Developing Qt Desktop Applications in Python

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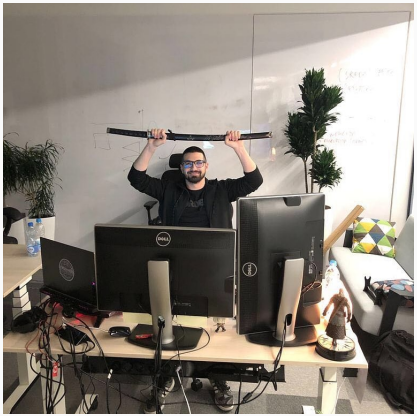
Introduction

About Me

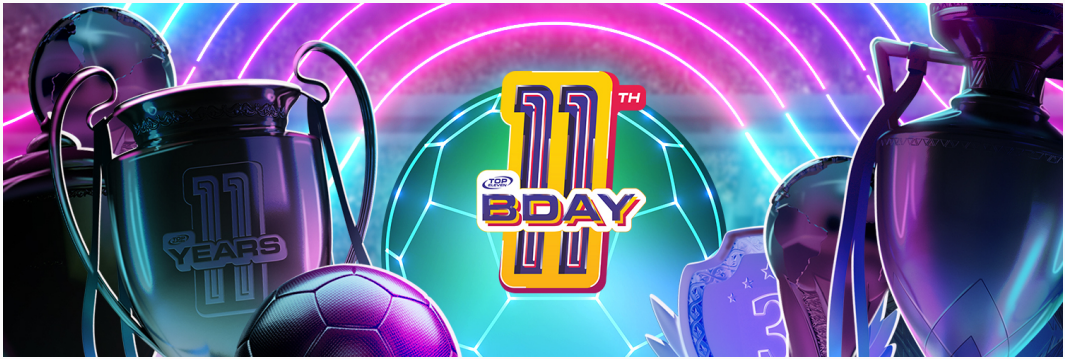
- Teaching assistant at Faculty of Mathematics
- AI Research Scientist at Nordeus
- I like:
  - Artificial Intelligence
  - Machine Learning
  - Education and Learning
  - GNU/Linux and open source
  - Python
  - Epic and sciency fiction
  - Video games!
- My veb webpage



Nordeus

- Founded over 11 years ago , now with 170+ employee from more than 20 countries
- Published games:
  - Top Eleven:
    - over 230 million of registered users
    - Jose Mourinho is the face of TE
    - 11 years of being one of the most popular mobile sports games
  - Golden Boot (over 65 million players played so far)
  - Heroic (Unite talks: 1, 2, 3, 4, 5)
- ML/AI team:
  - Researches and applies AI algorithms for the needs of our games
- Visit our ML/AI blog!
- We are hiring, check out open positions here!

Nordeus



Desktop Apps

Desktop Apps

- Not easy to actually **define** :)
- But let's say these are *classical* programs that we run on our PCs and Macs
- We mostly interact through them via mouse and keyboard
- Native Desktop apps are Desktop apps created for the platform (Windows for example) in adequate technology (DotNet)
- Native apps often look very similar (due to sharing internal tech) - for example, same button style and animations
- Examples: Adobe Photoshop, Unity, GIMP, Dolphin, KDenLive...

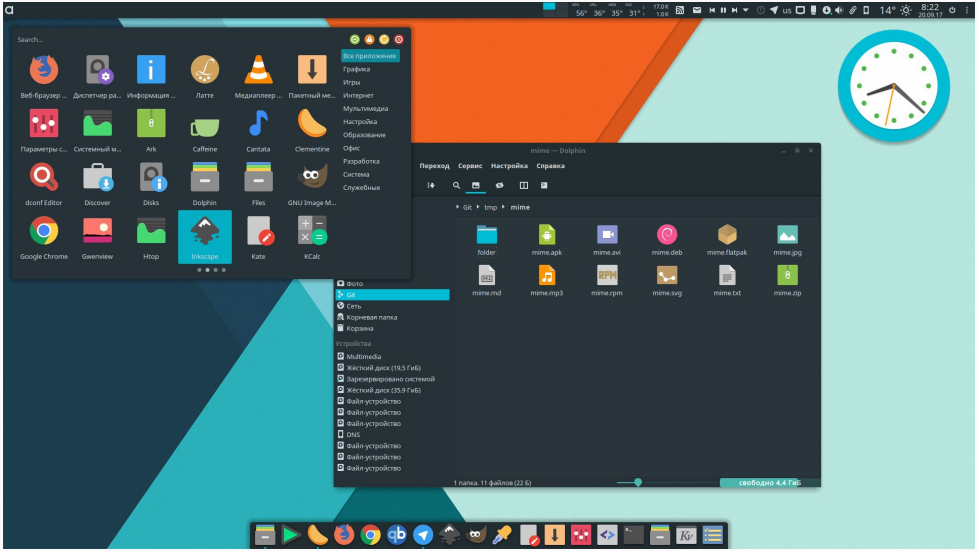
Web based Desktop Apps

- Due to rapid growth of Web technology, it's also possible to create Desktop apps
- Probably most popular framework is Electron
- It allows us to bundle Node based apps into packages that resemble Desktop apps
- Atom, Slack, Twitch and VSCode are great examples

