DevOps Case
PE Assignment

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DE HOGESCHOOL
MET HET NETWERK

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Goals

- Build a (part of a) simple product
  - Apply Design Patterns
  - Apply SOLID Principles
- Learn about DevOps tooling from a Dev point of view:
  - Automate everything
  - Create CI/CD pipelines
  - Unit Test and Coverage Reports
  - Measure your app
  - Remove friction between devs (and ops)
  - Exercise best practices

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The project: choose your own

- Build something new
- Or use something old
- Java/C#/JavaScript are all permitted
- Ask permission first about your case

The tools

- Azure DevOps (formerly known as VSTS)
  - Free for teams up to 5 devs
  - Unlimited private repos
  - Agile (Scrum, Kanban) workflow tools
  - Pipelines
  - Any language, any platform

Learn about Azure DevOps

- Instructions on Blackboard

Create accounts

- Teams of (up to) 4
- Use your PXL Account
  - This is a Microsoft account
- Send a mail to: kris.hermans@pxl.be
  - Team members
  - Language/platform of choice
  - Project Case you will use
  - URL of your Azure DevOps Project

DevOps requirements

- Develop in an agile way
  - Build Unit Tests
- Create a build pipeline
  - Build the app
  - Run all unit tests
  - Create a coverage report

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DevOps requirements

- Create a release pipeline and automate deployment (if possible)
  - Free Azure Credits
- Measure your app
  - Crash reporting
  - Other Telemetry
- Think about a release strategy: document this

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How **NOT** to do it

- Week 1 – 7: procrastinate
- Week 8 – 10: build something rapidly
- Week 11: deploy
- Week 12: create a pipeline
- Week 13 - 14: fix bugs, stay up all night
        give presentation

How to do it right

- Week 1: learn about Azure DevOps and create a Hello World app
- Week 2 – 5: create build pipelines and automate test runs
- Week 6 – 11: implement some user stories and explore possibilities of Azure DevOps, refactor as you gain insights in SOLID and DP
- Week 12 - 13: present your findings
- GOAL IS NOT THE FINISHED APP!

Deliverables

- Presentation (week 12 and/or 13)
  - Short demo of the app and your DevOps workflow
  - Evaluation of Azure Devops
    - Which features did you use?
    - What about the promise "any language / any platform"?
    - Pro/Cons?
    - How did this influence your dev activities?
  - Design Patterns
    - Use at least two standard design patterns from the book (No Singleton)
    - Explain how you implemented them
  - SOLID
    - How did you apply this to your project?
- Personal reflection
  - 1 page per person
- Upload in EPOS:
  - one (elaborate) presentation → needed for evaluation!!
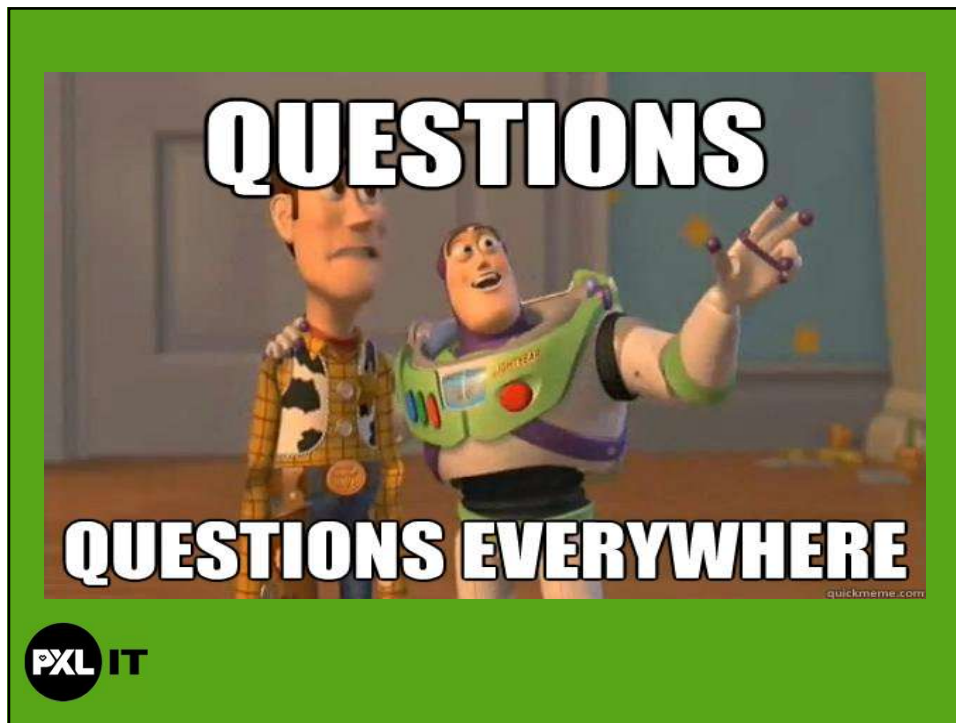 - one reflection per person in seperate documents

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Evaluation

- Case → 30%
  - What did you learn from these tools and processes?
  - I'm not interested in a fully polished app!
  - You don't have to finish all user stories!
- In case of failure → second examination
  - You will have to answer questions about DevOps, tools used in the context of your project.
    - How did you use Azure DevOps?
    - Describe your build pipeline
    - How did/could you measure crashes?
    - Etc.

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