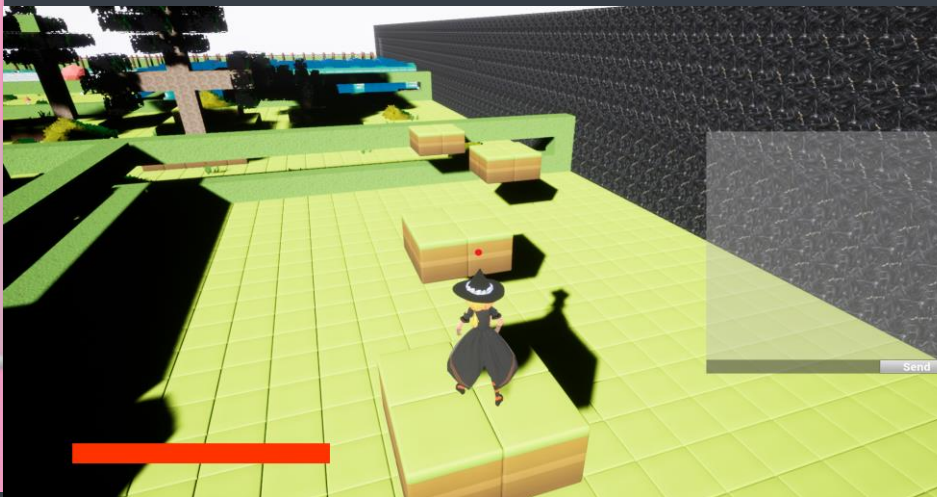
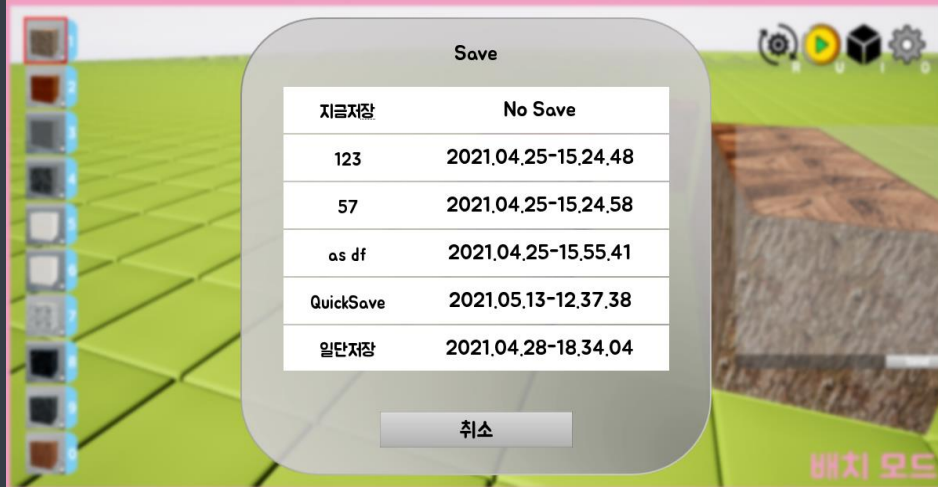
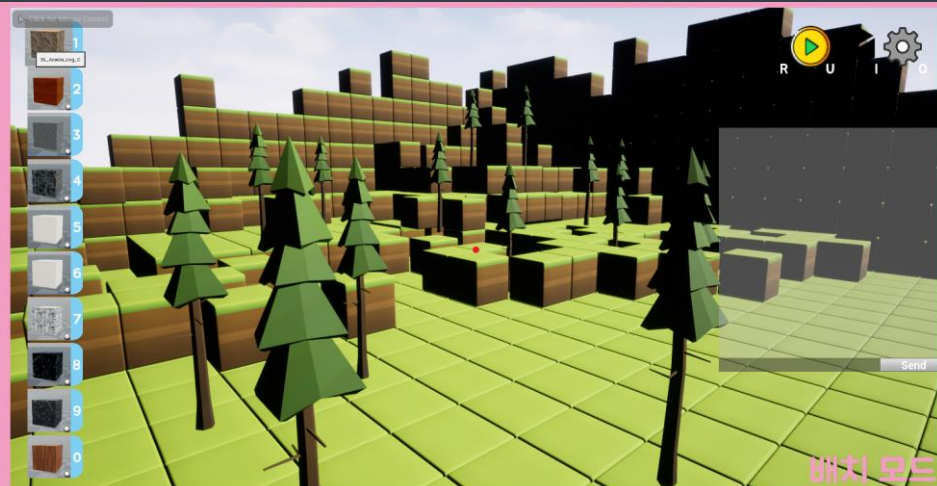
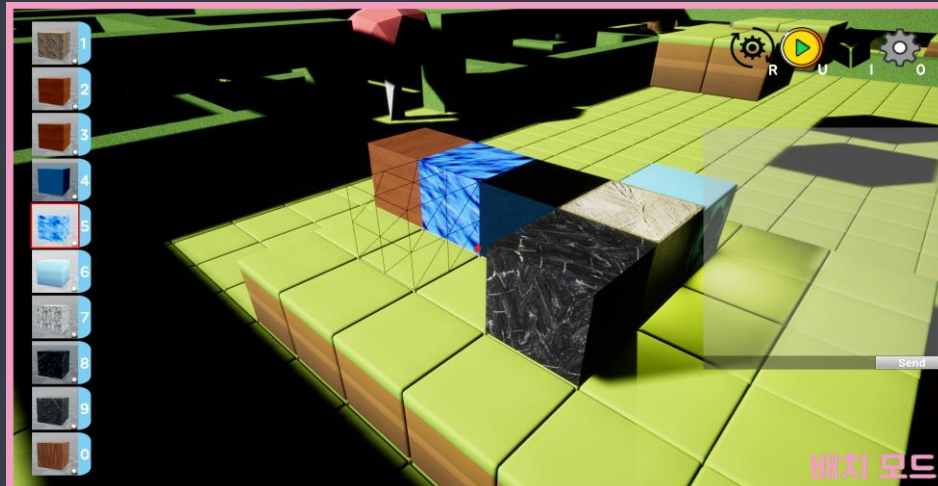


