Block Chain, Bitcoin & Security

…But truly Bitcoin, Proof of Work and Smart Contracts Development

EPITA - 2021

Part 1: course organisation

EPITA - 2021

About me

Thanh-Quy Nguyen

- Entrepreneur, freelance
- Double Master’s degree in fundamental physics
- École 42
- JavaScript developer
- Blockchain enthusiast (trading, smart contract development)

About me

Thanh-Quy Nguyen

- Not a security expert
- Not a DevOps

About me

Thanh-Quy Nguyen

- LinkedIn: https://www.linkedin.com/in/thanhquy/
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How about you?

A few questions

- What’s your name?
- What’s your background? (developer, DevOps, other)
- What do you want to do later?
- What experience do you have with blockchain? (development, investments/trading)
- What do you expect from this course?

Objectives of this course

15 hours class - ~6 hours homework

- Understand the blockchain technology (3 hours)
- Get a practical understanding of smart contract developments on Ethereum (10 hours)
- Get glimpse of the state-of-the-art in blockchain technology (2 hours on your presentations)
- Turn you into blockchain enthusiasts

What won’t be covered

- Development using Vyper
- Development using Remix
- Security audit process
- Blockchain development from scratch
- Trading

Grading

What to focus on

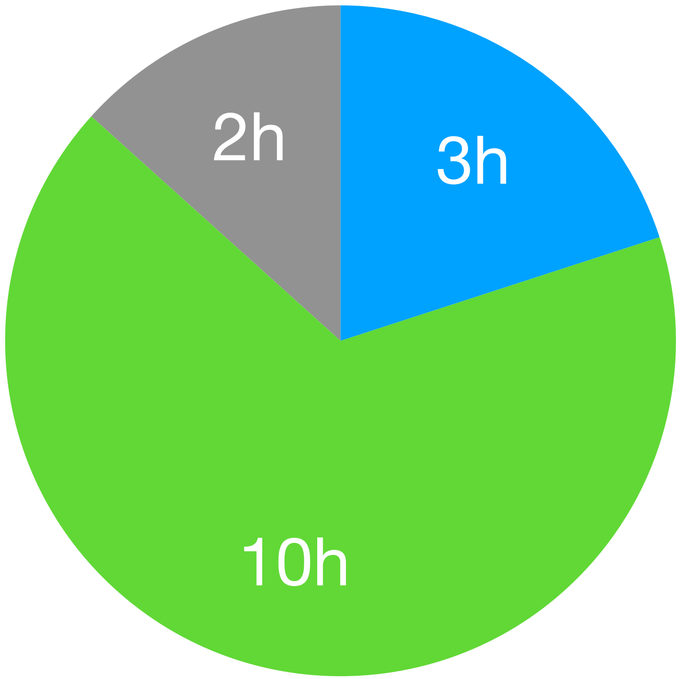
- Quiz: 20% (2 hours of homework)

- 1 (or 2) of these group project (80%):
  - Code project: 80% (~ 4 hours of homework), 3 students per group
  - Group Research and Presentation: 80% (~ 4 hours of homework), 2 students per group
- If you do the 2 group projects: the group project grade will equal BestGrade + 1/2 * OtherGrade
  - Example: if you get 15 and 12, the group project grade should equal 15 + 6 = 21 which will be capped at 20

