

Project Specification for

CS400 Advance Windows Network Programming

School of Computer Science & Cybersecurity, Communication University of China

September 18, 2019

due September 23 2019

Tools and Platform

The following tools and platforms are to be used in the project:

Operating System: Microsoft Windows

Language: C/C++

Development Tools: Microsoft Visual Studio 201x

Project 1 – Frame Parser

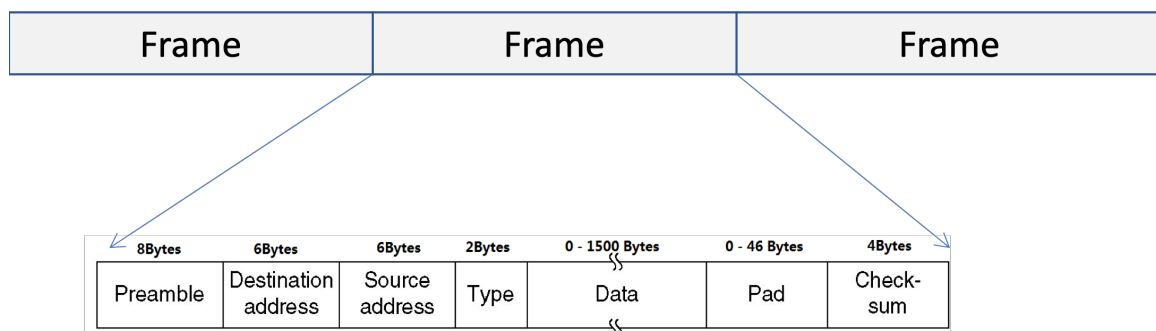
A. Overview

In this project, students will develop a simple program for Ethernet II (RFC 894) frame testing and parsing.

B. Specification

Student can download a file which contains pseudo Ethernet II frames with a parser program on the course website.

The file contains 3 pseudo frames; the following diagram shows the file structure:



1. Student should develop a program to read the file and parse the frames out.
2. You are given an Ethernet II frame for test case on the course web (advanced network programming online course on <http://tlc.cuc.edu.cn/>).
3. The Type field may be 0x0800, but the data field may not be a real IP packet (can be any data).
4. Support CRC-32 as FCS (Frame Check Sum).

Example Parser output:

```
D:\>FrameParser testFrame
Frame#: 1
Preamble: AA AA AA AA AA AA AA
Start: AB
Destination Address: 00-0D-88-47-58-2C
Source Address: 00-0D-88-15-FA-E4
Type: 08 00
Data: This is Frame #1.
FCS: 0x 90a1af78
CRC32 Check Correct !
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Frame#: 2
Preamble: AA AA AA AA AA AA AA
Start: AB
Destination Address: 00-00-0C-11-7F-36
Source Address: 00-0D-88-26-E3-B4
Type: 08 00
Data: This ks Frame #2.
FCS: 0x e03bb322
CRC32 Check Wrong !
Recalculate Result: 0x eb659421
-----

Frame#: 3
Preamble: AA AA AA AA AA AA AA
Start: AB
Destination Address: 00-0C-F1-16-6D-26
Source Address: 00-0D-88-41-E3-DF
Type: 08 00
Data: This is Frame #3.
FCS: 0x 2863d36e
CRC32 Check Correct !
-----

Analysis Finished!
```

Note:

- A. All functions should be tested on different machines.
- B. Submissions that do not use C/C++ will not be accepted.
- C. If the submitted source code can not be compiled by Visual Studio, **your grade** will be deducted
- D. Late submission will be punished with grade deductions