**Heart Module (Automation Core)**

**Module Name: Heart Module**

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**Purpose:**

The Heart Module is the automation powerhouse of *Vortexify: A Builder*. It handles cloning of repositories, building Docker images, and deploying containers on the VMware VM. It serves as the functional engine behind automated project deployment.

**Technologies Used:**

* **Python 3.x**
* **Paramiko** (for SSH automation)
* **Docker CLI**
* **VMware Workstation** (target deployment platform)

**Responsibilities:**

* Clone public GitHub repositories containing Dockerfiles
* SSH into VMware-hosted Linux VMs
* Build Docker images from cloned code
* Run the Docker containers and expose ports
* Return deployed application access link (IP + Port)
* (Future Scope) Resource monitoring using C++ scripts

**Key Scripts:**

* clone\_repo.py – Clones the user’s GitHub repo
* deploy\_docker.py – Builds and runs the Docker container
* vm\_connector.py – Establishes SSH connection and executes commands
* extract\_link.py – Finds exposed port and composes access URL

**Input/Output:**

* **Input:** GitHub repo URL (provided via Brain Module)
* **Output:** Live deployment link or error logs