Grading

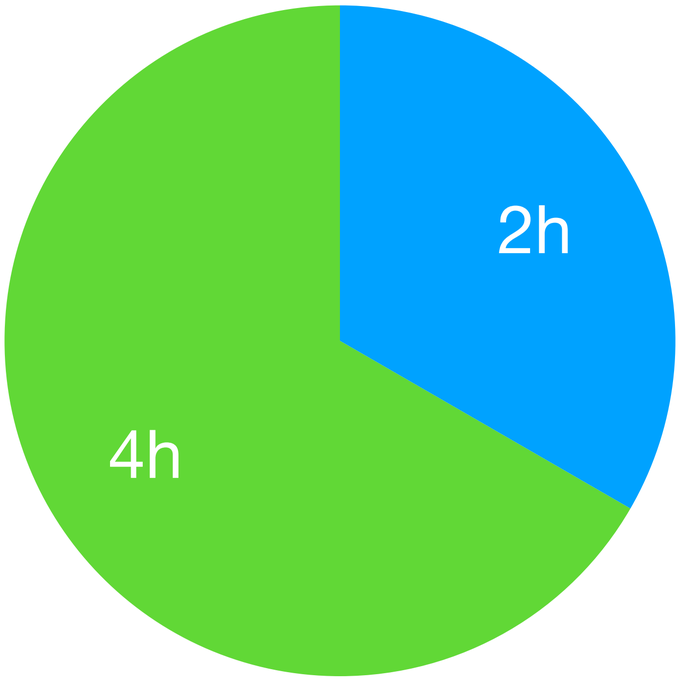
Sum up

Classes



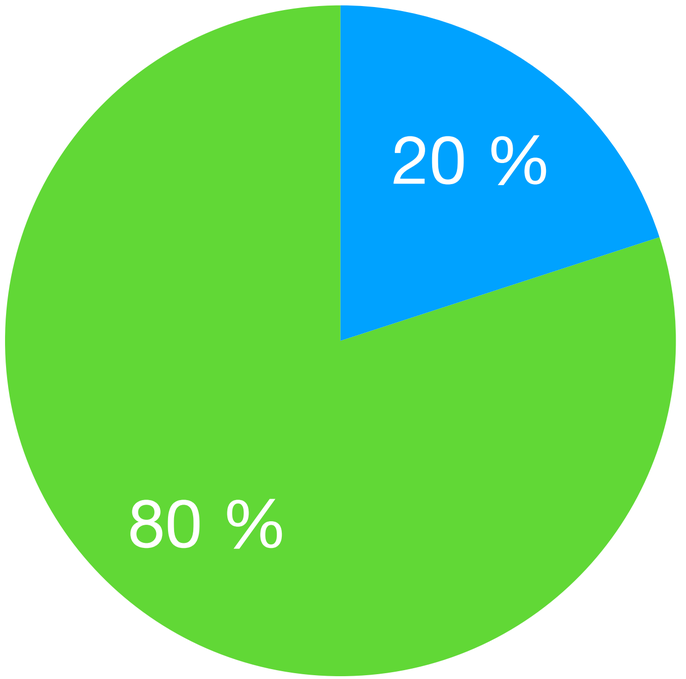
- Blockchain technology
- Smart contract coding
- Presentations

Homework



- Blockchain technology
- Group Project

Grading



- Blockchain technology
- Smart contract coding

Grading

Quiz

- Date: 03/05/2022
- Duration: 30 min
- Topics: Blockchain, Bitcoin, Ethereum
- Goal: not to be hard, just to give solid foundations for the following classes
- Ratio on the total grade: 20%

Grading: Project 1

Code project

- Due date: 02/06/2022, 23h42
- Topic: Develop a mini-Twitter on Ethereum
- Goal: to be able to develop an entire (smart contract) project on Ethereum
- Group size: 3 students (mixed profiles recommended for software development)
- Ratio on the total grade: 80%
- Grading: on the number of features and tests achieved + bonus points on the front-end
- Notes: you can start whenever you want if you want a head start - you can work with other groups

Grading: Project 2

Research and Oral Presentation + Peer Review

- 3 parts: 3 page Report + Presentation
- Goal: to (superficially) discover the state of the art; to learn how to synthesise complex topics; to learn from others' presentations
- Topic: of you choosing among a list
- Group size: 2 students
- Ratio on the total grade: 80%

Grading: Project 2

Report

- Report due date: 17/05/2022
- Presentation date: 19/05/2022
- Grading: 10 points on the report, 10 points on the presentation

Grading: Project 2

Oral Presentation

- Presentation date: 19/05/2022
- Duration: 20 min Presentation + up to 10 min of questions
- Note: synthesising is important
- Notes: camera and slides are optional, but think about what would be best for your audience