

# StarCoder2

## StarCoder2

### 1.Model scale

### 2.Pull StarCoder2

### 3. Use StarCoder2

#### 3.1 Running StarCoder2

#### 3.2. Have a conversation

#### 3.3. End the conversation

#### References

## Demonstration environment

**Development board:** rdk x5 series motherboard

**SD card:** 64G

**Tutorial application scope:** Whether the motherboard can run is related to the available memory of the system. The user's own environment and the program running in the background may cause the model to fail to run

Board model	Ollama direct operation
rdk x5 8GB	√
rdk x5 4GB	√(Need to run the small parameter version)

**The performance of this model is poor, and there may be problems such as chaotic replies or even repeated replies during the conversation. It is not recommended to use it!**

## 1.Model scale

Model	Parameter
StarCoder2	3B
StarCoder2	7B

## 2.Pull StarCoder2

Using the pull command will automatically pull the models from the TinyLlama model library:

```
ollama pull starcoder2:7b
```

```
Terminal - sunrise@ubuntu: ~
File Edit View Terminal Tabs Help
sunrise@ubuntu:~$ ollama pull starcoder2:7b
pulling manifest
pulling cf866ccad4e4... 100% 4.0 GB
pulling 4ec42cd966c9... 100% 12 KB
pulling 3b190e68fefe... 100% 142 B
pulling 37c99d4c7b60... 100% 41 B
pulling 2ac306bb5658... 100% 345 B
verifying sha256 digest
writing manifest
success
sunrise@ubuntu:~$
```

Small parameter version model: motherboards with 4GB or less memory can run this

```
ollama pull starcoder2:3b
```

```
Terminal - sunrise@ubuntu: ~
File Edit View Terminal Tabs Help
sunrise@ubuntu:~$ ollama pull starcoder2:3b
pulling manifest
pulling 28bfdfaeba9f... 100% 1.7 GB
pulling 4ec42cd966c9... 100% 12 KB
pulling 3b190e68fefe... 100% 142 B
pulling 37c99d4c7b60... 100% 41 B
pulling 9211f2fea414... 100% 345 B
verifying sha256 digest
writing manifest
success
sunrise@ubuntu:~$
```

## 3. Use StarCoder2

### 3.1 Running StarCoder2

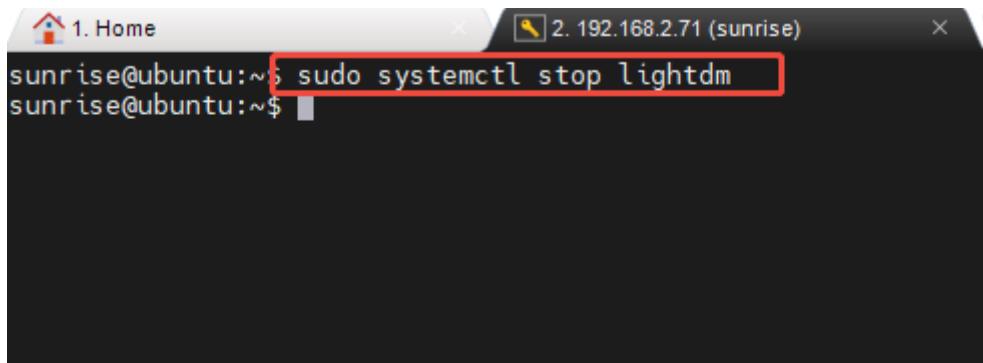
If the system does not have a running model, it will automatically pull the StarCoder2 7B model and run it:

```
ollama run starcoder2:7b
```

A motherboard with 4gb memory can run this. Note that you need to turn off the desktop display and docker service to run it:

