Docker is an open source platform that simplifies the process of developing, deploying, and running applications using container technology. Here are some basic concepts about Docker:

**1. Containers**

* **A container** is a lightweight and self-contained environment that contains all the software needed to run the application, including source code, libraries, and other dependencies.
* Containers allow you to run applications consistently across any environment, from personal computers to cloud servers.

**2. Image**

* **Image** is a collection of files and instructions needed to create a container.
* Images are built from a Dockerfile, a text file containing commands to build an image.
* Images are immutable and can be shared through Docker Hub or other registries.

**3. Dockerfile**

* **Dockerfile** is a text file containing commands to build a Docker image.
* It determines how the software is installed and what configurations are required for the application.

**4. Docker Hub**

* **Docker Hub** is a public registry service for storing and sharing Docker images.
* Users can upload or download images from Docker Hub.

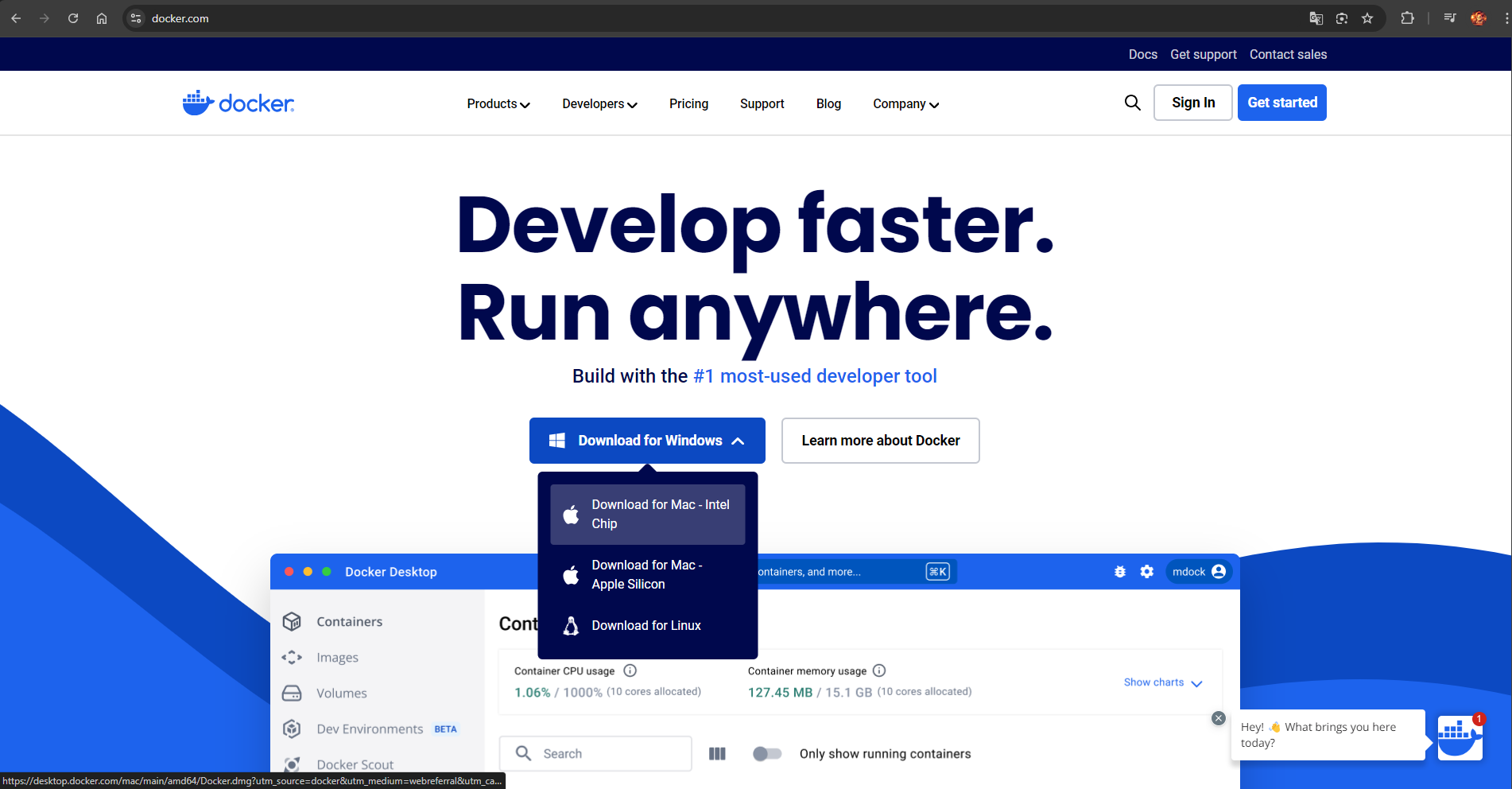
**5. Benefits of Docker**

* **Portability** : Run applications consistently across different environments.
* **Scalability** : Easily deploy and manage large numbers of containers.
* **Resource efficiency** : Containers are much lighter than virtual machines, helping to save system resources.
* **Rapid development** : Docker makes it easy for developers to configure development and testing environments.

