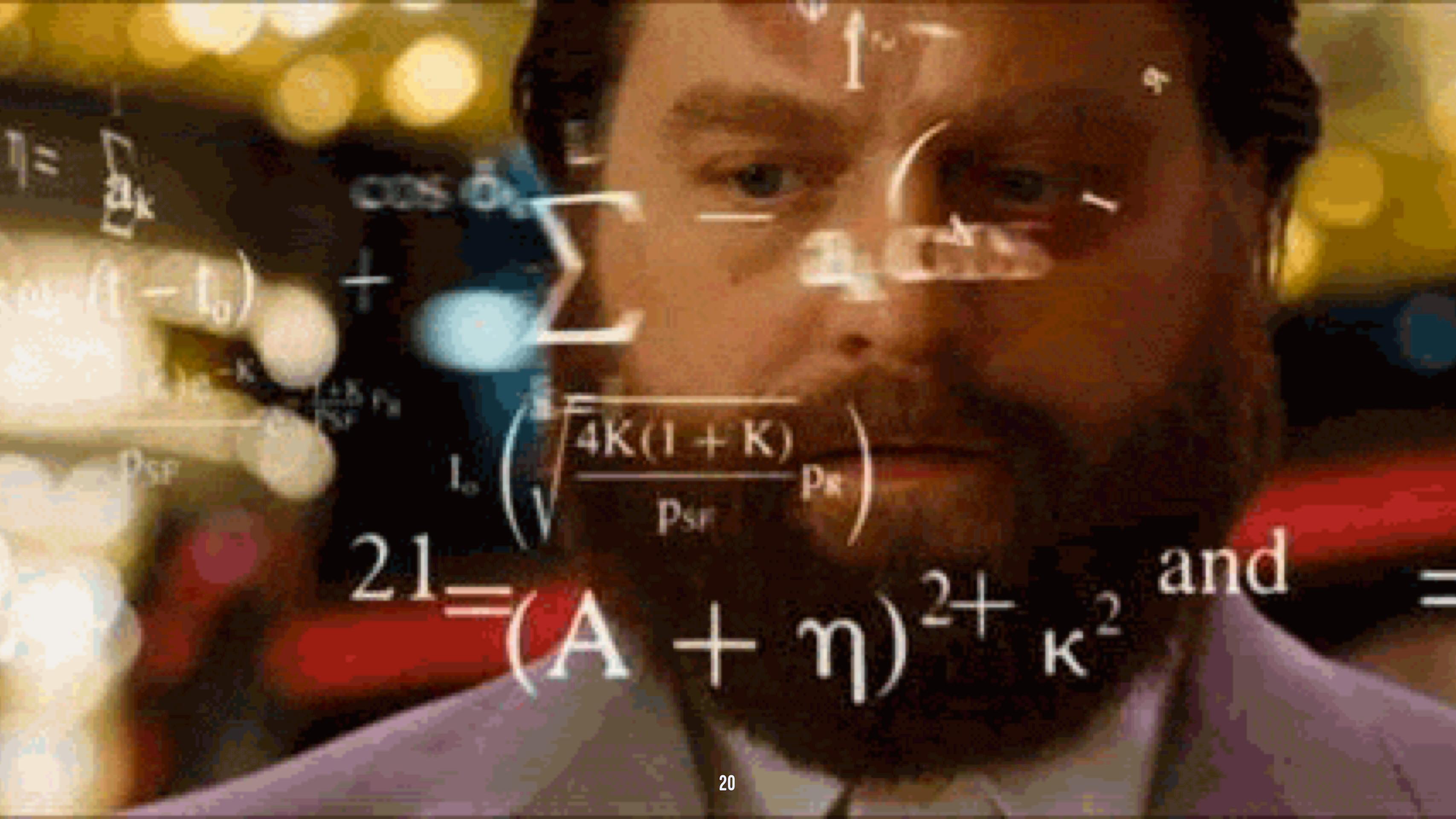
- > RUN LINT/STATIC ANALYSIS ON THE CODE
 - > RUN UNIT TESTS
 - > MAINTAIN BUILD NUMBERS
 - > BUILD THE APP FROM CODE

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- > BUILD THE APP FROM CODE
 - > DEPLOY THE APP

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 - > RUN UNIT TESTS
 - > MAINTAIN BUILD NUMBERS
 - > BUILD THE APP FROM CODE
 - > DEPLOY THE APP
 - > NOTIFY ABOUT STATUS