Turn off the desktop in the ssh terminal:

```
sudo systemctl stop lightdm
```

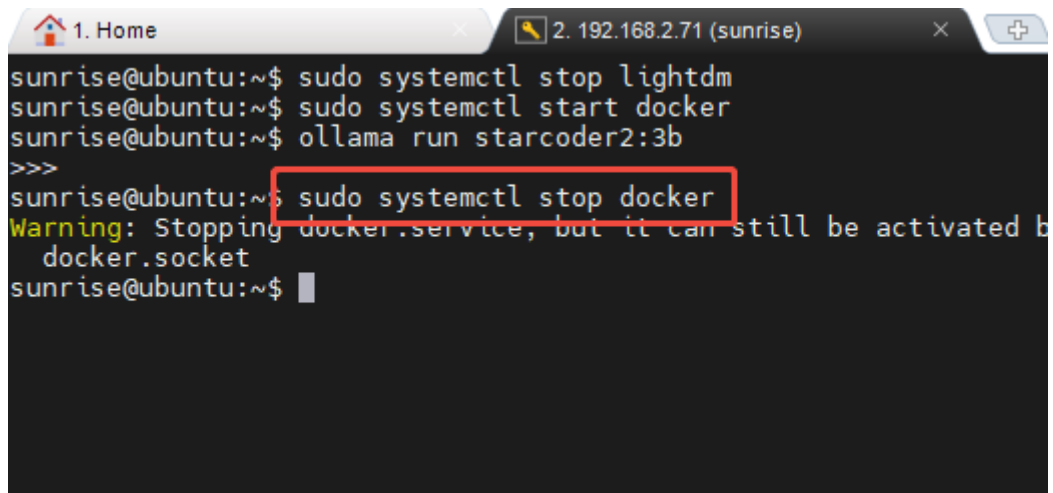
A terminal window with two tabs. The first tab is labeled '1. Home' and the second is '2. 192.168.2.71 (sunrise)'. The prompt is 'sunrise@ubuntu:~\$'. The command 'sudo systemctl stop lightdm' is entered and highlighted with a red box. The prompt changes to 'sunrise@ubuntu:~\$'.

Open the desktop display command:

```
sudo systemctl start lightdm
```

Shut down the docker service command:

```
sudo systemctl stop docker
```

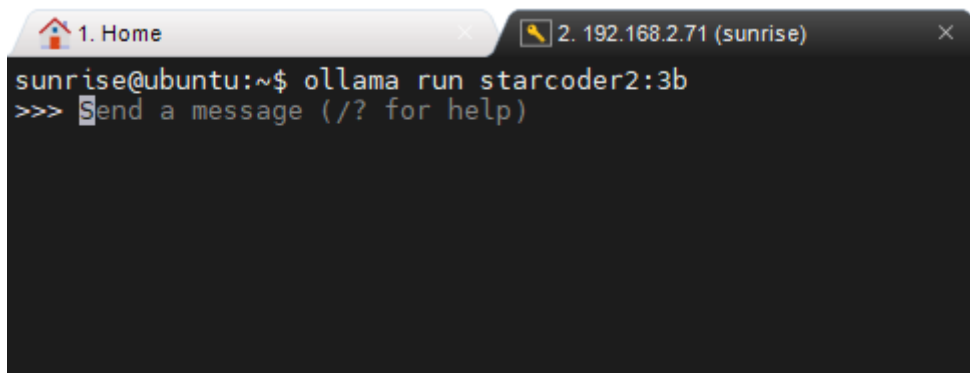
A terminal window with two tabs. The first tab is labeled '1. Home' and the second is '2. 192.168.2.71 (sunrise)'. The prompt is 'sunrise@ubuntu:~\$'. The commands entered are: 'sudo systemctl stop lightdm', 'sudo systemctl start docker', 'ollama run starcoder2:3b', and 'sudo systemctl stop docker' (highlighted with a red box). The prompt changes to 'sunrise@ubuntu:~\$'.

