네트워크 게임 프로그래밍 Term 프로젝트

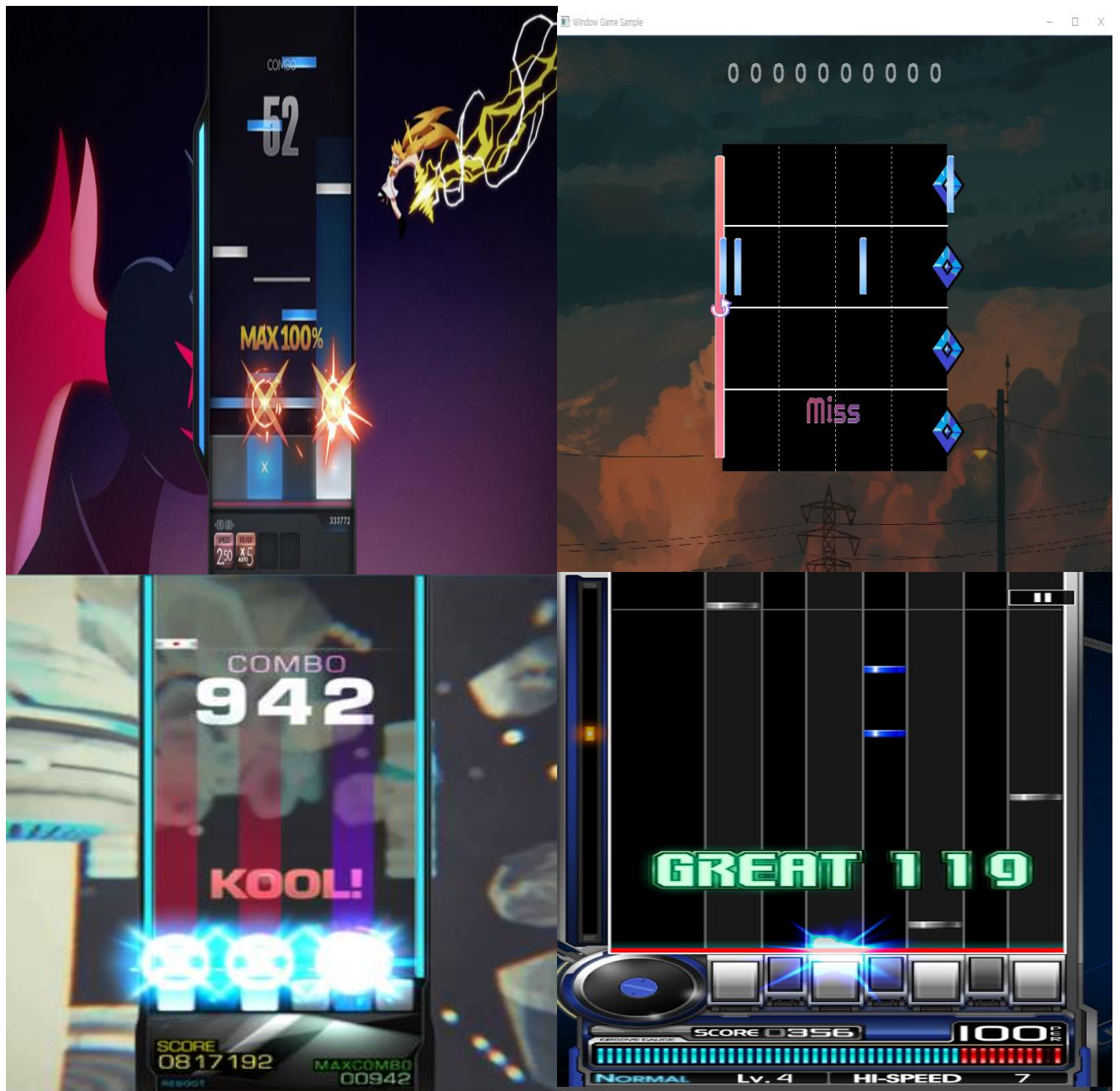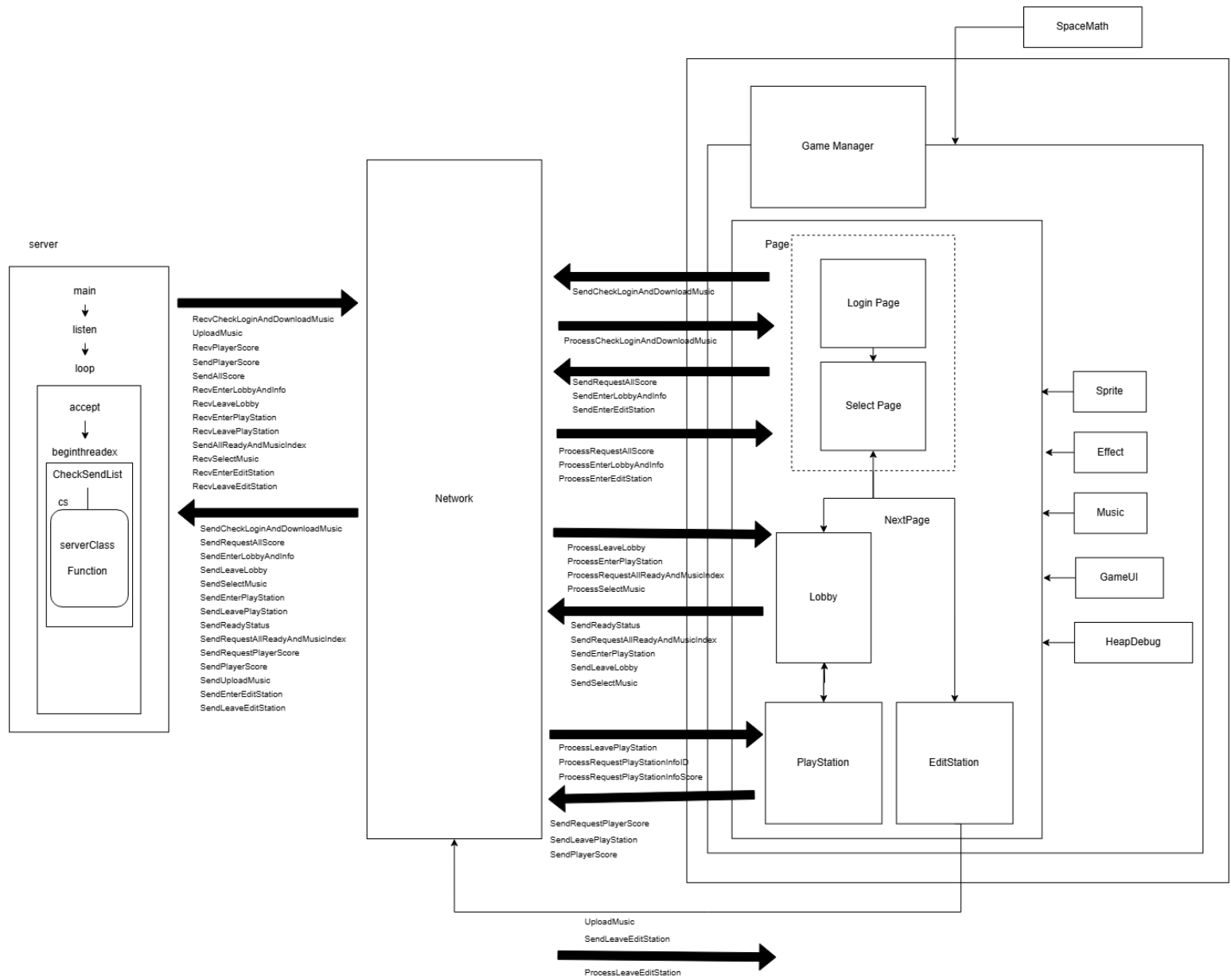2017180039정극훈