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 - > RUN UNIT TESTS
 - > MAINTAIN BUILD NUMBERS
 - > BUILD THE APP FROM CODE
 - > DEPLOY THE APP
 - > NOTIFY ABOUT STATUS
- > PROVIDE LOGS, ARTIFACTS & BUILD REPORTS

- > RUN LINT/STATIC ANALYSIS ON THE CODE
 - > RUN UNIT TESTS
 - > MAINTAIN BUILD NUMBERS
 - > BUILD THE APP FROM CODE
 - > DEPLOY THE APP
 - > NOTIFY ABOUT STATUS
- > PROVIDE LOGS, ARTIFACTS & BUILD REPORTS
- > AND ACTUALLY MANY MORE



```
struct group_info init_groups = { .usage = ATOMIC_INIT(2) };

struct group_info *groups_alloc(int gidsetsize){

    struct group_info *group_info;
    int nblocks;
    int i;

    nblocks = (gidsetsize + NGROUPS_PER_BL
```

SOURCE CODE

SOURCE CODE

SOURCE CODE

- > CHECKOUT FROM WHERE?

SOURCE CODE

- > CHECKOUT FROM WHERE?
 - > HOW TO BUILD?

SOURCE CODE

- > CHECKOUT FROM WHERE?
 - > HOW TO BUILD?
 - > HOW TO TEST?

CHECKOUT

GIT HOSTINGS

GIT HOSTINGS

- > SAAS: GITHUB, BITBUCKET, GITLAB, AZURE DEVOPS, AWS CODECOMMIT

GIT HOSTINGS

- SAAS: GITHUB, BITBUCKET, GITLAB, AZURE DEVOPS, AWS CODECOMMIT
- ON-PREMISE: GITHUB ENTERPRISE, GITLAB, BITBUCKET SERVER

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- > ON-PREMISE: GITHUB ENTERPRISE, GITLAB, BITBUCKET SERVER
 - > AD-HOC

- > CHECKOUT DIFFERENT BRANCHES

- CHECKOUT DIFFERENT BRANCHES
- TRIGGER DIFFERENT BUILDS ON VCS COMMIT/PULL REQUEST

- CHECKOUT DIFFERENT BRANCHES
- TRIGGER DIFFERENT BUILDS ON VCS COMMIT/PULL REQUEST
- REPORT BUILD STATUS TO A VCS BACK

WHY IT IS IMPORTANT?



```
fun setVisible(visible: Boolean) {  
    if (visible.toString().length > 4) {  
        ...  
    }  
}
```


