



# 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 stage. Altogether, the skills are essential for the final projects.

## Key Takeaway



Learn



Practice



Get mentored



Complete a project



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## How it works

**O** Stage **0** is focused on mastering a programming language. In practice, this could be either be 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

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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

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Stage **3** is focused on your final project (see page 5). You will 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) must be published on [medium](#).

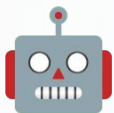
4



# 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 criticism on reports
- Didactic learning resources
- Bioinformatics ready server
- Design tips for dashboard developers
- Quick turn around on software request/installation

