Workshop Manual

Overview

HackBio's workshop (formerly known as internship) is developed as a thorough mix of learning, practice, mentorship and applications (projects).

Each workshop is divided into 5 stages. Each stage contains tasks and learning resources that equips learners with the skills required for the next.
Altogether, the skills are essential for the final projects.

Key Take-Aways

- 📚 Learn
- 🎯 Practice
- 👨‍💻 Get mentored
- 🚀 Complete a project

Image credits: Nature.com; Unsplash.com

✍🏻 How it works

0 Stage **0** is focused on mastering a programming language. In practice, it is one of Python, R or Born again Shell (BASh).

Stage **1** is dedicated to applying your programming skills to solve simple to intermediate problems in biotechnology including molecular biology, epigenetics, gene & protein engineering. 1

✍️ How it works

2

Stage **2** is where learners reproduce existing bioinformatics pipelines, tutorials and projects. In this phase, you learn and build:

- Bioinformatics problems
- Datasets
- Build and pre-test analysis pipeline
- Share and communicate results

✍️ How it works

3

Stage **3** is focused on your final project (see page 5). You work with a team to solve interesting bioinformatics tasks. An initial progress update is expected towards the end of the week

Stage **4** is dedicated finalizing your project. A detailed report (including technical language) published on **medium**.

4

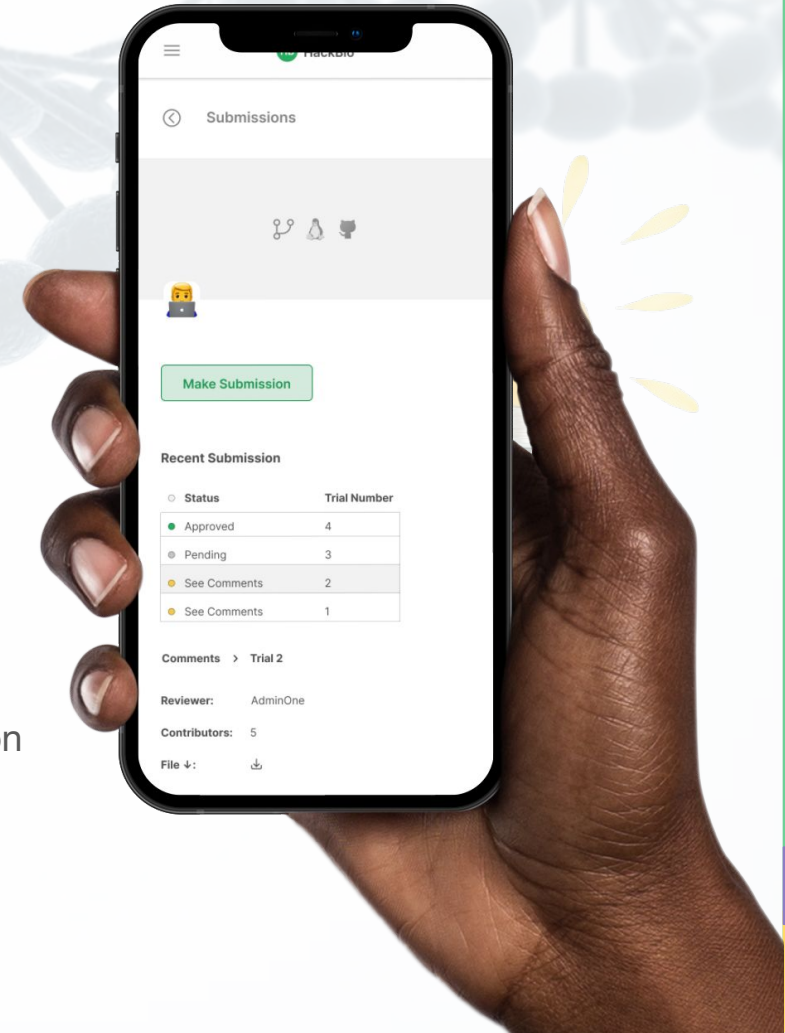
Project Samples

- Genomic Epidemiology of infections agents
- Machine learning based drug development
- Pipeline development for big data analysis
- Genomic dashboard for breast cancer
- Containerize and deploy existing software on cloud

👨‍💻 How We Mentor

Real world projects require **real-life mentorship**. We mentor by providing

- Line-by-line feedback on codes
- Constructive on reports
- Didactic learning resources
- Bioinformatics ready server
- Design tips for dashboard developers
- Quick turn around on software request/installation




Sequencing protocols
illumina
10X GENOMICS
NANOPORE
Database & Datasets
WORLDWIDE PDB PROTEIN DATA BANK
ChEMBL
GEO
SIB
NCBI
BLAST
High performance Computing
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