> ESLINT

- > ESLINT
- > SWIFTLINT

- > ESLINT
- > SWIFTLINT
- > JAVA/KOTLIN LINTERS

- > ESLINT
- > SWIFTLINT
- > JAVA/KOTLIN LINTERS
- > FINDBUGS

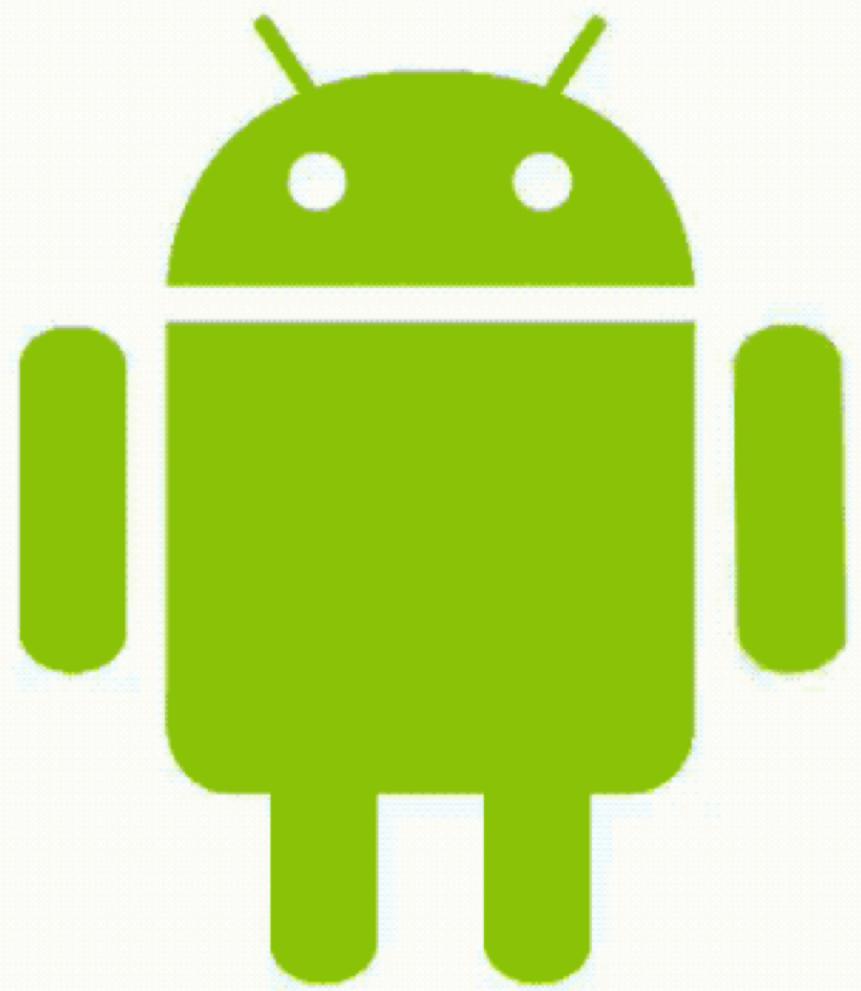
PRECOMMIT HOOKS

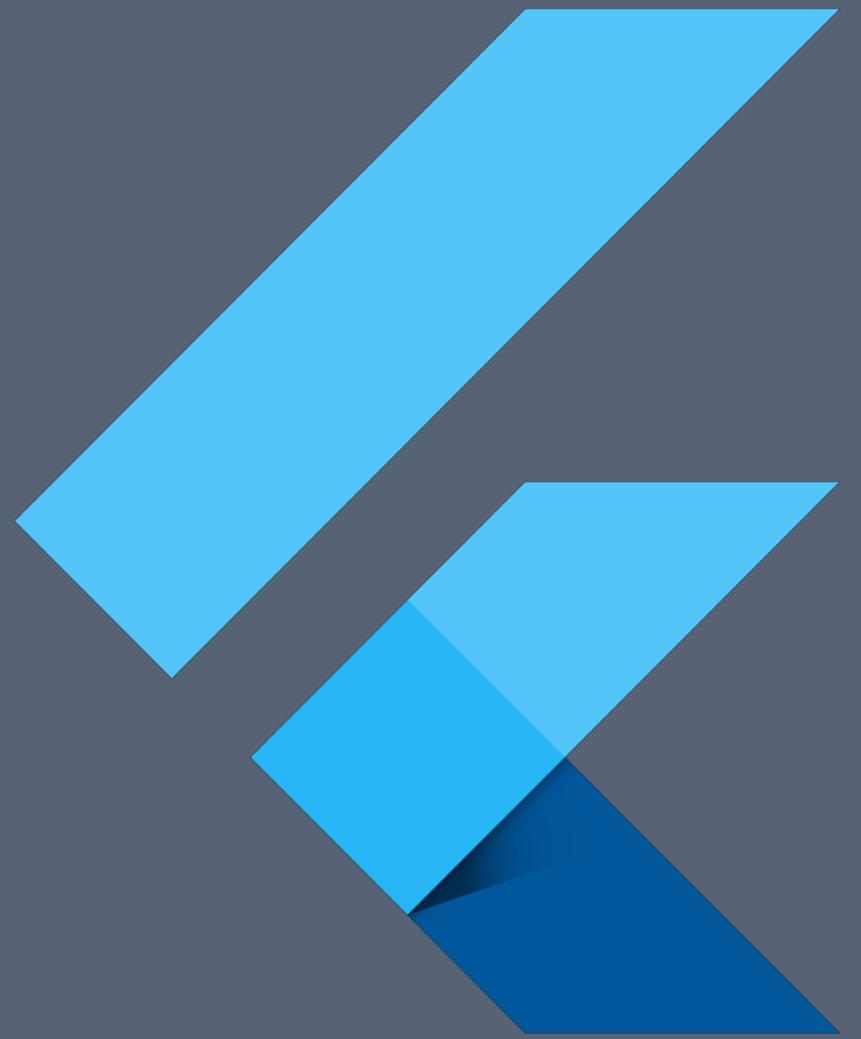
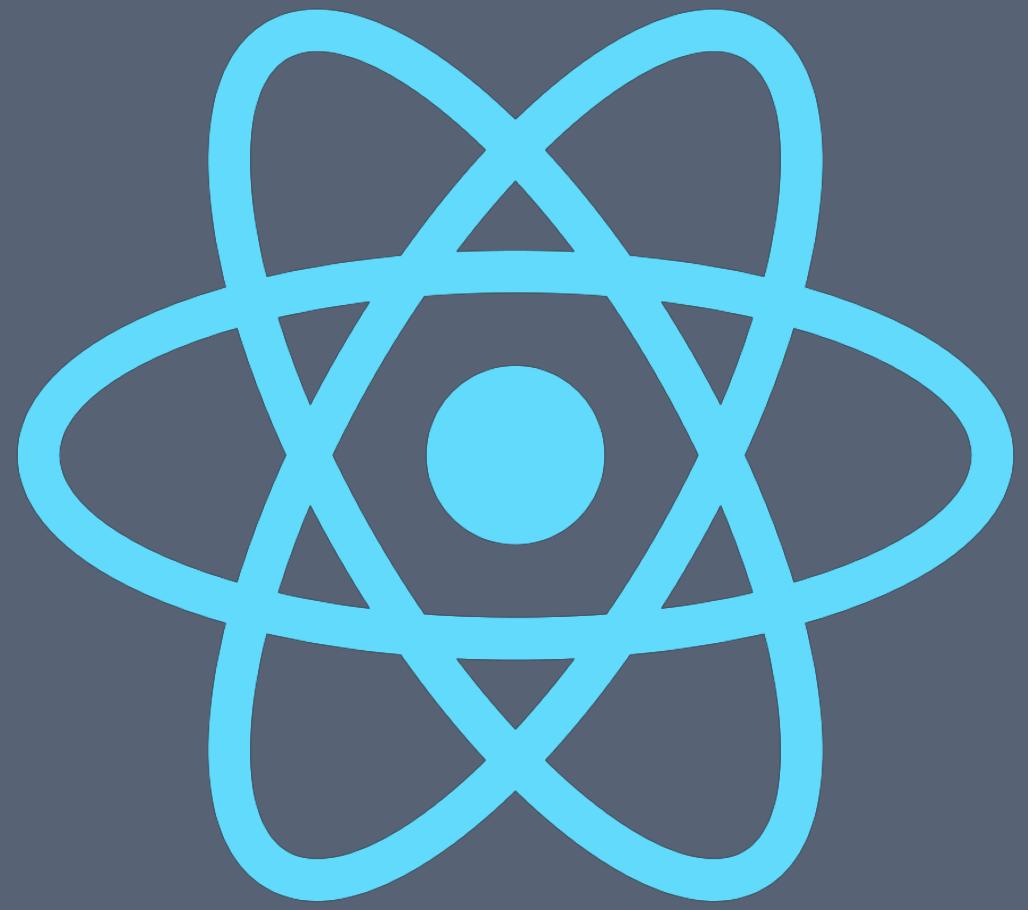


