remote* pair programming

How to not use teamviewer

(Or, how to use ngrok, screen/tmux, vim/emacs/nano to streamline pairing with your remote colleagues)

(Lighting talk edition)

* some practices also apply for local pairing
Agenda

- Introduction - what is remote pair programming?
- Screen sharing - for and against
- Command line pairing - for and against
- CLI Pairing - tools
  - Ngrok
  - Tmux
  - VIM
- Demo
- Resources
- Conclusion
- Questions
PAIR PROGRAMMING
U MISSED A SEMICOLON, BRAH
Introduction to Pair Programming

What are the:
● Benefits
● Challenges
● Best practices
Introduction to Pair Programming

Benefits

★ Same benefits as in-person pair programming:
  ○ Higher quality code
  ○ Fewer defects
  ○ Focus
  ○ Intensity
  ○ Faster problem solving
  ○ Knowledge transfer
  ○ Code review

+ Lessen silo effect (developer isolation)
+ It’s easy
Introduction

Challenges

★ Same challenges as in-person pair programming
  ○ good communication needed / shyness
  ○ (seemingly) takes more time
  ○ mentally tiring
  ○ personality / some people are jerks
+ no physical whiteboards / notebook
+ different time-zones
+ meetings are harder to organise
+ dependant on technology
Introduction

Best practices

★ Pairing etiquette
★ Generous support / tooling
★ Have fun with it

https://www.youtube.com/watch?v=f9ALSPIPQhg
Not sure if I love pair programming

or

I'm just lonely
Screen sharing vs Command line pairing
Screen sharing - for and against

Pros

+ Ability to share control to GUI applications
+ Cross platform, binary installer
+ Really good for debugging visual stuff

Cons

- Hard to use w/ unstable network
- Requires one to be fairly familiar with other person’s OS / IDE
Command line pairing - for and against

Pros

+ Easier to work under slow network
+ Common CLI tools across all OSes
+ Pair on a remote server
+ Less distractions than screen sharing

Cons

- Need to know at least one CLI editor, and some shell commands
- Nearly impossible to do well in a “native microsoft windows shell”
The process - step by step

A typical remote pairing connection flow

1. ngrok & ssh
2. tmux / screen
3. vim / emacs / nano / etc
4. ...
5. profit
Ngrok

- **Ngrok.com** (sign up for advanced features)
  - Basically does advanced ssh proxy, see [https://dev.to/k4ml/poor-man-ngrok-with-tcp-proxy-and-ssh-reverse-tunnel-1fm](https://dev.to/k4ml/poor-man-ngrok-with-tcp-proxy-and-ssh-reverse-tunnel-1fm)

```
user1$ ssh-keygen -y  # send this to user2@mac
user2$ user1_pub_key >> ~/.ssh/authorized_keys
user2$ ngrok tcp --region eu 22
user1$ ssh user2@0.tcp.eu.ngrok.io \ -p 17440
user1>
```
Tmux

- TI;dr ALT+TAB for your shell
- Powerful tool when working in CLI
- Available in most repos via $ brew install tmux
- Easy to get started:
  - user1$ tmux new
  - user2$ tmux attach
- Use [wemux](http://example.com) for enhanced pairing features
- [Tmuxinator](http://example.com) - configure sessions
- [Xpanes](http://example.com) - tmux on steroids!
- Open source software
VIM (or Emacs)

- Hugely popular, wide community
- Been around for ages (tons of info, tutorials and books online)
- Available for most OS-es, vim often pre-installed on Linux servers
- Highly configurable (can function as a simple text editor or full-blown IDE)
- Many plugins and customisations exist
Live Demo time!
HIGH FIVE
YOU MUST ME
Tool Resources

- **ngrok**
  - [https://github.com/dwyl/learn-ngrok](https://github.com/dwyl/learn-ngrok)
  - [https://ngrok.com/docs](https://ngrok.com/docs)

- **tmux**
  - [https://leanpub.com/the-tao-of-tmux/read](https://leanpub.com/the-tao-of-tmux/read)
  - [https://thoughtbot.com/blog/a-tmux-crash-course](https://thoughtbot.com/blog/a-tmux-crash-course)
  - [https://hackernoon.com/a-gentle-introduction-to-tmux-8d784c404340](https://hackernoon.com/a-gentle-introduction-to-tmux-8d784c404340)
  - [http://hyperpolyglot.org/multiplexers](http://hyperpolyglot.org/multiplexers)

- **vim**
  - *vimtutor*
  - [https://www.openvim.com/](https://www.openvim.com/)
  - [https://danielmiessler.com/study/vim/](https://danielmiessler.com/study/vim/)
  - [https://vim-adventures.com/](https://vim-adventures.com/)
  - [https://chrome.google.com/webstore/detail/vimium/dbepggeogbaibhghnhndojpepiihcmeb](https://chrome.google.com/webstore/detail/vimium/dbepggeogbaibhghnhndojpepiihcmeb)
Windows Resources

- run Tmux in GIT Bash on Windows - [https://blog.pjsen.eu/?p=440](https://blog.pjsen.eu/?p=440)
- Running SSH Agent when starting Git Bash on Windows
- VSCode Live Share
- ...

General Resources

- https://www.pairprogramwith.me/
- https://www.youtube.com/watch?v=f9ALSPIPQhg
- https://www.youtube.com/watch?v=rG_U12uqRhE (cheesy voiceover)
- https://www.youtube.com/watch?v=1RYI9FaT9UQ
Conclusion

- Easy to get started with
- Invaluable for remote teams
- Fun
Questions?

Reach out to me on slack: @Pavel Savchenko

Or telegram: @pavelsavchenko