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Network Programming Mini Project

# CATCH THE NUMBER

## 1. Game Introduction

Two player have only one a number pad (5x5) with 25 numbers from 1 to 25 in random order, and the game rule is quite simple: the faster, the winner. In other words, if you can catch more number in number pad than the competitor, you will be winner.

## 2. Execution Environment

- Client/Server: C
- Compiler: gcc
- OS: Ubuntu
- (GUI: gtk)

## 3. Network Protocol

We choose the Client/Server model for this game.

Each packet is a character buffer with calculated length and have a structure:

- First 4 bytes : defined message id
- Next 4 bytes : the length of text part of message
- Rest : content of message

Before send and after receive a message, we encode and decode the buffer according to defined message id and based on message id we have different way to handle it.

## 4. Demo

```

netpro % ./client localhost 12345
Host address: localhost
Port: 12345
Connect Successfully !
h
Host game successfully!
Player joined. Send board now.
Start !!!
+---+---+---+---+
| 18| 13| 17| 20| 4 |
+---+---+---+---+
| 25| 15| 14| 23| 5 |
+---+---+---+---+
| 10| 2 | 21| 9 | 12|
+---+---+---+---+
| 8 | 16| 3 | 24| 11|
+---+---+---+---+
| 7 | 6 | 19| 1 | 22|
+---+---+---+---+

YOUR COLORS: BLUE
NEXT: 1
+---+---+---+---+
| 18| 13| 17| 20| 4 |
+---+---+---+---+
| 25| 15| 14| 23| 5 |
+---+---+---+---+
| 10| 2 | 21| 9 | 12|
+---+---+---+---+
| 8 | 16| 3 | 24| 11|
+---+---+---+---+
| 7 | 6 | 19| 1 | 22|
+---+---+---+---+

YOUR COLORS: BLUE
NEXT: 2

YOUR COLORS: RED
NEXT: 4
+---+---+---+---+
| 18| 13| 17| 20| 4 |
+---+---+---+---+
| 25| 15| 14| 23| 5 |
+---+---+---+---+
| 10| 2 | 21| 9 | 12|
+---+---+---+---+
| 8 | 16| 3 | 24| 11|
+---+---+---+---+
| 7 | 6 | 19| 1 | 22|
+---+---+---+---+

YOUR COLORS: RED
NEXT: 5
+---+---+---+---+
| 18| 13| 17| 20| 4 |
+---+---+---+---+
| 25| 15| 14| 23| 5 |
+---+---+---+---+
| 10| 2 | 21| 9 | 12|
+---+---+---+---+
| 8 | 16| 3 | 24| 11|
+---+---+---+---+
| 7 | 6 | 19| 1 | 22|
+---+---+---+---+

YOUR COLORS: RED
NEXT: 6
Enemy resigned. You win !

```

Player 1

Player 2

## 5. Evaluate

Succeeded point:

- Design the network protocol suitable with the game
- Handle the conflict communication

Failed point:

- Have not completed the connection between GUI and main Program yet

## 6. Description of TeamWork

- Source Management: github  
<https://github.com/kienmetalrock/NePro2011-aki>
- Assign tasks:

Nguyen Anh Tien	Do Trung Kien
- Write main server, main client	- Write GUI by gtk (C), write client
- Design network model and protocol - Connect client/server code with GUI - Debug - Program Test	