**[ Android 숫자 야구 게임 ]**

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**① Architecture & Data Structure**

**Android Client 1 (Java)**

**Client 1**

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**Client 1**

**Protocol Buffer**

**Login Server (Proactor IOCP)**

**DB ( MySQL )**

**DB Manager**

**Thread**

**Process (C++ Proactor IOCP)**

df

**Client Manager**

**Thread**

**Shared Data**

**Browser ( HTML 5 )**

**Monitering Server (언어미정)**

**Struct < Player >**

**1. ID**

**2. State**

**3. Room Number**

**Struct < Status >**

**1. Win / Lose Cnt**

**2. Strike / Ball Cnt**

**3. Out Cnt**

**Struct < Room >**

**1. State**

**2. Room Number**

**3. Joinners ( str [2] )**

**4. Round Cnt**

**5. Score (int, int)**

**6. Rand Num (int, int)**

**Struct < Record >**

**1. Time Stamp**

**2. Connected User Cnt**

**Data Structures**

**②Protocol**

**namespace PACKET\_TYPE**

**{**

**enum C2LS**

**{**

**LOGIN\_REQUEST = 0,**

**ACCOUNT\_CREATE,**

**END**

**};**

**enum LS2C**

**{**

**LOGIN\_SUCCESS = C2LS::END,**

**LOGIN\_FAILED,**

**ACCOUNT\_CREATE\_SUCCESS,**

**ACCOUNT\_CREATE\_FAILED,**

**END**

**};**

**enum C2S**

**{**

**ROOM\_CREATE = LS2C::END,**

**ROOM\_JOIN,**

**ROOM\_LEAVE,**

**REQUEST\_INGAME\_START,**

**SEND\_BASEBALL\_NUMBER,**

**END**

**};**

**enum S2C**

**{**

**ROOM\_CREATE\_SUCCESS = C2S::END,**

**ROOM\_CREATE\_FAILED,**

**ROOM\_JOIN\_SUCCESS,**

**ROOM\_JOIN\_FAILED,**

**ROOM\_LEAVE\_SUCCESS,**

**ROOM\_LEAVE\_FAILED,**

**INGAME\_START\_SUCCESS,**

**INGAME\_START\_FAIELD,**

**RECEIVE\_BASEBALL\_NUMBER\_SUCCESS,**

**RECEIVE\_BASEBALL\_NUMBER\_FAIELD,**

**INGAME\_GIVE\_TURN,**

**INGAME\_WAIT\_TURN,**

**INGAME\_END,**

**END**

**};**

**};**

**namespace FAIL\_SIGNAL**

**{**

**enum ACCOUNT**

**{**

**NO\_EXIST,**

**ALREADY\_EXIST,**

**WRONG\_PASSWORD,**

**END**

**};**

**enum ROOM**

**{**

**ALREADY\_EXIST = ACCOUNT::END,**

**FULL\_ROOM,**

**END**

**};**

**enum IN\_GAME**

**{**

**NO\_EXIST\_OPPONENT = ROOM::END,**

**EXIST\_REPETITION\_NUMBER,**

**END**

**};**

**};**

**/// ---------- CLIENT <-> LOGIN SERVER ----------- ///**

**struct CLS\_LOGIN\_REQUEST**

**{**

**unsigned short TYPE;**

**char ID[MAX\_ID\_SIZE];**

**char PASSWORD[MAX\_PASSWORD\_SIZE];**

**};**

**struct CLS\_ACCOUNT\_CREATE**

**{**

**unsigned short TYPE;**

**char ID[MAX\_ID\_SIZE];**

**char PASSWORD[MAX\_PASSWORD\_SIZE];**

**};**

**struct LSC\_LOGIN\_SUCCESS**

**{**

**unsigned short TYPE;**

**};**

**struct LSC\_LOGIN\_FAILED**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**struct LSC\_ACCOUNT\_CREATE\_SUCCESS**