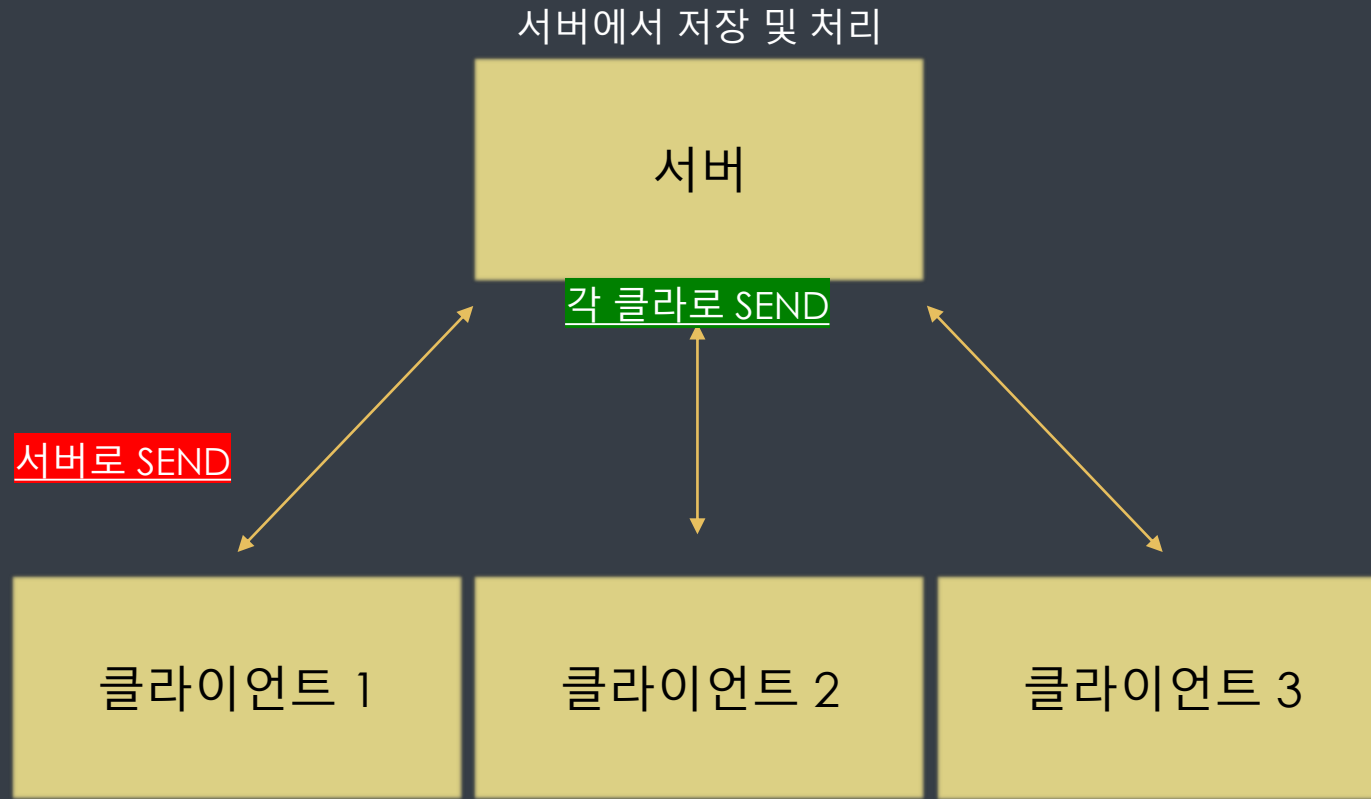
# 서버 포트폴리오

## WITCH OF TIME

- 제작 목적: 언리얼 엔진을 이용한 3D게임 및 서버 제작 경험
- 개발 기간: 2020년 12월 부터~ 2021년 8월 까지 약 8개월
- 사용도구: UNREAL ENGINE 4.25.4, VISUAL STUDIO 2019
- 프로토콜: TCP/IP -> IOCP
- 개발 언어: C++
- 개발 인원: 3인
- 담당 업무: 기본적인 서버 시스템 구현
  - 블록 배치, 삭제, 커맨드, 로드 • 캐릭터 이동 등의 기본적인 서버 연동 및 클라이언트 적용
  - 간단한 채팅 기능 및 UI 구현,

## WITCH OF TIME - 게임 스크린샷





클라이언트에서 서버에 SEND  
서버에서 받은 정보를 저장 및 처리  
서버에서 모든 클라이언트에 처리한 정보를 SEND

## 예시 - 블록

```
void AClient::send_block_packet(int blockindex,
    float block_pos_x,
    float block_pos_y,
    float block_pos_z)
{
    BlockPacket blockpacket;
    blockpacket.blockindex = blockindex;
    blockpacket.blocklocation_x = block_pos_x;
    blockpacket.blocklocation_y = block_pos_y;
    blockpacket.blocklocation_z = block_pos_z;

    send_packet(&blockpacket);
}
```

클라이언트  
SEND

```
case BLOCK:
{
    auto cast = reinterpret_cast<BlockPacket*>(buffer);

    BlockPacket blocklistpacket;
    blocklistpacket.blockindex = cast->blockindex;
    if (blocklistpacket.blockindex == 76)
    {
        start_x = cast->blocklocation_x;
        start_y = cast->blocklocation_y;
        start_z = cast->blocklocation_z;

        blocklistpacket.blocklocation_x = cast->blocklocation_x;
        blocklistpacket.blocklocation_y = cast->blocklocation_y;
        blocklistpacket.blocklocation_z = cast->blocklocation_z;

        Broadcast_Packet(&blocklistpacket);

        break;
    }

    int blockid = get_new_block_id();
    blocklistpacket.block_id = blockid;

