

# CSED211: Lab. 3

## BombLab (Supplement)

조성준

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# Port Forwarding

- The **purpose** of port forwarding is to access the bomb lab server

# Port Forwarding (Terminal Version)

- In the terminal (local session, **not remote session**), follows below
  - `cd ~` # Go to the home directory
  - `ssh-keygen` # This is required to generate `.ssh` directory in the home directory
    - You can check whether the `.ssh` directory is generated by `ls -ald ~/.ssh`
  - `vi ~/.ssh/config` # Open the config file in the `~/.ssh` directory
  - In the config file, write below (Inside `vi`, you can save the content by `esc:wq!`)

```
Host myserver
  HostName programming2.postech.ac.kr
  Port 2022
  User allencho1222
  LocalForward 15213 127.0.0.1:15213
```

→ You can use other names

→ Your account name (programming server)

→ This enables port forwarding

→ Indentation (e.g., tab key)

# Port Forwarding (Terminal Version)

- To do port forwarding, connect to the programming server
  - `ssh myserver` # You might not use `myserver` (due to different Host)

# Port Forwarding (XShell Version)

- Create new session

Properties of New Session (2) ? X

Category:

- Connection**
- Authentication
  - Login Prompts
  - Login Scripts
- SSH
  - Security
  - Tunneling**
  - SFTP
- TELNET
- RLOGIN
- SERIAL
- Proxy
- Keep Alive

**Terminal**

- Keyboard**
- VT Modes
- Advanced

**Appearance**

- Window
- Highlight

Advanced

- Trace
- Bell

**Logging**

**File Transfer**

- X/YMODEM
- ZMODEM

**Connection**

General

Name: programming server session

Protocol: SSH

Host: programming2.postech.ac.kr

Port Number: 2022

Description:

Reconnect

☐ Reconnect automatically if connection is terminated unexpectedly

Interval: 30 sec Limit: 0 min

TCP Options

☐ Use Nagle's algorithm

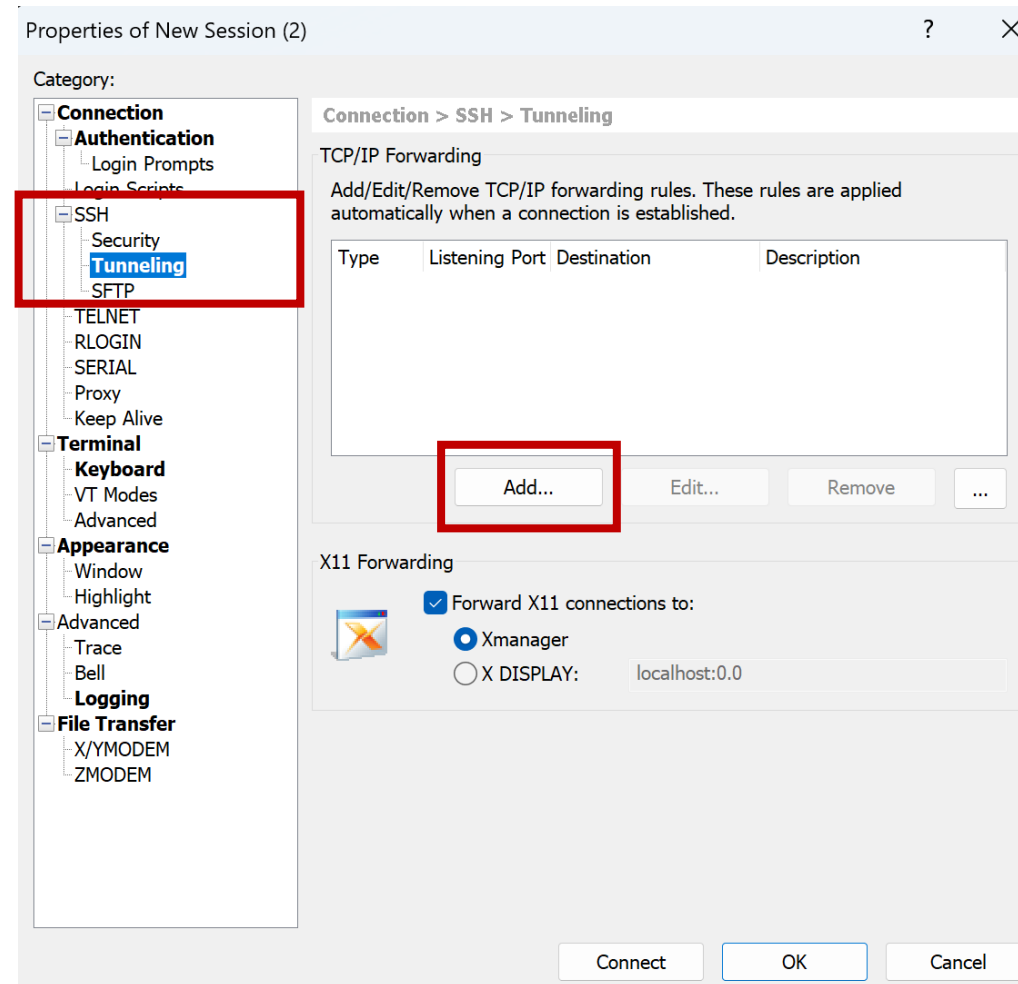
Internet Protocol Version

☒ Auto ☐ IPv4 ☐ IPv6

Connect OK Cancel

# Port Forwarding (XShell Version)

- Go to SSH->Tunneling to setup port forwarding



# Port Forwarding (XShell Version)

- Add the forwarding rule for 15213

Forwarding Rule

Type (Direction): Local (Outgoing) ▾

Source Host: localhost ▾

Listening Port: 15213 ▾

☐ Accept local connections only

Destination Host: localhost ▾