**{**

**unsigned short TYPE;**

**};**

**struct LSC\_ACCOUNT\_CREATE\_FAILED**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**/// ---------- CLIENT <-> GAME SERVER ----------- ///**

**struct CS\_ROOM\_CREATE**

**{**

**unsigned short TYPE;**

**unsigned short ROOM\_NUM;**

**char ID[MAX\_ID\_SIZE];**

**};**

**struct CS\_ROOM\_JOIN**

**{**

**unsigned short TYPE;**

**unsigned short ROOM\_NUM;**

**char ID[MAX\_ID\_SIZE];**

**};**

**struct CS\_ROOM\_LEAVE**

**{**

**unsigned short TYPE;**

**unsigned short ROOM\_NUM;**

**char ID[MAX\_ID\_SIZE];**

**};**

**struct CS\_REQUEST\_INGAME\_START**

**{**

**unsigned short TYPE;**

**unsigned short ROOM\_NUM;**

**char ID[MAX\_ID\_SIZE];**

**};**

**struct CS\_SEND\_BASEBALL\_NUMBER**

**{**

**unsigned short TYPE;**

**unsigned short ROOM\_NUM;**

**char ID[MAX\_ID\_SIZE];**

**unsigned short BASEBALL\_NUM;**

**};**

**struct SC\_ROOM\_CREATE\_SUCCESS**

**{**

**unsigned short TYPE;**

**};**

**struct SC\_ROOM\_CREATE\_FAILED**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**struct SC\_ROOM\_JOIN\_SUCCESS**

**{**

**unsigned short TYPE;**

**};**

**struct SC\_ROOM\_JOIN\_FAILED**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**struct SC\_ROOM\_LEAVE\_SUCCESS**

**{**

**unsigned short TYPE;**

**};**

**struct SC\_ROOM\_LEAVE\_FAILED**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**struct SC\_INGAME\_START\_SUCCESS**

**{**

**unsigned short TYPE;**

**};**

**struct SC\_INGAME\_START\_FAIELD**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**struct SC\_RECEIVE\_BASEBALL\_NUMBER\_SUCCESS**

**{**

**unsigned short TYPE;**

**unsigned short JUDGE\_STATUS;**

**};**

**struct SC\_RECEIVE\_BASEBALL\_NUMBER\_FAIELD**

**{**

**unsigned short TYPE;**

**unsigned short FAIL\_SIGNAL;**

**};**

**struct SC\_GIVE\_TURN**

**{**

**unsigned short TYPE;**

**};**

**struct SC\_WAIT\_TURN**

**{**

**unsigned short TYPE;**

**};**

**struct SC\_INGAME\_END**

**{**

**unsigned short TYPE;**

**bool IsWIN;**

**};**

**③ DB Schema**

[1] DB 테이블 1 ( Player - statistical information )

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **플레이어**  **넘버**  **(기본 키)** | 승리 횟수 | 패배 횟수 | 스트라이크  횟수 | 볼 횟수 | 아웃 횟수 |

[2] DB 테이블 2 ( Player - security information )