    blocklistpacket.blocklocation_x = cast->blocklocation_x;
    blocklistpacket.blocklocation_y = cast->blocklocation_y;
    blocklistpacket.blocklocation_z = cast->blocklocation_z;

    objects[blockid].block_index = cast->blockindex;
    objects[blockid].x = cast->blocklocation_x;
    objects[blockid].y = cast->blocklocation_y;
    objects[blockid].z = cast->blocklocation_z;

    if (cast->blockindex == 68 || cast->blockindex == 75)
    {
        // 몬스터 블럭일 경우
        objects[blockid].hp = 100;
        monster_block_id[blockid] = cast->blockindex;
    }

    Broadcast_Packet(&blocklistpacket);
}
```

서버에서  
처리 후  
SEND

```
switch (ex_over->m_op)
{
case OP_RECV: {
    unsigned char* packet_ptr = ex_over->m_packetbuf;
    int num_data = num_bytes + m_prev_size;
    int packet_size = packet_ptr[0];

    while (num_data >= packet_size)
    {
        process_packet(key, packet_ptr);
        num_data -= packet_size;
        packet_ptr += packet_size;
        if (0 >= num_data) break;
        packet_size = packet_ptr[0];
    }

    m_prev_size = num_data;
    if (num_data != 0) memcpy(ex_over->m_packetbuf, packet_ptr, num_data);

    do_recv(key);
}

switch (p_buf[4])
{
case BLOCK:
{
    auto cast = reinterpret_cast<BlockPacket*>(p_buf);

    spawn_block(cast->blockindex,
        cast->block_id,
        cast->blocklocation_x,
        cast->blocklocation_y,
        cast->blocklocation_z);
}
}
```

클라이언트  
RECV 및  
적용

클라이언트에서 서버에 SEND  
서버에서 받은 정보를 저장 및 처리  
서버에서 모든 클라이언트에 처리한 정보를 SEND