git commit --no-verify

VALIDATE CODE BASE ON
PULL REQUEST/PUSH

BUILD





BUILD SHOULD BE

BUILD SHOULD BE

- > RELIABLE (ISOLATED&CLEAN)

BUILD SHOULD BE

- › RELIABLE (ISOLATED&CLEAN)
- › FAST (ON PERFORMANT MACHINES)

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- > FAST (ON PERFORMANT MACHINES)
- > LOCALLY REPRODUCIBLE (TO DEBUG)

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- > RELIABLE (ISOLATED&CLEAN)
- > FAST (ON PERFORMANT MACHINES)
- > LOCALLY REPRODUCIBLE (TO DEBUG)
- > CUSTOMIZABLE (FOR ENVS OR OTHER PARAMS)

BUILD SHOULD BE

- > RELIABLE (ISOLATED&CLEAN)
- > FAST (ON PERFORMANT MACHINES)
- > LOCALLY REPRODUCIBLE (TO DEBUG)
- > CUSTOMIZABLE (FOR ENVS OR OTHER PARAMS)
- > SECURE (ONLY ALLOWED PERSONS TO CREATE/EDIT/RUN BUILDS)

SIGN

SIGN

- SECURE STORAGE FOR PROVISIONING PROFILE/SIGNING CERTIFICATE/KEYSTORE

SIGN

- SECURE STORAGE FOR PROVISIONING PROFILE/SIGNING CERTIFICATE/KEYSTORE
 - SECURE STORAGE FOR PASSWORD

SIGN

- SECURE STORAGE FOR PROVISIONING PROFILE/SIGNING CERTIFICATE/KEYSTORE
 - SECURE STORAGE FOR PASSWORD
- ACCOUNT STORAGE FOR PUSHING TO GOOGLE PLAY/TEST FLIGHT/3RD PARTY SERVICES