|  |  |  |
| --- | --- | --- |
| **플레이어**  **넘버**  **(기본 키)** | ID | 패스워드 |

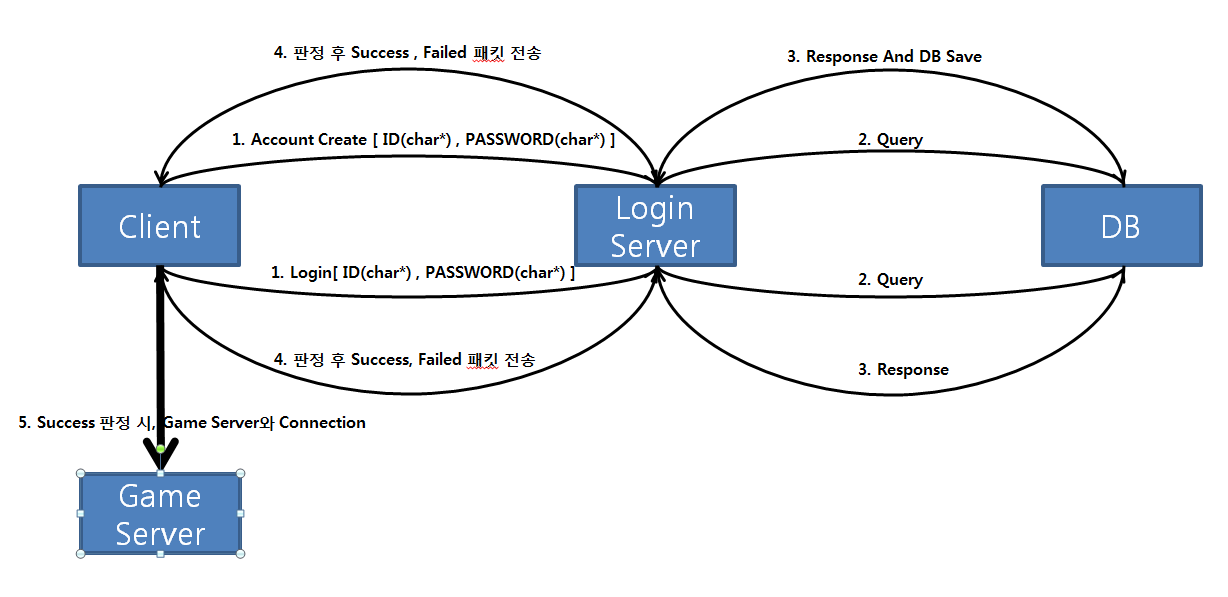
[3] DB 테이블 3 ( Room ) cf. 방 번호 -1인 방은 로비

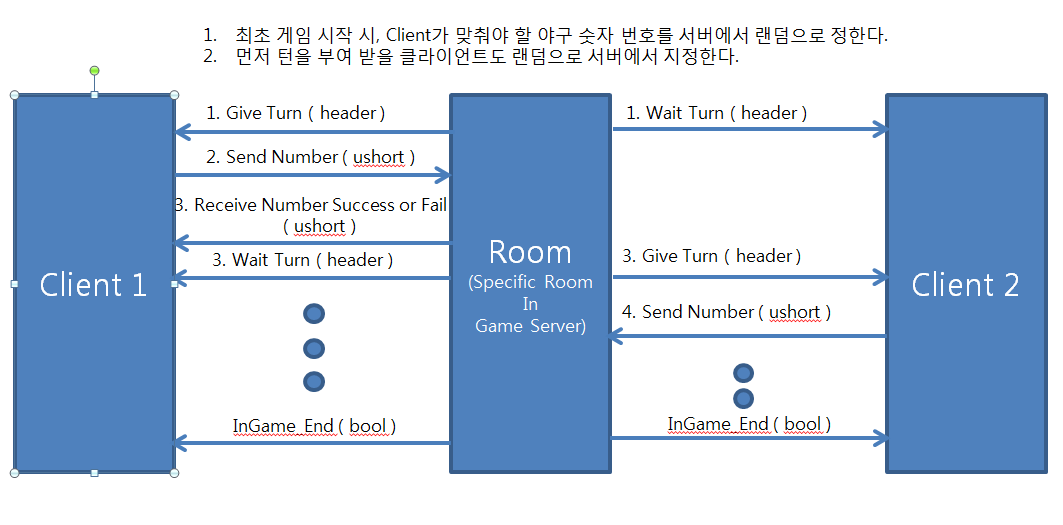
|  |  |  |  |
| --- | --- | --- | --- |
| **방 번호**  **(기본 키)** | 접속자 ID목록 | 회차 넘버 | 스코어  기록 |

[4] DB 테이블 4 ( Cyclical Record )

|  |  |  |
| --- | --- | --- |
| **플레이어 넘버**  **(기본 키)** | 타임 스탬프 | 접속자  명수 |

**④ Data Flow Chart between Client and Client Manager**

● 최초 Client – Login Server 연결 시,

● In-Game Flow