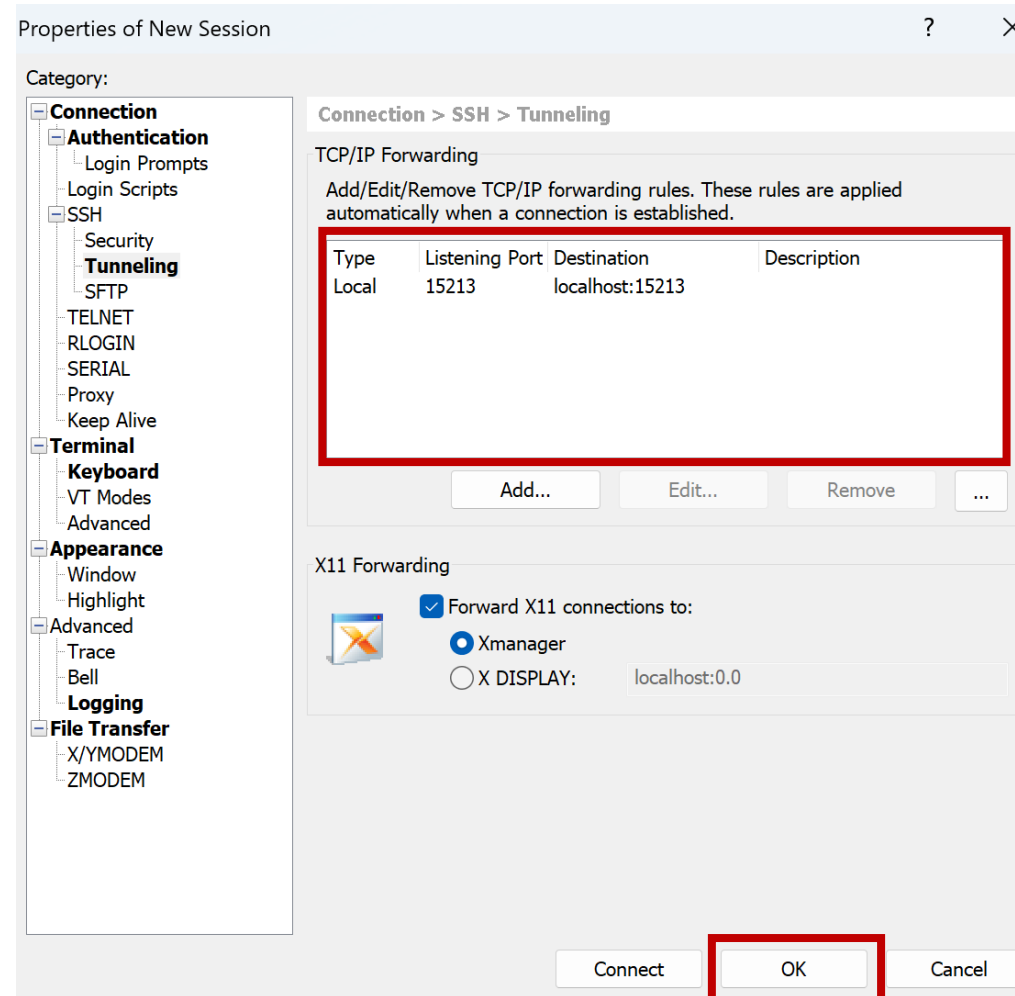
Destination Port: 15213 ▾

Description:  
download

OK Cancel

# Port Forwarding (XShell Version)

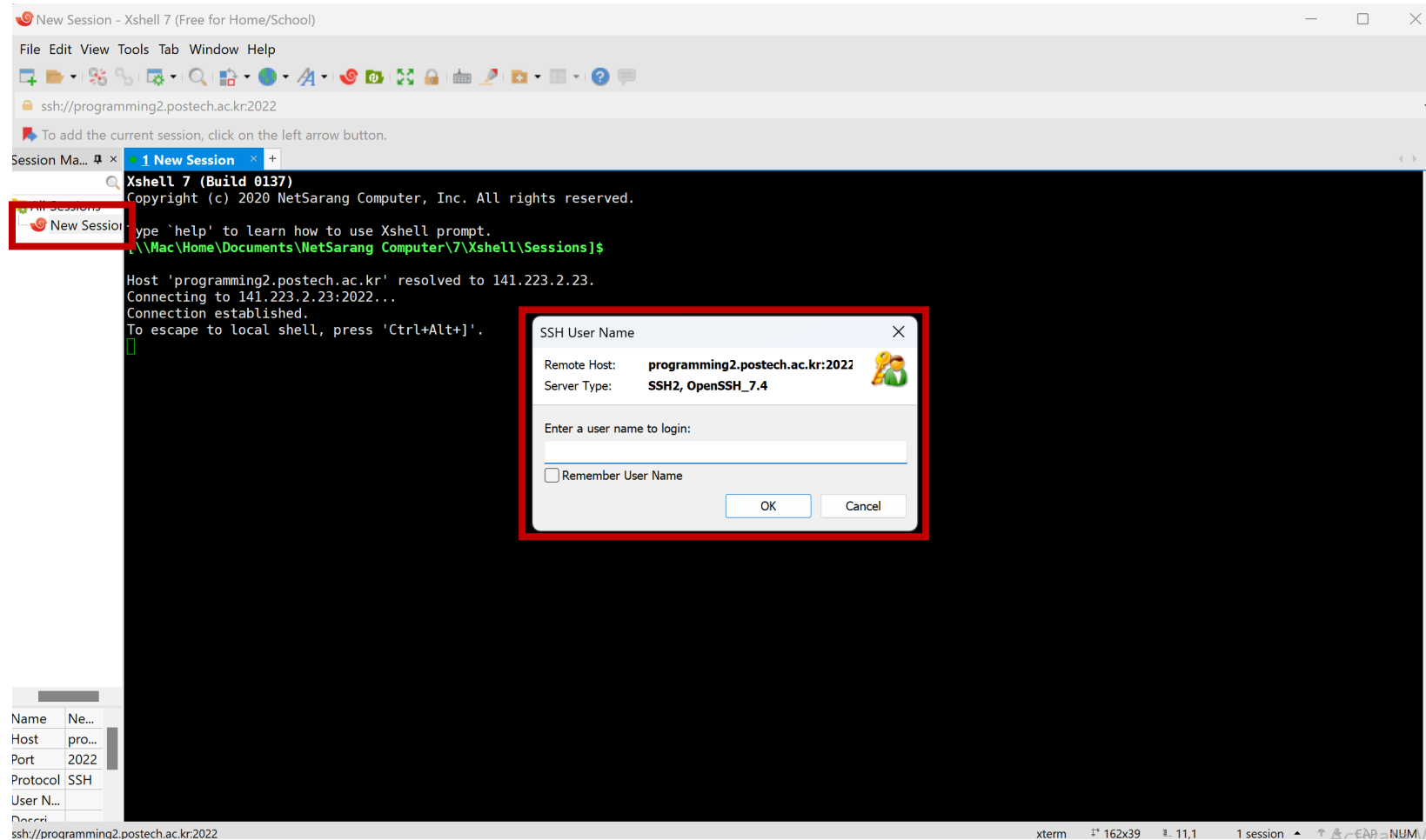
- Check whether the rule is added





# Port Forwarding (XShell Version)

- Connect to the programming server using configured session

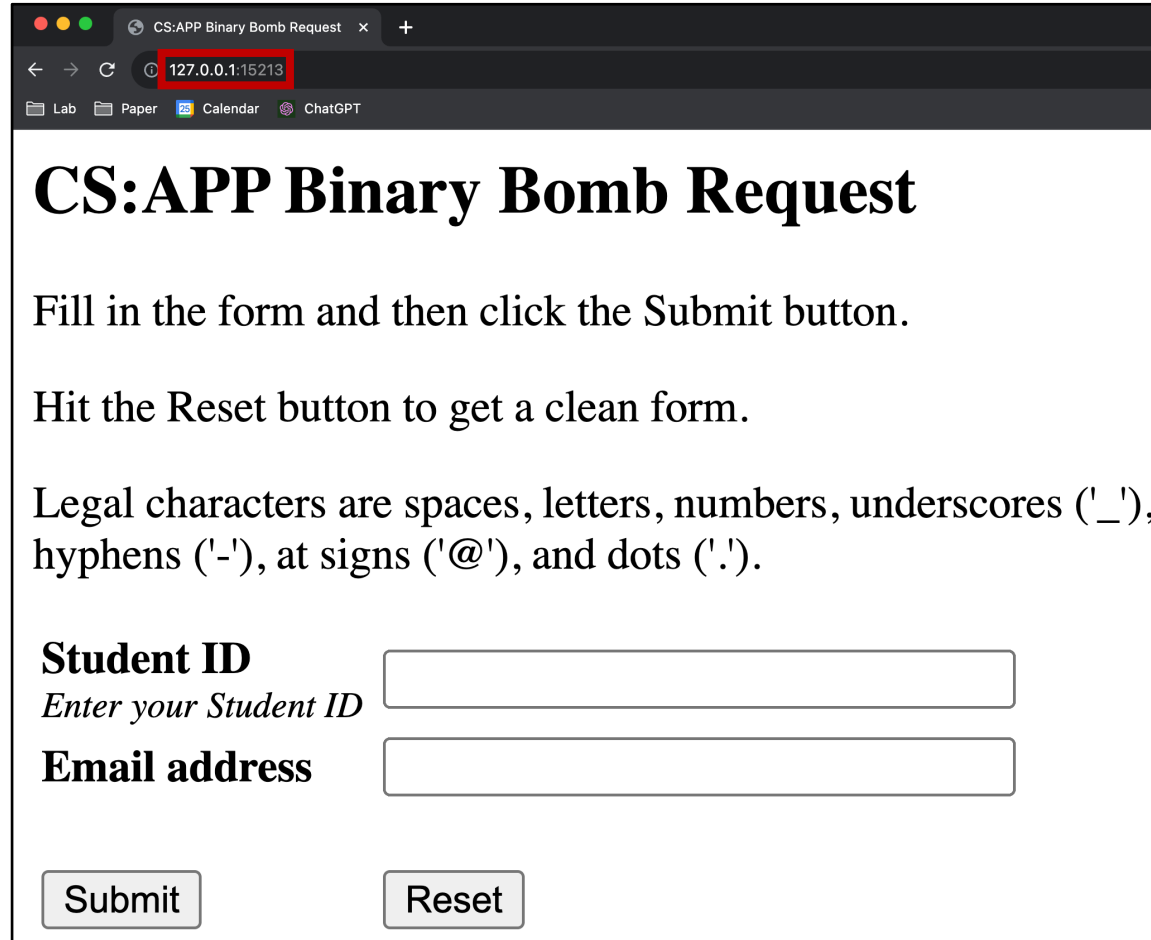


# Accessing the Bomb Server

- You can access the web server **only when the SSH session is alive**
  - This means that you are connecting the remote machine while accessing the web server