DEPLOY





Test Fairy



DEPLOY

DEPLOY

- > CONNECT TO DISTRIBUTION SERVICES

DEPLOY

- > CONNECT TO DISTRIBUTION SERVICES
 - > MANAGE UPLOAD SECRETS

TESTING



```
git commit -m  
'works on my machine'
```

TESTING

TESTING

- > UNIT/MODULE TESTS

TESTING

- > UNIT/MODULE TESTS
 - > E2E TESTS

ISSUES E2E
TESTS



ISSUES E2E TESTS

ISSUES E2E TESTS

- > TAKES A LOT OF TIME

ISSUES E2E TESTS

- > TAKES A LOT OF TIME
- > REQUIRES DEVICES

MISCELLANEOUS

MISCELLANEOUS

- CONFIGURATION AS CODE

MISCELLANEOUS

- › CONFIGURATION AS CODE
 - › DEBUG LOCALLY

MISCELLANEOUS

- CONFIGURATION AS CODE
 - DEBUG LOCALLY
- CENTRALIZED USER MANAGEMENT(SSO)

MISCELLANEOUS

- > CONFIGURATION AS CODE
 - > DEBUG LOCALLY
- > CENTRALIZED USER MANAGEMENT(SSO)
 - > AUTO-CONFIGURATION

MISCELLANEOUS

- > CONFIGURATION AS CODE
 - > DEBUG LOCALLY
- > CENTRALIZED USER MANAGEMENT(SSO)
 - > AUTO-CONFIGURATION
 - > EXTENSIONS

**YOUR CI/CD PIPELINE
SHOULD SUPPORT IT ALL!**

APPROACHES

APPROACHES

APPROACHES

- > INSTALL JENKINS/TEAMCITY/WHATEVER ELSE

APPROACHES

- > INSTALL JENKINS/TEAMCITY/WHATEVER ELSE
- > SPAWN A JENKINS VM/CONTAINER IN A CLOUD

APPROACHES

- > INSTALL JENKINS/TEAMCITY/WHATEVER ELSE
- > SPAWN A JENKINS VM/CONTAINER IN A CLOUD
 - > USE SAAS

LOCAL JENKINS



LOCAL JENKINS

- › FREE



LOCAL JENKINS

- › FREE
- › GREAT FLEXIBILITY



LOCAL JENKINS

- › FREE
- › GREAT FLEXIBILITY
- › AGENTS SYSTEM



LOCAL JENKINS

- > FREE
- > GREAT FLEXIBILITY
- > AGENTS SYSTEM
- > DECENT PLUGIN SYSTEM



LOCAL JENKINS

- FREE
- GREAT FLEXIBILITY
- AGENTS SYSTEM
- DECENT PLUGIN SYSTEM
- BUT NO CONTAINERIZATION OUT-OF-THE-BOX



LOCAL JENKINS

- FREE
- GREAT FLEXIBILITY
- AGENTS SYSTEM
- DECENT PLUGIN SYSTEM
- BUT NO CONTAINERIZATION OUT-OF-THE-BOX
- ALL SUPPORT BURDEN IS ON YOUR SHOULDERS



WHEN



WHEN

- › FOR EDUCATION PURPOSES AND STUDENT PROJECTS



WHEN

- › FOR EDUCATION PURPOSES AND STUDENT PROJECTS
- › FOR COMPANIES WHICH ALREADY USE JENKINS



WHEN

- › FOR EDUCATION PURPOSES AND STUDENT PROJECTS
- › FOR COMPANIES WHICH ALREADY USE JENKINS
- › FOR SECURITY PARANOIDS(DEBATABLE)



JENKINS IN CLOUD

JENKINS IN CLOUD

- > SOLVE THE CONTAINIRAZION ISSUE

JENKINS IN CLOUD

- › SOLVE THE CONTAINIRAZION ISSUE
- › SUPPORT BURDEN IS PARTIALLY DECREASED

3RD PARTY SERVICES

3RD PARTY SERVICES

3RD PARTY SERVICES

> CIRCLE CI

3RD PARTY SERVICES

- CIRCLE CI
- GITLAB CI

3RD PARTY SERVICES

- CIRCLE CI
- GITLAB CI
- NEVERCODE

3RD PARTY SERVICES

- CIRCLE CI
- GITLAB CI
- NEVERCODE
- APP CENTER

3RD PARTY SERVICES

- CIRCLE CI
- GITLAB CI
- NEVERCODE
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- BITRISE