**6. Compare with virtual machine**

* **Container** : Lighter and shares the operating system kernel with the host system, booting quickly.
* **Virtual Machine** : Each virtual machine runs a full operating system and consumes more resources.

First, install Docker, go to the website: <https://www.docker.com>, download and install



After successful installation

A screenshot of a computer

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Go to settings and install Kubernetes

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Go to Software updates and update to the latest version

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To deploy a project in Docker, you first need to create a Dockerfile

Right click on API, select Add, Select Docker Support…

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After successfully creating the Dockerfile, we will use Docker to build the image

docker build -t <Your Image Name> .

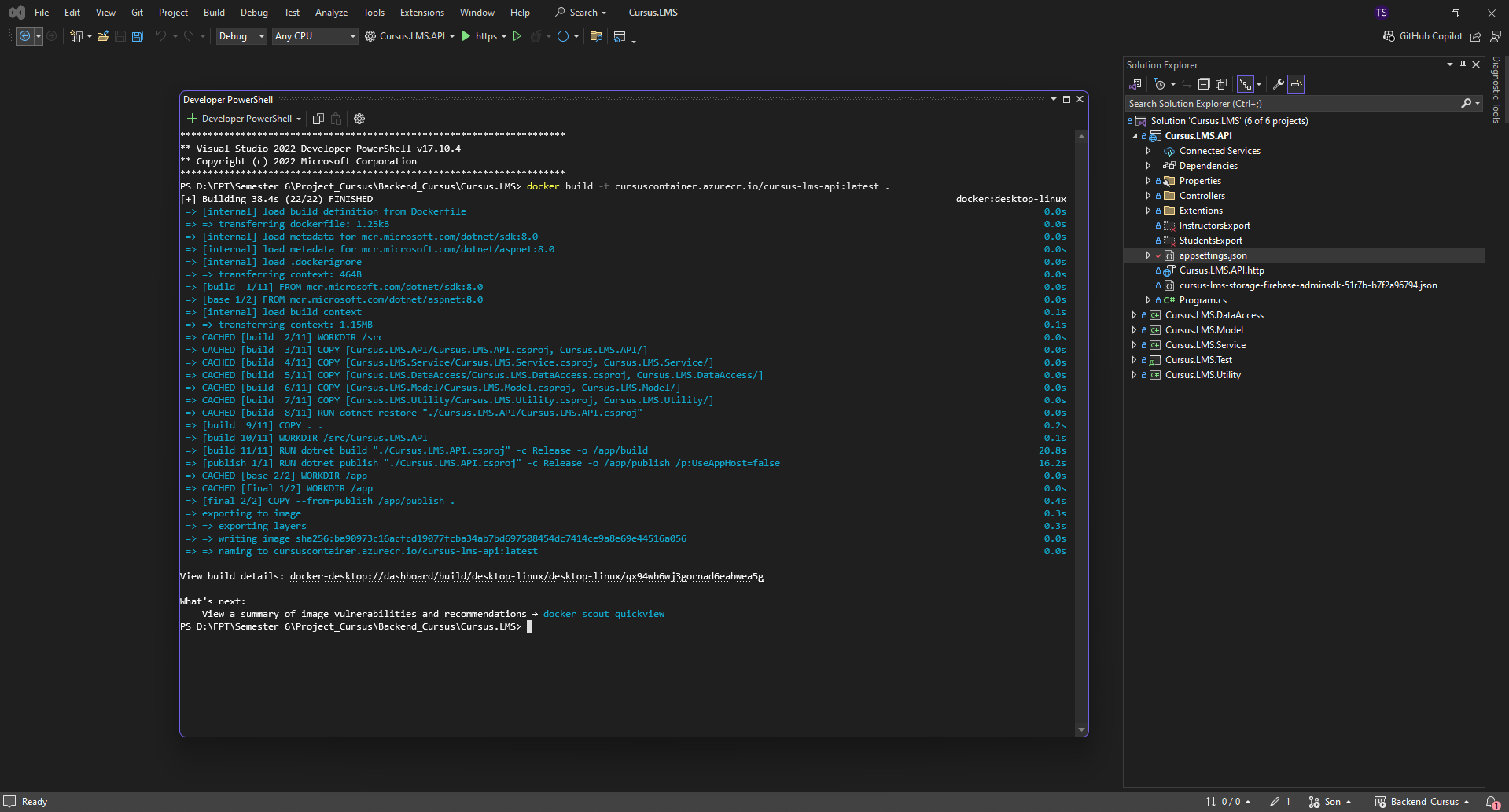


Image has been created in Docker

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Run by clicking the run button in the Actions column

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Enter Host port and Run

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Description automatically generated

The project is already running in Containers, click on the port to open it in the browser

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Data retrieved successfully

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The process of creating, building images and running in Docker Containers has been completed

End!