

# 课程实习报告（2022-2023-02）

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## 1 Packet analysis

Upon running the following command:

---

```
1 sudo tcpdump -i lo -nnvvvxXKS -s0 port 3333
```

---

the following packet is captured:

```
08:34:10.790666 IP (tos 0x0, ttl 64, id 12824, offset 0, flags [DF], proto TCP (6),
length 64)
  127.0.0.1.46668 > 127.0.0.1.3333: Flags [P.], seq 2400005725:2400005737, ack 373279396,
  win 512, options [nop,nop,TS val 3259949783 ecr 3259896343], length 12
    0x0000:  4500 0040 3218 4000 4006 0a9e 7f00 0001  E..@2.@@.....
    0x0010:  7f00 0001 b64c 0d05 8f0d 2e5d 163f caa4  ....L.....].?...
    0x0020:  8018 0200 fe34 0000 0101 080a c24e e2d7  ....4.....N..
    0x0030:  c24e 1217 6865 6c6c 6f20 776f 726c 640a  .N..hello.world.
```

1. Tell me the meaning of each option used in the previous command.

- **-i:**
- **-nn:**
- **-vvv:**
- **-x:**
- **-X:**

- -S:
- -K:
- -s0:

2. Please analyze this captured packet and explain it to me as detailed as you can.

**Answer**

## 2 HTTP

1. Write a simple script showing how HTTP works (you need curl);

---

```
1 #!/bin/bash
2
```

---

2. Record your HTTP demo session with `ttystdout`.

## 3 Questions

List at least 5 problems you've met while doing this work. When listing your problems, you have to tell me:

1. Description of this problem. For example,
  - What were you trying to do before seeing this problem?
2. How did you try solving this problem? For example,
  - Did you google? web links?
  - Did you read the man page?
  - Did you ask others for hints?

### 3.1 Problems

- 1.
- 2.
- 3.
- 4.
- 5.