How to use Docker

You will first need to install Docker on your computer (https://www.docker.com/).
If you have a computer with Linux Ubuntu 18.04 or later, you can follow these instructions:
https://docs.docker.com/engine/install/ubuntu/

When Docker is installed on your machine, you may need to execute following commands to efficiently use Docker (note that <username> should be replaced with your actual username):

```
sudo service docker start

sudo service docker status

sudo chown <username>:docker /var/run/docker.sock

sudo usermod -aG docker <username>
```

Now, you can use this command to create a docker image containing the latest stable Linux distribution:

```
sudo docker pull ubuntu
```

You can then install specific programs inside the image with specific commands.
For further details, you can read the Docker Docs (https://docs.docker.com/).

Concrete example (ResFinder)

Another example is to build an image using a dockerfile. Let's take the example of an existing sofware tool (ResFinder 4.0) with its own dockerfile, available at:
https://bitbucket.org/genomicepidemiology/resfinder/src/master/

The following command will allow to build the "resfinder" image from the available dockerfile (included in the repository):

```
docker build -t resfinder dockerfile
```

To test the tool, you can download the sequence having the accession number CP030171.1 using this web page for example:
https://www.ncbi.nlm.nih.gov/nuccore/CP030171.1?report=fasta

Finally, you can run the following command to get resfinder's result files:

```
docker run --rm -it -v $(pwd)/db_resfinder/:/usr/src/db_resfinder -v
$(pwd)/db_pointfinder/:/usr/src/db_pointfinder -v $(pwd)/results/:/usr/src/results -v
$(pwd)/CP030171.1.fna:/usr/src/CP030171.1.fna resfinder -ifa CP030171.1.fna -acq
-db_res /usr/src/db_resfinder -db_point /usr/src/db_pointfinder -o /usr/src/results
```