

一、测试结果：

1、server 端

```
C:\Windows\System32\cmd.exe - python server.py
Microsoft Windows [版本 10.0.19042.1052]
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D:\资料\作业\计算机网络\multiThreadWebServer>python server.py
<_MainThread(MainThread, started 2444)>
waiting .....
deal with connection ....
<Thread(Thread-1, started 10740)><_MainThread(MainThread, started 2444)>
waiting .....

你好

close socket..
deal with connection ....
<Thread(Thread-2, started 248)><_MainThread(MainThread, started 2444)>

我很好waiting .....

close socket..
deal with connection ....
<Thread(Thread-3, started 13372)><_MainThread(MainThread, started 2444)>

你在做什么? waiting .....

close socket..
```

2、client 端（运行了 3 个客户端为例）

```
C:\Windows\System32\cmd.exe - python client.py
Microsoft Windows [版本 10.0.19042.1052]
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D:\资料\作业\计算机网络\multiThreadWebServer>python client.py
<<<第三次见你了
Received '学会了.....的后面要加个至关重要的定语“军队里的”
<<<好的
Received '晚上我去看你，我明天一天没课。'
<<<你说话真有意思
Received '真的是这个神乎乎的家伙策划的?'
<<<

C:\Windows\System32\cmd.exe - python client.py
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D:\资料\作业\计算机网络\multiThreadWebServer>python client.py
<<<你在吗
Received '在。'
<<<你今天开心吗
Received '我，不会，认输的!'
<<<?
Received '然后?'
<<<你真可爱
Received '不.....'
<<<

C:\Windows\System32\cmd.exe - python client.py
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D:\资料\作业\计算机网络\multiThreadWebServer>python client.py
<<<你好
Received '你好吗?'
<<<我很好
Received '还不错'
<<<你在做什么?
Received '不要你管！你不配管我！'
<<<A
```

二、发现问题及解决

1、若是在运行过程中出现此错误，是因为安装了最新版的 chatterbot 的原因，请参考此连接进行修复

参考连接：<https://stackoverflow.com/questions/66087475/chatterbot-error-oserror-e941-cant-find-model-en>

Traceback (most recent call last):

```
File "c:/users/USER/desktop/bot.py", line 77, in <module>
    chatbot = ChatBot('Ron Obvious')
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\chatterbot\c
    self.storage = utils.initialize_class(storage_adapter, **kwargs)
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\chatterbot\c
    return Class(*args, **kwargs)
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\chatterbot\s
    super().__init__(**kwargs)
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\chatterbot\s
    'tagger_language', languages.ENG
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\chatterbot\t
    self.nlp = spacy.load(self.language.ISO_639_1.lower())
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\spacy\__init
    return util.load_model(name, disable=disable, exclude=exclude, config=config)
File "C:\Users\USER\AppData\Local\Programs\Python\Python37\lib\site-packages\spacy\util.p
    raise IOError(Errors.E941.format(name=name, full=OLD_MODEL_SHORTCUTS[name]))
OSError: [E941] Can't find model 'en'. It looks like you're trying to load a model from a s

nlp = spacy.load("en_core_web_sm")
```

For more details on the available models, see the models directory: <https://spacy.io/models>