# Accessing the Bomb Server

- In your web browser (e.g., Chrome), go to 127.0.0.1:15213



The screenshot shows a web browser window with the title "CS:APP Binary Bomb Request". The address bar displays "127.0.0.1:15213", which is highlighted with a red rectangle. Below the address bar, there are tabs for "Lab", "Paper", "Calendar", and "ChatGPT". The main content area has the heading "CS:APP Binary Bomb Request" in bold. Below the heading, there are three paragraphs of text: "Fill in the form and then click the Submit button.", "Hit the Reset button to get a clean form.", and "Legal characters are spaces, letters, numbers, underscores ('\_'), hyphens ('-'), at signs ('@'), and dots ('.').". Below the text, there are two input fields: "Student ID" with the placeholder text "Enter your Student ID" and "Email address". At the bottom, there are two buttons: "Submit" and "Reset".

**CS:APP Binary Bomb Request**

Fill in the form and then click the Submit button.

Hit the Reset button to get a clean form.

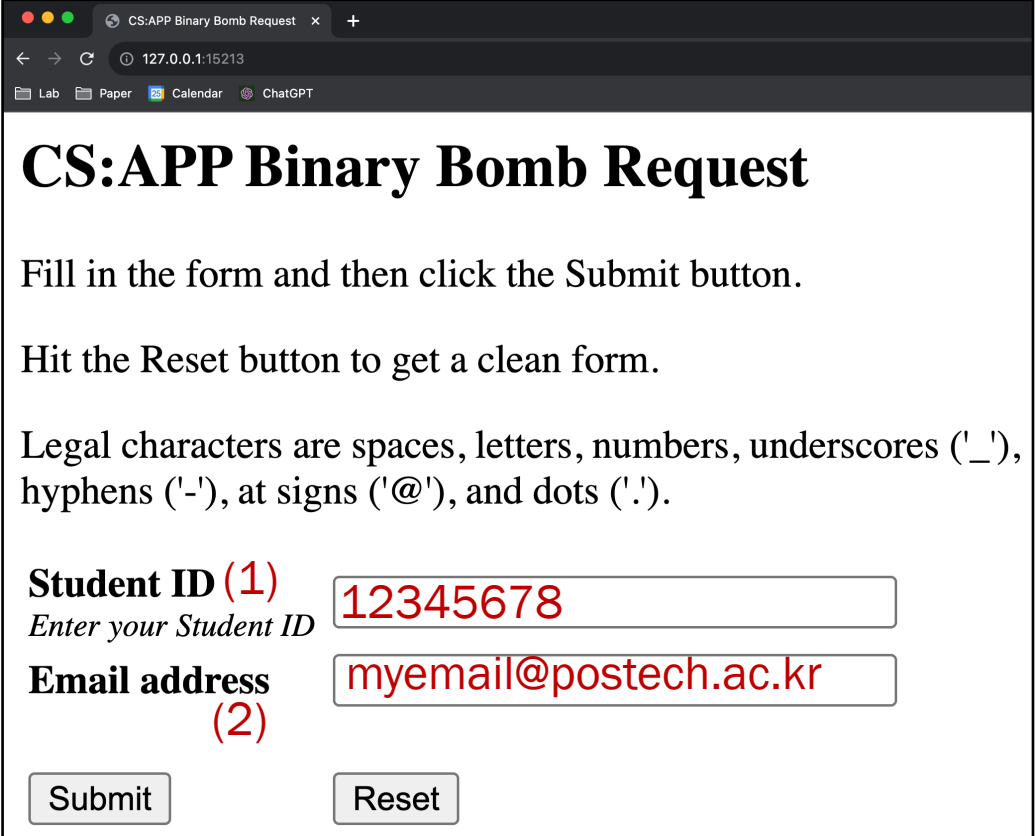
Legal characters are spaces, letters, numbers, underscores ('\_'), hyphens ('-'), at signs ('@'), and dots ('.').

