COMP7940 Cloud Computing
Lab 1: Python Basic and GitHub Setup

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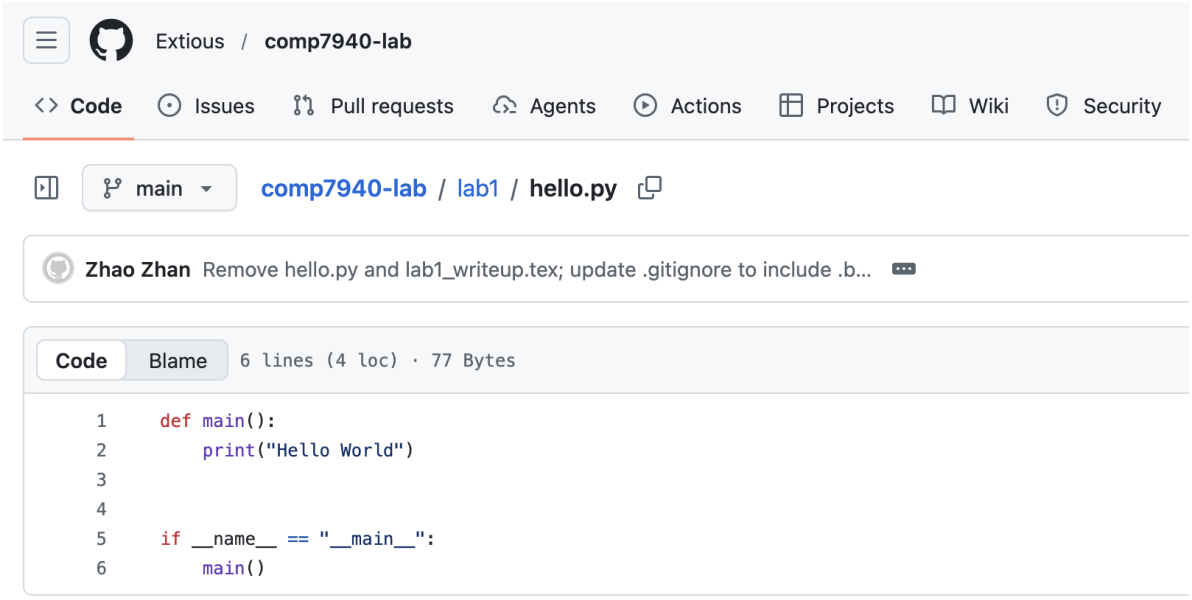
February 1, 2026

1. Clone Command

```
git clone git@github.com:Extious/comp7940-lab.git
```

2. Screenshot of GitHub Repository with `hello.py`



3. Why SSH Keys Are More Secure Than Passwords

- SSH uses public-key (asymmetric) cryptography: only the public key is uploaded; the private key stays on your computer [5, 4, 1].
- The private key is never sent over the network, which reduces the risk of credential interception [4].

- SSH keys can be protected with a local passphrase; even if the key file is copied, it is harder to use without the passphrase [3].
- Keys are resistant to password reuse and common phishing attacks because there is no typed password to steal [1].
- Keys can be revoked/rotated per device without changing other devices' access [2].

4. Python Code (Exercises 1–3)

Exercise 1–3 Solution File

```python
def print_factor(x: int) -> None:
    for i in range(2, x):
        if x % i == 0:
            print(i)


def main() -> None:
    # Exercise 1: Factors
    x = 52633
    for i in range(2, x):
        if x % i == 0:
            print(i)

    # Exercise 2 & 3: Function + list iteration
    l = [52633, 8137, 1024, 999]
    for n in l:
        print(f"Factors of {n}:")
        print_factor(n)


if __name__ == "__main__":
    main()
```

`hello.py`

```python
def main():
    print("Hello World")


if __name__ == "__main__":
    main()
```

References

[1] GitHub Docs. About ssh. Available at `https://docs.github.com/en/authentication/connecting-to-github-with-ssh/about-ssh`, 2026. Accessed: 2026-02-01.

[2] GitHub Docs. Adding a new ssh key to your github account. Available at https://docs.github.com/en/authentication/connecting-to-github-with-ssh/adding-a-new-ssh-key-to-your-github-account, 2026. Accessed: 2026-02-01.

[3] OpenBSD. ssh-keygen(1) — openbsd manual pages. Available at https://man.openbsd.org/ssh-keygen, 2026. Accessed: 2026-02-01.

[4] Tatu Ylonen and Chris Lonvick. The secure shell (ssh) authentication protocol. RFC 4252, IETF, January 2006. Accessed: 2026-02-01.

[5] Tatu Ylonen and Chris Lonvick. The secure shell (ssh) protocol architecture. RFC 4251, IETF, January 2006. Accessed: 2026-02-01.