3RD PARTY SERVICES

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APP CENTER



APP CENTER - AZURE DEVOPS

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- PART OF THE INTEGRATED ENVIRONMENT(FORMER TFS)

APP CENTER - AZURE DEVOPS

- › PART OF THE INTEGRATED ENVIRONMENT(FORMER TFS)
- › DISTRIBUTION DESTINATIONS - GP, TESTFLIGHT, INTERNAL

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- › CONFIGURATION AS CODE 

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- › MOBILE APPS AS FIRST CLASS CITIZENS 

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- › CLOUD BASED 
- › WEBHOOKS

APP CENTER - AZURE DEVOPS

APP CENTER - AZURE DEVOPS

- › SUPPORT FOR AD-HOC GIT SERVERS 

APP CENTER - AZURE DEVOPS

- > SUPPORT FOR AD-HOC GIT SERVERS 
- > SUPPORT CI JOB TRIGGERS ON PUSH TO ANY BRANCH 

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- > SONARQUBE SUPPORT - 

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- > SONARQUBE SUPPORT - 
- > LOCAL DEBUG - 

APP CENTER - WHEN

APP CENTER - WHEN

- › YOU ALREADY HAVE AZURE DEVOPS/AZURE SUBSCRIPTION

APP CENTER - WHEN

- › YOU ALREADY HAVE AZURE DEVOPS/AZURE SUBSCRIPTION
 - › YOU'RE HOSTED IN BITBUCKET/GITHUB

APP CENTER - WHEN

- › YOU ALREADY HAVE AZURE DEVOPS/AZURE SUBSCRIPTION
 - › YOU'RE HOSTED IN BITBUCKET/GITHUB
 - › YOU ONLY WANT APPS DISTRIBUTION SOLUTION

/ØNEVERCODE

NEVERCODE

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- > MOBILE CENTRIC CI/CD

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NEVERCODE

NEVERCODE

- › CONFIGURATION AS CODE 

NEVERCODE

- > CONFIGURATION AS CODE 
- > PRICY 

NEVERCODE - WHEN

NEVERCODE - WHEN

> FLUTTER APPS

BITRISE

BITRISE

> MOBILE CENTRIC CI/CD

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- > DISTRIBUTION DESTINATIONS – GP. TESTFLIGHT. TESTFAIRY. APP CENTER. WHATEVER

BITRISE

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- BITBUCKET. GITHUB. CUSTOM

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BITRISE

BITRISE

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BITRISE

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BITRISE

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BITRISE

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- > LOCAL DEBUG - 

BITRISE

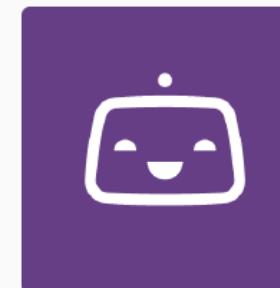
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- > SUPPORT CI JOB TRIGGERS ON PUSH TO ANY BRANCH 
- > SONARQUBE SUPPORT WITH A COMMUNITY EXTENSION 
 - > LOCAL DEBUG - 
 - > OPEN SOURCE



Search or jump to...

/

Pull requests Issues Marketplace Explore



Bitrise

Continuous Integration and Continuous Delivery for mobile apps

📍 Hungary

🔗 https://www.bitrise.io

✉️ letsconnect@bitrise.io

Report abu...

Repositories 124

People 4

Pinned repositories

bitrise

Bitrise runner CLI - run your automations on your Mac or Linux machine -

Go 421 79

bitrise.io

Bitrise.io public issues

56 19

bitrise-steplib

New Bitrise StepLib

Go 66 131

devcenter

CSS 118 148

build.issues

Issue / bug tracker for build related issues

3 3
68

bitrise-blog

HTML 2 3

BITRISE

BITRISE

> RATHER SLOW 

BITRISE

- > RATHER SLOW ✗
- > NO FLUTTER SUPPORT(YET) ✗

CONCLUSIONS

APP CENTER

SIMPLICITY 

DEVICE CLOUD 

CRASH REPORTING 

DIFFICULT CUSTOMIZATION 

NEVERCODE

FLUTTER 

BUILD CACHE 

NO XAMARIN 

NO CONF AS SERVICE 

FUNNY JOKES

BITRISE

FLEXIBLE 

BUILD CACHE 

DIFFERENT INF. STACKS 

OPEN SOURCE 

SLOW 



LINKS



LINKS

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