**Student ID**  
*Enter your Student ID*

**Email address**

# Accessing the Bomb Server

- Enter your (1) student ID and (2) POSTECH email address
  - You will download bombk.tar **on the local machine**
  - 'k's are valid only for
    - Your student ID
    - Your POSTECH email address
  - If you downloaded bomb (sumbit) multiple times, **choose the first downloaded bomb**



The screenshot shows a web browser window with the title "CS:APP Binary Bomb Request". The address bar shows "127.0.0.1:15213". The browser tabs include "Lab", "Paper", "Calendar", and "ChatGPT". The main content area has the heading "CS:APP Binary Bomb Request" and instructions: "Fill in the form and then click the Submit button." and "Hit the Reset button to get a clean form." Below this, it lists legal characters: "Legal characters are spaces, letters, numbers, underscores ('\_'), hyphens ('-'), at signs ('@'), and dots ('.')." The form has two input fields: "Student ID (1)" with the value "12345678" and "Email address (2)" with the value "myemail@postech.ac.kr". At the bottom are "Submit" and "Reset" buttons.

**CS:APP Binary Bomb Request**

Fill in the form and then click the Submit button.

Hit the Reset button to get a clean form.

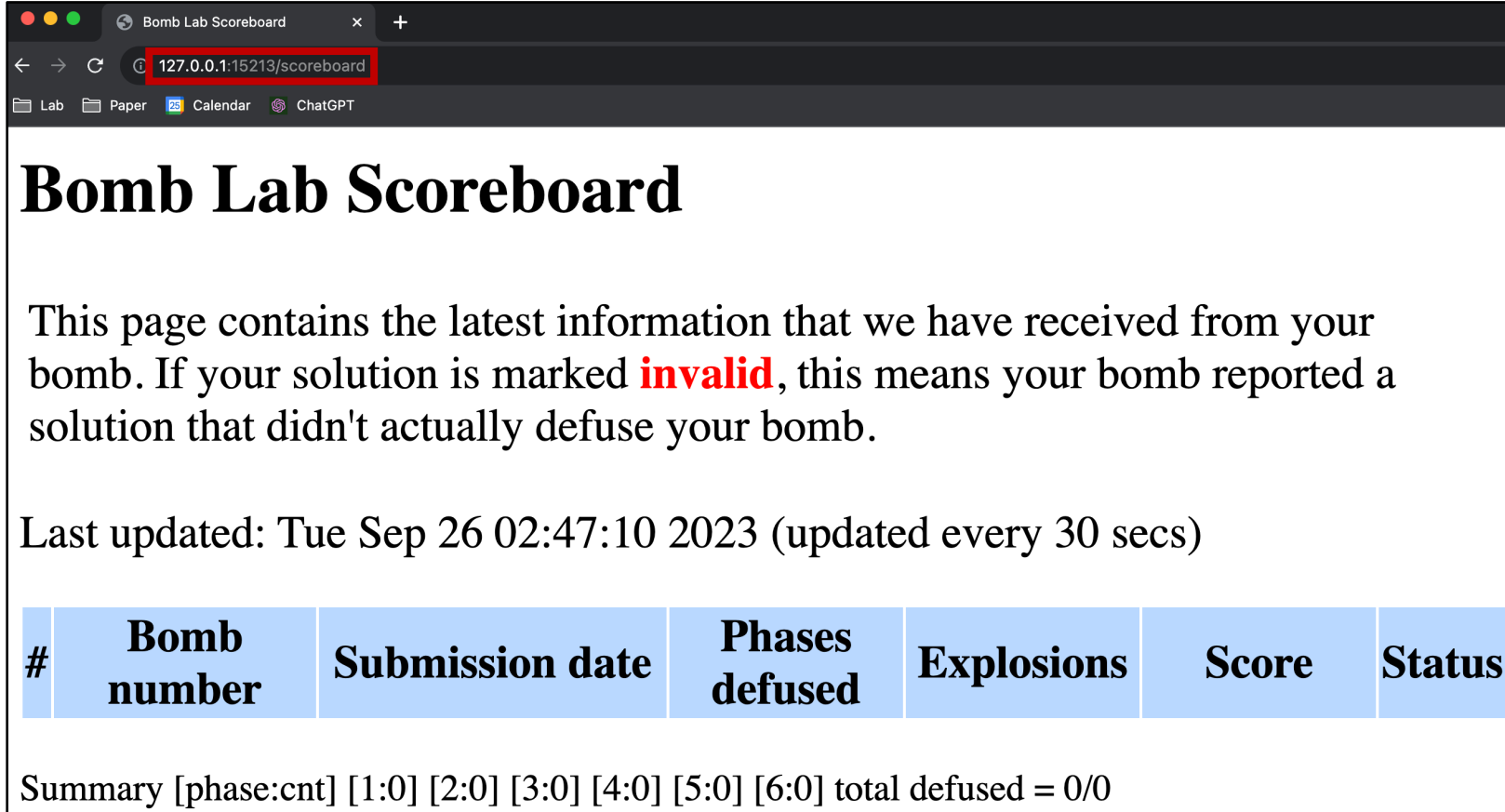
Legal characters are spaces, letters, numbers, underscores ('\_'), hyphens ('-'), at signs ('@'), and dots ('.').