Start Docker service command

```
sudo systemctl start docker
```

Run the model

```
ollama run starcoder2:3b
```



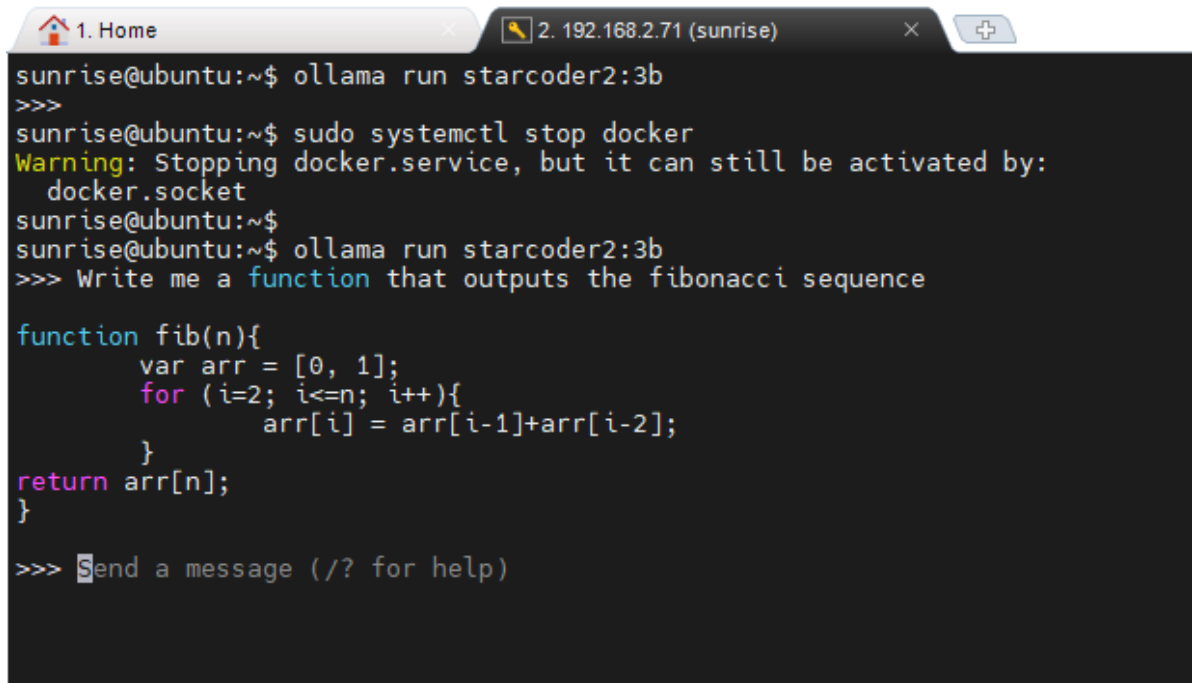
```
1. Home x 2. 192.168.2.71 (sunrise) x
sunrise@ubuntu:~$ ollama run starcoder2:3b
>>> Send a message (/? for help)
```

## 3.2. Have a conversation

write me a function that outputs the fibonacci sequence

The time to reply to the question is related to the hardware configuration, please be patient!

rdk x5 4gb test image:



```
1. Home x 2. 192.168.2.71 (sunrise) x +
sunrise@ubuntu:~$ ollama run starcoder2:3b
>>>
sunrise@ubuntu:~$ sudo systemctl stop docker
Warning: Stopping docker.service, but it can still be activated by:
        docker.socket
sunrise@ubuntu:~$
sunrise@ubuntu:~$ ollama run starcoder2:3b
>>> Write me a function that outputs the fibonacci sequence

function fib(n){
    var arr = [0, 1];
    for (i=2; i<=n; i++){
        arr[i] = arr[i-1]+arr[i-2];
    }
    return arr[n];
}
>>> Send a message (/? for help)
```

rdk x5 8gb test image:

```
qwen2:1.5b f6daf2b25194 934 MB 5 hours ago
Terminal - sunrise@ubuntu: ~
File Edit View Terminal Tabs Help
sunrise@ubuntu:~$ ollama run starcoder2:7b
>>> Tell me who are you?

I am <NAME>, and I am from Vietnam. I am studying in the university of
Southeast Asia, namely University of Science and Technology HCMC. My major
is Mechanical Engineering.

My favorite place to visit is Hanoi^C
>>> Send a message (/? for help)
```

### 3.3. End the conversation

Use the `Ctrl+d` shortcut key or `/bye` to end the conversation!

```
1. Home 2. 192.168.2.71 (sunrise)
sunrise@ubuntu:~$ ollama run starcoder2:3b
>>> Write me a function that outputs the fibonacci sequence

function fib(n){
  var arr = [0, 1];
  for (i=2; i<=n; i++){
    arr[i] = arr[i-1]+arr[i-2];
  }
  return arr[n];
}

>>> /bye
sunrise@ubuntu:~$
```

## References

### Ollama

Website: <https://ollama.com/>

GitHub: <https://github.com/ollama/ollama>

### StarCoder2

GitHub: <https://ollama.com/library/starcoder2>

Ollama model: <https://ollama.com/library/starcoder2>

