

Project Proposal – DepWay

Project Title:

DepWay – Automating Dockerization for Developers

Project Overview

DepWay is a web-based platform that automates the Dockerization process for developers and students.

Instead of manually writing Dockerfiles and building images, users can upload their project or link their GitHub repository, and DepWay automatically generates the required Docker configuration, builds the Docker image, and runs it locally or in a controlled environment.

This project focuses on simplifying containerization — the first and most essential step toward modern DevOps and cloud deployment.

Objectives

- To automate the creation of Dockerfiles for various backend technologies (Node.js, Python, .NET, etc.).
- To build and run Docker images directly through the web interface.
- To provide an educational tool for learning the Dockerization workflow.
- To simplify the packaging and environment setup for student projects.

Main Features

1. User Management
 - Register/Login to manage Dockerized projects.
2. Project Upload or GitHub Integration
 - Upload project files or connect to a public repository.
 - Detect the backend language automatically (e.g., Node.js, .NET).
3. Automatic Dockerfile Generation
 - Generate Dockerfile templates dynamically based on project type.
 - Allow users to view and modify before building.
4. Image Building and Containerization
 - Automatically build Docker image from generated Dockerfile.
 - Display build logs and success/failure messages.
5. Container Execution
 - Run the container locally (sandboxed environment).
 - Show container ID, port, and running status.
6. Logs and History
 - Display build history and logs for each project.

Target Users

- Students and developers who want to learn or test Dockerization easily.
- Educational institutions to teach DevOps fundamentals practically.

GitHub link: <https://github.com/NourElden20/DepWay.git>

Ui UX Design

The screenshot shows the Dockerization Platform interface. At the top, there are tabs for Auto Deployment, Port Management, Docker Hub, and GitHub Integration. The Docker Hub tab is active, displaying a form to enter Docker Hub credentials. A tooltip provides instructions: "ادخل بيانات رفع الصور" (Enter image upload data) and "ادخل حساب Docker Hub" (Enter Docker Hub account). Below the form, a note says "حول مشاريعك إلى بسيطة" (Simplify your projects) and "Docker containers". The Docker Hub logo is present.

The screenshot shows the Docker status section of the platform. It displays a table of active Docker containers. The columns include container name, image, status, and action buttons. The containers listed are:

النام	الصورة	الحالة	المنافذ	ال действия
pensive_wright	hello-world:Exited	Exited	المنفذ	متوقف
suspicious_noether	zeyadzero/vvlatest:Exited	Exited	المنفذ	متوقف
keen_villani	zeyadzero/table:latest:Running	Running	المنفذ	نشط
event-registration-event-service	event-registration-system-final-event-service:Exited	Exited	المنفذ	إيقاف
event-registration-registration-service	event-registration-system-final-registration-service:Exited	Exited	المنفذ	إيقاف
event-registration-frontend	event-registration-system-final-frontend:Exited	Exited	المنفذ	إيقاف

Google | Fine-grained Personal Access Token | Dockerization Platform | localhost:3000

Apps |asp.net|Html|أكاديمية الزيرو|Replit - Home|HTML Reference|Full Stack Development|Python Web Development|All Bookmarks

صور Docker (21)

zeyadzero/depi:latest الحجم: MB 69.48 تاريخ الإنشاء: ١٤٤٧/٦/٢٧ ...ID: sha256:c9349	zeyadzero/lab2:latest الحجم: MB 69.47 تاريخ الإنشاء: ١٤٤٧/٦/٢٧ ...ID: sha256:cf48b	zeyadzero/table:latest الحجم: MB 72.38 تاريخ الإنشاء: ١٤٤٧/٦/٢٧ ...ID: sha256:ada2c
event-registration-system-final-frontend:latest الحجم: MB 47.09 تاريخ الإنشاء: ١٤٤٦/٦/٦ ...ID: sha256:8d3a3	hello-world:latest الحجم: MB 0.01 تاريخ الإنشاء: ١٤٤٧/٦/١٤ ...ID: sha256:1b44b	zeyadzero/vv:latest الحجم: MB 69.47 تاريخ الإنشاء: ١٤٤٧/٦/٢٧ ...ID: sha256:405ed
MB 47.26 الحجم: تاريخ الإنشاء: ١٤٤٦/٦/٦ ...ID: sha256:1bc7b	MB 47.09 الحجم: تاريخ الإنشاء: ١٤٤٦/٦/٦ ...ID: sha256:a1fd	MB 47.09 الحجم: تاريخ الإنشاء: ١٤٤٦/٦/٦ ...ID: sha256:a74cb

