A. Functional Requirement:

- An echo server program
  - Can listen to UDP messages on specific IP and port and reply a same message back to the client.
- A client program
  - Can send a UDP message to your server and display the echo message. (message, IP and port are configurable)
  - Support max-retry option. For example, if max-retry = 10, the client will resend message at most 10 times. The interval between each retry should follow the exponential backoff algorithm:

    Reference: https://www.baeldung.com/resilience4j-backoff-jitter
    multiplier = 2
    base = 500ms
    max wait_interval = 8s

  - Exit program with exit code 0 after the echo message is received
  - Exit program with exit code 1 if reach max-retry

B. Non-Functional Requirement:

- Use C language
- Use POSIX library (reference: https://zh.wikipedia.org/zh-tw/C_POSIX_library)
- Upload your project to Github
- Explain anything reviewer needs to know in README.md.
- Can run in Debian 10 (nice-to-have)
- Video demo

C. References

C.1. Tips For Testing in Debian

Assume your project folder is /home/user/project
You can easily launch a Debian 10 linux server and mount your project into it at same time by:

```
root@your-pc:/> docker run -it -v /home/user/project:/source debian:10
root@debian:/> cd /source
root@debian:/source> // here is your project folder, you can compile and run your program now.

Note: If you want to install anything (ex: gcc), please run "apt-get update" first. After that, you can install gcc by "apt-get install gcc"
```