Qt

- C++ Framework for creating programs that support multiple platforms
- Initial releases was way back in 1995
- Current stable version is `6.0.3`
- One of the larger available frameworks for C++
- KDE organization uses Qt for lots of their projects (KDE Plasma, Konsole, Kate, KDevelop, KDenLive, Dolphin...)

KDE Plasma


Search...
Все приложения
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Служебные
Веб-браузер ...
Диспетчер ра...
Информация ...
Литте
Медиаплеер ...
Пакетный ме...
Параметры с...
Системный м...
Ark
Caffeine
Cantata
Clementine
dconf Editor
Discover
Disks
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Gwenview
Htop
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Git
Сеть
Корневая папка
Корзина
Устройства
Multimedia
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Зарезервировано системой
Жёсткий диск (35,9 ГиБ)
Файл-устройство
Файл-устройство
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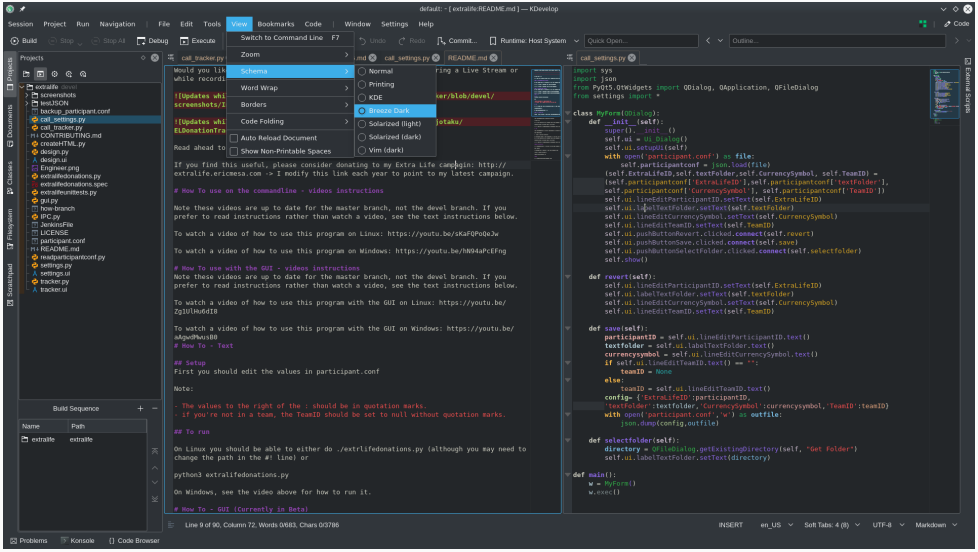
1 папка, 11 файлов (22 Б)
свободно 4,4 ГиБ