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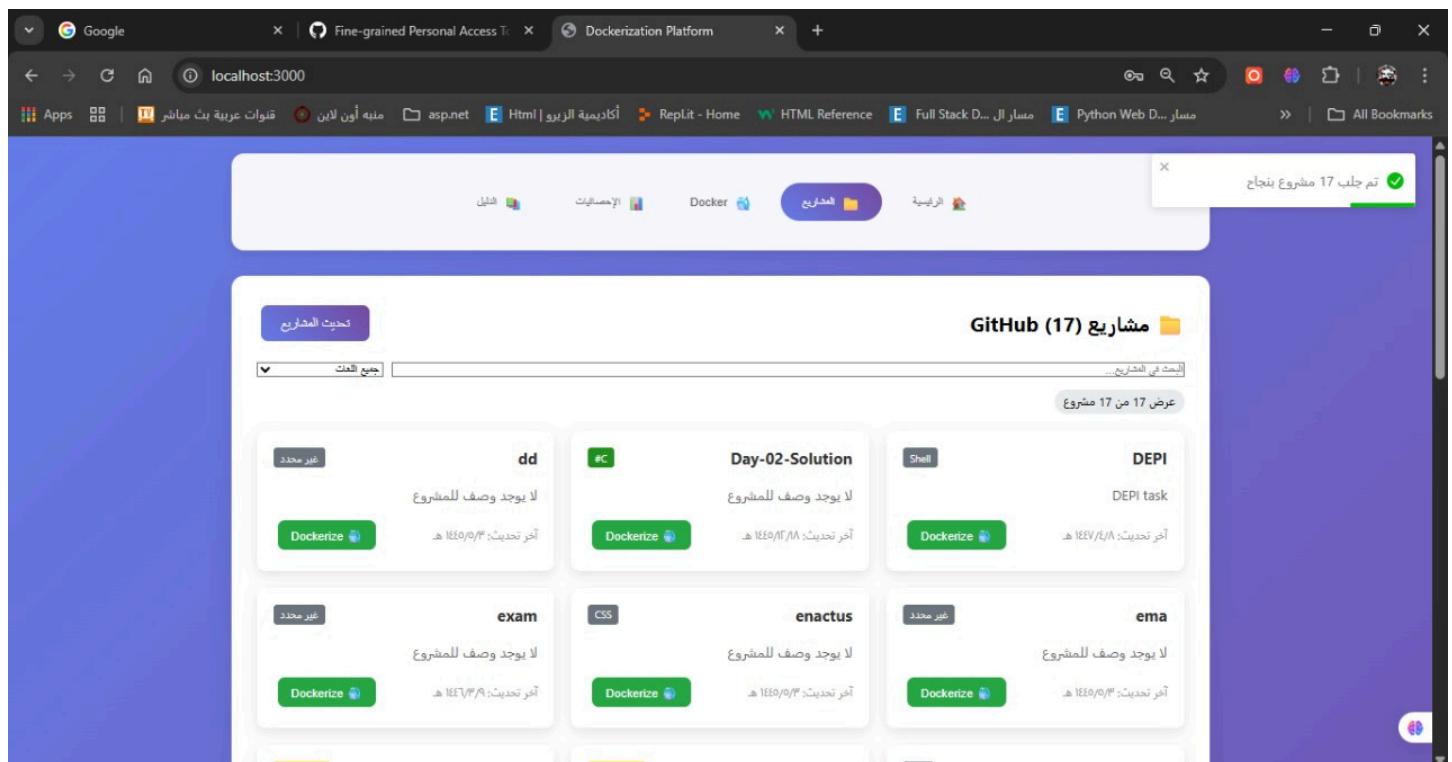
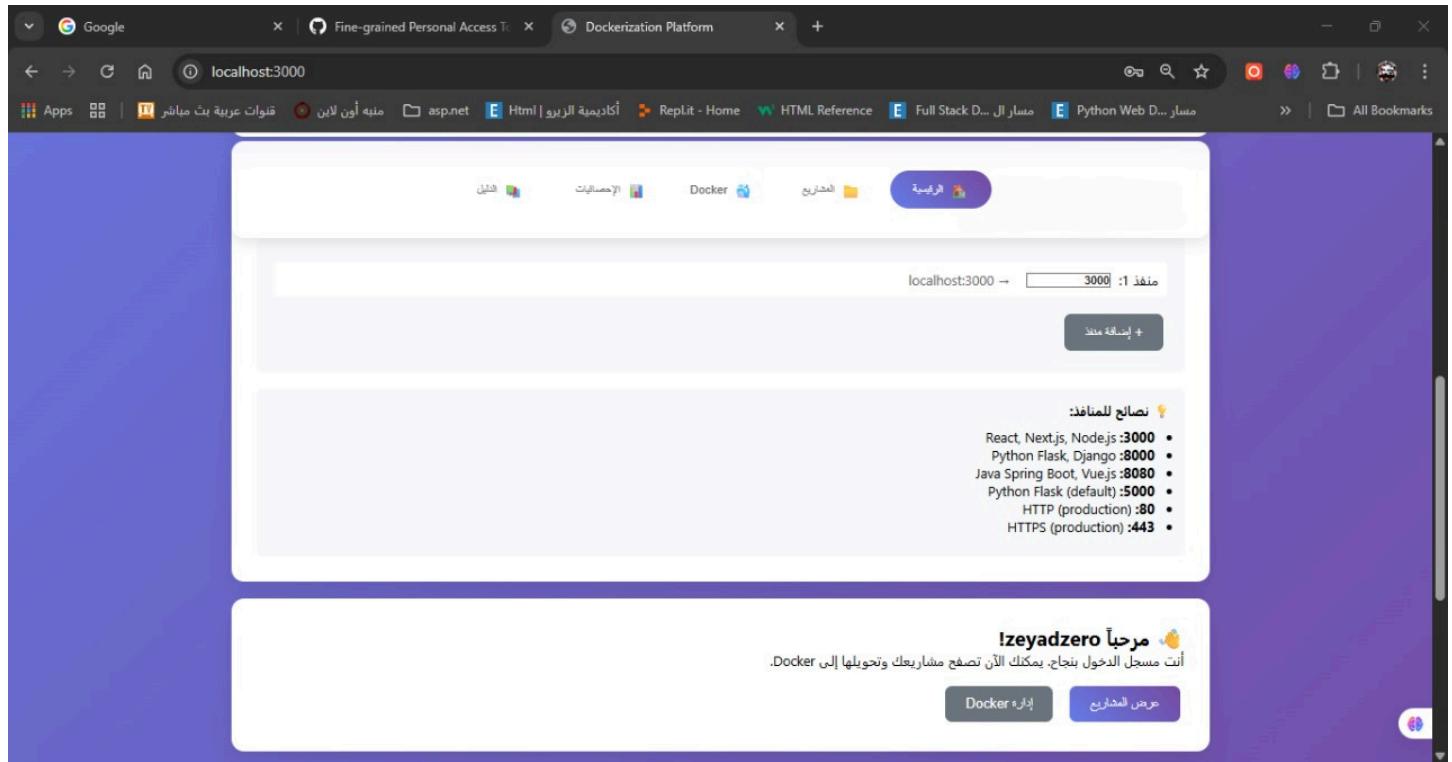
الإحصائيات