**Student ID (1)**  
*Enter your Student ID*

**Email address (2)**

# Accessing the Bomb Server

- You can check your score in the scoreboard (127.0.0.1:15213/scoreboard)



The screenshot shows a web browser window titled "Bomb Lab Scoreboard". The address bar displays "127.0.0.1:15213/scoreboard", which is highlighted with a red rectangle. Below the browser window, the page content is displayed. It features a large heading "Bomb Lab Scoreboard", a paragraph explaining that the page contains the latest information from the bomb and that a solution marked "invalid" means the bomb did not defuse, and a timestamp "Last updated: Tue Sep 26 02:47:10 2023 (updated every 30 secs)". Below this is a table with columns for "#", "Bomb number", "Submission date", "Phases defused", "Explosions", "Score", and "Status". At the bottom, a summary line shows "Summary [phase:cnt] [1:0] [2:0] [3:0] [4:0] [5:0] [6:0] total defused = 0/0".

## Bomb Lab Scoreboard

This page contains the latest information that we have received from your bomb. If your solution is marked **invalid**, this means your bomb reported a solution that didn't actually defuse your bomb.

Last updated: Tue Sep 26 02:47:10 2023 (updated every 30 secs)

#	Bomb number	Submission date	Phases defused	Explosions	Score	Status
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Summary [phase:cnt] [1:0] [2:0] [3:0] [4:0] [5:0] [6:0] total defused = 0/0

- What happens If I download bomb multiple times?
  - Each bomb has unique ID (e.g., bomb12.tar, bomb25.tar, ...) based on download order.
  - While you can run both bomb12 and bomb25,  
we (TAs) only evaluate the first downloaded bomb (e.g., bomb12.tar).
- Is it possible to run (defuse) bomb on the local machine, and defuse it on the remote machine later?
  - Bomb from the web server cannot be executed on other machines except programming server (see below)

```
root@dev_x86 ~/bomb4 (0.017s)
./bomb
Initialization error: Running on an illegal host [2]
```