KDevelop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Session Project Run Navigation File Edit Tools View Bookmarks Code Window Settings Help
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Code Folding
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KDE
Breeze Dark
Solarized (light)
Solarized (dark)
Vim (dark)
Projects
extralife
screenshots
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backup_participant.conf
call_settings.py
call_tracker.py
CONTRIBUTING.md
createHTML.py
design.py
design.ui
Engineer.png
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gui.py
how-branch
IPC.py
Jenkinsfile
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README.md
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settings.py
settings.ui
tracker.py
tracker.ui
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Path
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Problems
Konsole
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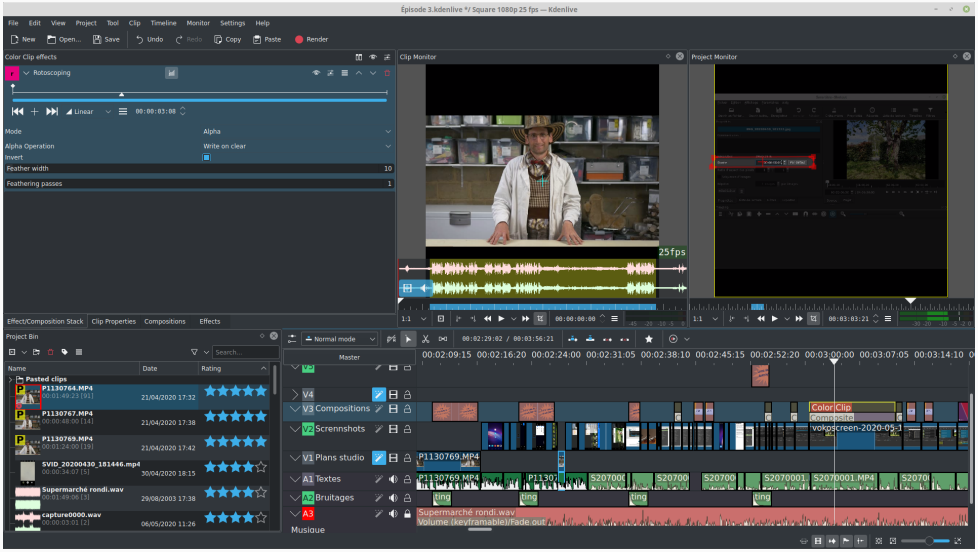
KDenLive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Rotoscoping
Linear 00:00:03:08
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Effect/Composition Stack Clip Properties Compositions Effects
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Pasted clips
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P1130767.MP4 00:00:48:00 [14] 21/04/2020 17:38
P1130769.MP4 00:01:24:00 [19] 21/04/2020 17:42
SVID_20200430_181446.mp4 00:00:34:07 [3] 30/04/2020 18:15
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V4
V3 Compositions
V2 Screnshots
V1 Plans studio
A1 Textes
A2 Bruitages
A3
Musique
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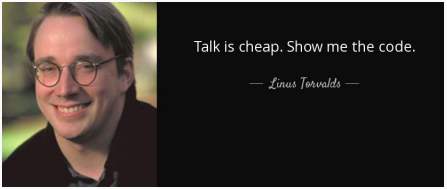
Qt and Python

- There are extension packages that allow you to use Qt from inside Python
- `PyQt5` is one of the most popular ones
- This is one of our goals for today!

Deploying Python Qt based applications

- How do we **build** an app if we use Python?
- fman is a good solution!
- It was originally made for `fman` file browser (developed in Python nd Qt)
- You can find the tutorial here

Plan for today (live coding)



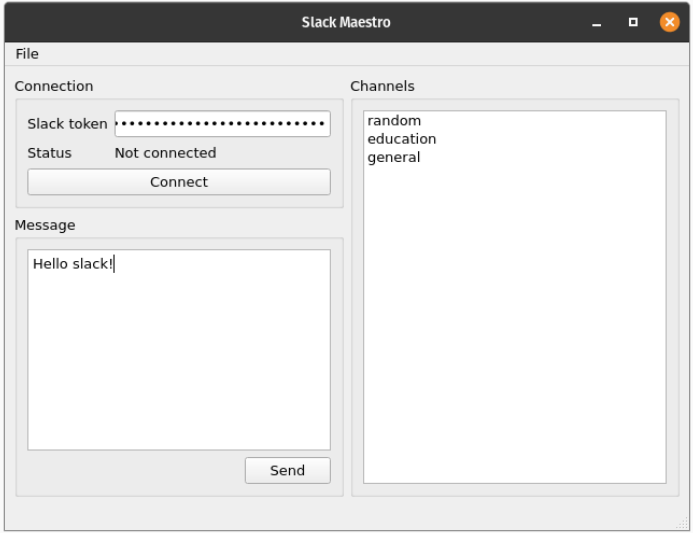
Example 01

- Slack bot frontend
- Demonstrates how we build UI
- Demonstrates signals and slots

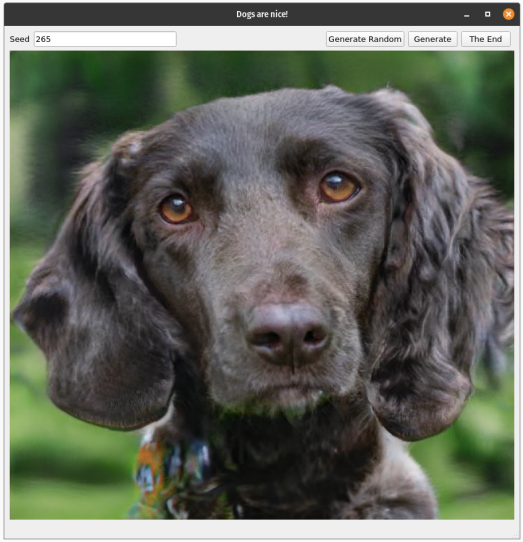
Example 02

- Style GAN frontend (we shall generate dog images!)
- Demonstrates `QThread`
- Demonstrates signals and slots

Example 01


Slack Maestro
File
Connection
Slack token
Status
Not connected
Connect
Message
Hello slack!
Send
Channels
random
education
general

Example 02



Where do I find the code and slides?

- You can find it here
- And here: `https://github.com/termNinja/pytalk2021-pyqt-desktop`

Thanks for your attention!

Questions