1 نشطة Containers	21 صور Docker	0 مشاريع GitHub
9 جمالي		

The screenshot shows a Docker management interface with a purple header bar. The top navigation bar includes tabs for 'Docker' and 'Containers'. Below the header, a section titled 'حالاتContainers' (Container Status) displays nine active containers. Each container card provides details such as name, image, status, and port mapping. Buttons for 'Stop' and 'Start' are visible for each container.

النام	الصورة	الحالة	المتافق
pensive_wright	hello-world	exited	متوقف
suspicious_noether	zeyadzero/vvlatest	exited	متوقف
keen_villani	zeyadzero/table:latest	exited	متوقف
event-registration-event-service	event-registration-system-final-event-service	exited	
event-registration-registration-service	event-registration-system-final-registration-service		
event-registration-frontend	event-registration-system-final-frontend	exited	

The screenshot shows the homepage of the Dockerization Platform. The top navigation bar includes tabs for 'Auto Deployment', 'Port Management', 'Docker Hub', and 'GitHub Integration'. A central feature is a large input field for GitHub Personal Access Token, with a placeholder value 'ghp_xxxxxxxxxxxxxxxxxxxxxxx'. A button labeled ' تسجيل الدخول ' (Log In) is located below the input field. The background features a purple gradient with a faint Docker logo watermark.



Screenshot of Docker Desktop showing the Containers page. The sidebar includes options like Ask Gordon, Containers (selected), Images, Volumes, Builds, Docker Hub, Docker Scout, and Extensions. The main area shows a table of running containers:

	Name	Container ID	Image	Port(s)	CPU (%)	Last started	Actions
<input type="checkbox"/>	keen_villani	0b3d8dce6c1f	zeyadzero/table	-	N/A	1 minute ago	▶ ⋮ trash
<input type="checkbox"/>	suspicious_noet	86913638196b	zeyadzero/vv.la	-	N/A	1 minute ago	▶ ⋮ trash
<input type="checkbox"/>	pensive_wright	42c4e192a779	hello-world	-	N/A	1 minute ago	▶ ⋮ trash
<input type="checkbox"/>	event-registratio	-	-	-	N/A	1 minute ago	▶ ⋮ trash

Showing 4 items

Walkthroughs

- Multi-container applications
- Containerize your application

Engine running | RAM 1.51 GB CPU 0.25% Disk: 5.65 GB used (limit 1006.85 GB) | S docker init | Terminal | New version available

Database Design

