COMPILO
## CODE.COMPILE.CONQUER

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At Compilo, we've built the ultimate platform for learning how to code because we believe programming education should be accessible, engaging, and effective for everyone. Whether you're taking your first steps into the world of coding or you're a developer looking to sharpen your existing skills, we provide all the tools and resources you need to succeed in one comprehensive platform.
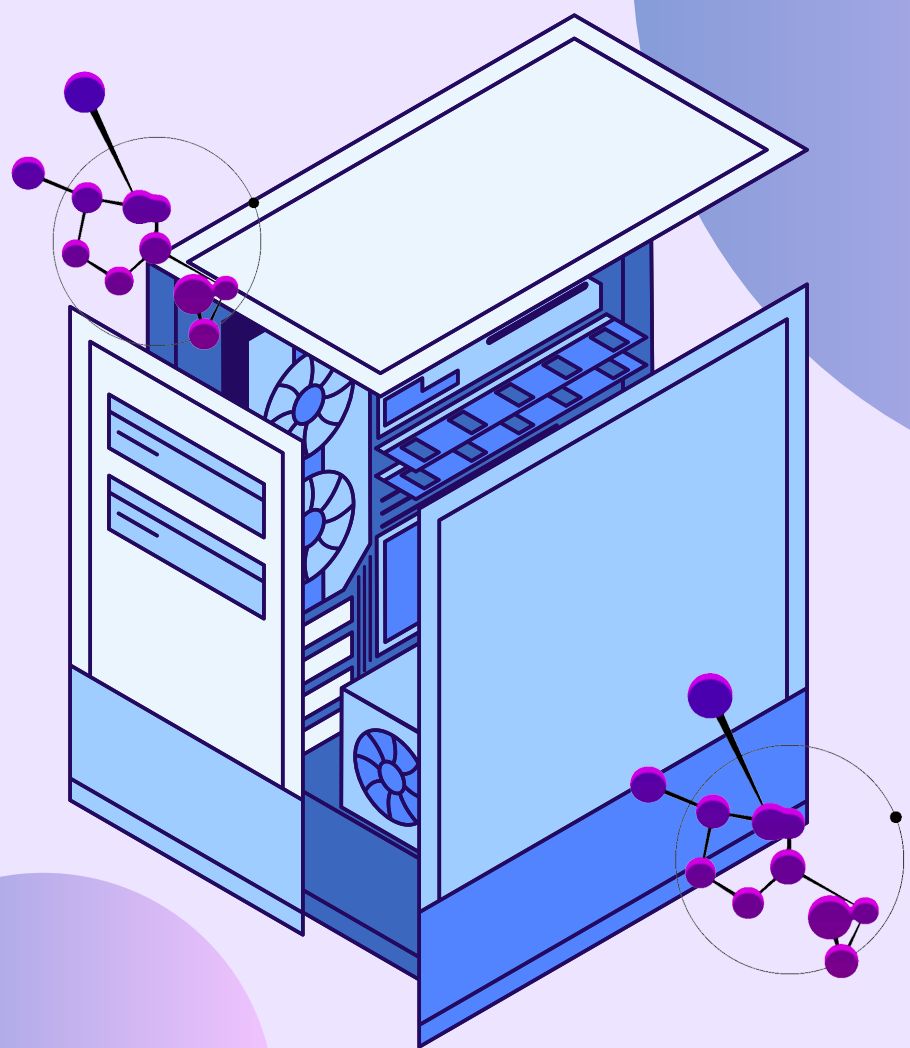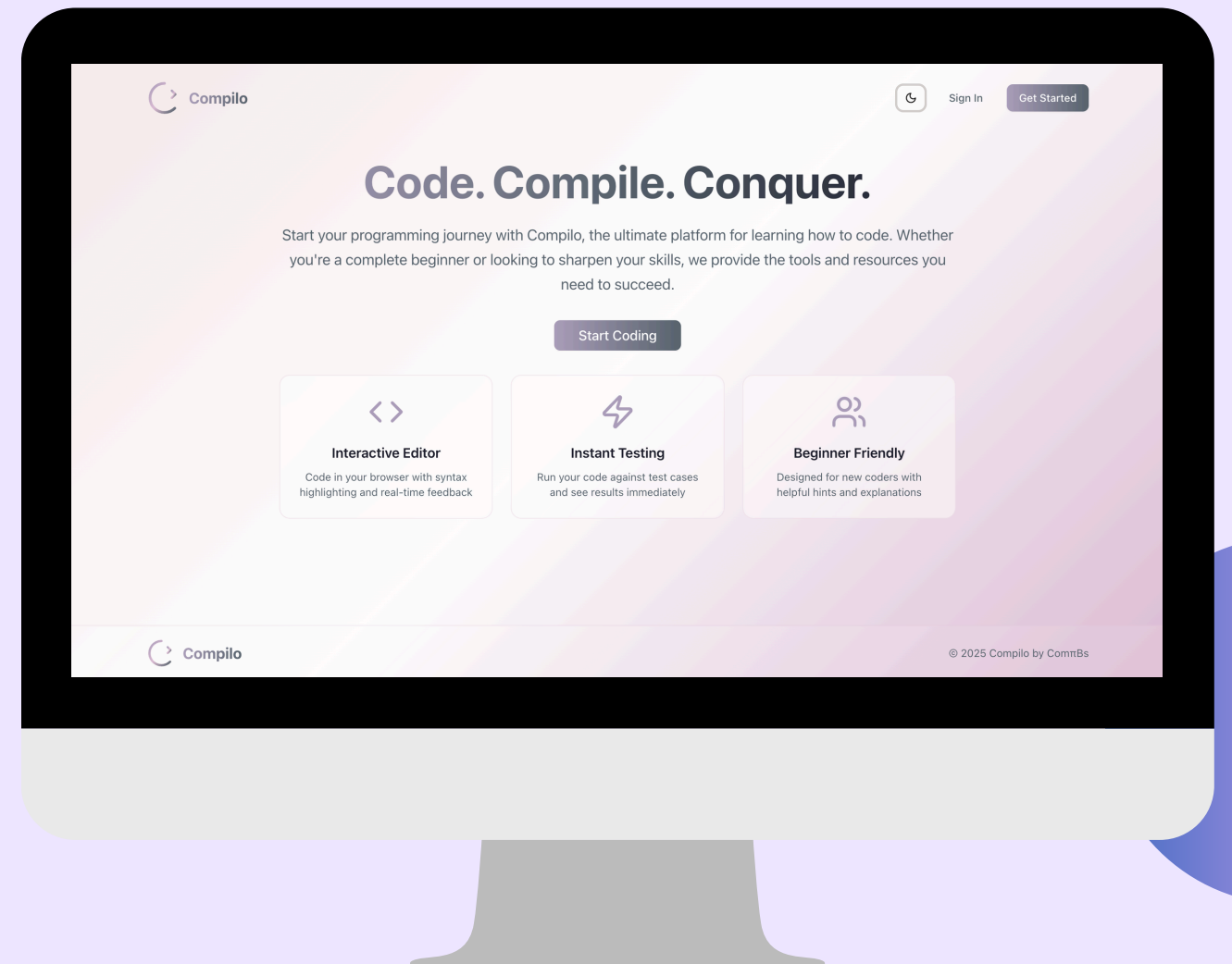
Cloud & Server

Our service is hosted on a private Openstack cloud. Five instances were used to create a seamless integration. On the other hand our compiler is hosted on a given server located in the Cybersecurity Hub. We configured everything, from the cloud, to the network.

Network

SWITCH AND ROUTER
Shared switch: ports 24 (trunk) and 23 (access)
Shared router: ports 3001 and 3000

SSH
Implemented to securely connect to a remote computer.

DHCP
Neded for the IP address designation.

PAT
Implemented for IP transalation and port sharing.

C- Compiler

CREATION
The compiler includes a lexer, parser, type checker and code generator. It was made taken into consideration the C-syntax provided.

IMPLEMENTATION
Flask is a lightweight Web Server Gateway Interface (WSGI) framework that has become the standard for Python web application development.

SECURITY
Bubble wrap was implemented to create a sandbox environment with a temporary file system and removing Linux namespaces for the process.

Architecture

Our architecture was designed to be container based. Using docker, we were able to have one container per instance (except for our load balancer).

We have five cloud instances:
- Two front end instances
- One backend instance
- One API instance
- One load balancer instance