

# Automated Testing for Web Applications

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# Me

- Student @UPB – Master Degree
- Co-Founder @thesunnytrail.com
- Passion for clean code, testing & automation
- @GSoC – Apache Zookeeper
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# Outline

- What is testing
  - Types of testing
  - Why automated testing
  - Low - hanging fruits
  - Demo
  - Advices
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- ... share advices from practice
  - ... things you can do starting from now

# What is testing?

- "Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test." [wikipedia](#)
- Does the product meet the requirements?
- Did I broke something? #agility

# Types of testing (1)

- Internal visibility: black box & white box
- Unit testing
- Integration testing
- Functional testing
- System testing
- End-to-end testing

# Types of testing (2)

- Sanity / Smoke testing
- Regression testing
- Acceptance testing
- Load & stress testing
- Usability testing

# Types of testing (3)

- Install / Uninstall (deployment) testing
- Recovery testing
- Security testing
- Compatibility testing
  
- Alpha testing
- Beta testing

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# Why automated testing?

- Saves Time and Money
- Improves Accuracy
- Does What Manual Testing Cannot (scale)
- Improves Team Morale

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# Low - hanging fruits

- Low Effort with Good Results (... and you don't have a QA team)
- Unit, Integration & Functional Testing
- Setup a Continuous Integration server

# 1. Unit testing

- For components with:
  - No external dependencies
  - Easy to mock dependencies
- Keep them fast & run them often

## 2. Integration & functional testing

- Orchestrate dependencies execution
- Automated deployment solves the problem for complicated systems
- Keep single tests fast enough

# Demo

- Typical Application: database, interface, email
- Demo: MongoDB + tornado + SMTP
- Sources:
  - <https://github.com/andreisavu/automatic-testing-demo>
- What's interesting?
  - test orchestration, in-memory smtp

# What about Sunnytrail?

- Helping startups to track revenue metrics
- Complete rewrite / Testable
- Componets: MongoDB, Python, Tornado, Beanstalkd (queue), API & Dashboard, Background Processing, CLI Tools, SMTP

# Final Advices

- think about testing from the beginning
- test early, test often & automate
- not everything should be tested
- make your life easier

# Thanks! Questions?

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