2018180034이창민

게임 소개

장르: 리듬게임

개발자: 이창민

과목: 윈도우 프로그래밍

게임 설명: 라인형 리듬게임 방식을 채택하였고, 게임만의 특색으로 게임 플레이 영역이 회전하는 기믹을 추가했습니다.

게임 내에서 에디트 모드를 구현하여 본인이 원하는 노래를 넣어서 직접 패턴을 만들어 볼 수 있는 기능을 사용할 수 있습니다. 에디트 모드에서는 본인이 만든 패턴을 즉시 확인할 수 있게 게임과 똑같은 화면을 그대로 넣어두어 제작의 편의성을 높였습니다.

High Level Design

SpaceMath

Game Manager

server

main
↓
listen
↓
loop

accept
↓
beginthreadex

CheckSendList

cs

serverClass

Function

Network

Page

Login Page

Select Page

NextPage

Lobby

PlayStation

EditStation

Sprite

Effect

Music

GameUI

HeapDebug

RecvCheckLoginAndDownloadMusic
UploadMusic
RecvPlayerScore
SendPlayerScore
SendAllScore
RecvEnterLobbyAndInfo
RecvLeaveLobby
RecvEnterPlayStation
RecvLeavePlayStation
SendAllReadyAndMusicIndex
RecvSelectMusic
RecvEnterEditStation
RecvLeaveEditStation

SendCheckLoginAndDownloadMusic
SendRequestAllScore
SendEnterLobbyAndInfo
SendLeaveLobby
SendSelectMusic
SendEnterPlayStation
SendLeavePlayStation
SendReadyStatus
SendRequestAllReadyAndMusicIndex
SendRequestPlayerScore
SendPlayerScore
SendUploadMusic
SendEnterEditStation
SendLeaveEditStation

SendCheckLoginAndDownloadMusic

ProcessCheckLoginAndDownloadMusic

SendRequestAllScore
SendEnterLobbyAndInfo
SendEnterEditStation

ProcessRequestAllScore
ProcessEnterLobbyAndInfo
ProcessEnterEditStation

ProcessLeaveLobby
ProcessEnterPlayStation
ProcessRequestAllReadyAndMusicIndex
ProcessSelectMusic

SendReadyStatus
SendRequestAllReadyAndMusicIndex
SendEnterPlayStation
SendLeaveLobby
SendSelectMusic

ProcessLeavePlayStation
ProcessRequestPlayStationInfoID
ProcessRequestPlayStationInfoScore

SendRequestPlayerScore
SendLeavePlayStation
SendPlayerScore

UploadMusic
SendLeaveEditStation

ProcessLeaveEditStation

Low Level Design

GameManager	
int	OBJ_MAX
GameObject*	objPool[]

GameManager
void Clear()
void InitMusic()
void AddObject(GameObject* const go)
void DeleteObject(GameObject* const go)
GameObject* GetGameObject(const int& index)

Page	
bool	checkInitialize
bool	checkGameStart
char	selectCommand
vector<MusicData>	musicDataSet

Page
void FirstInit()
void Select(char menuChar)
void NextPage()
void GameStart()
void AddMusicData(const string& musicName, const string& dataName)
void SendCheckLogin(char* loingID, char* password)
void DownloadMusic()
void SendRequestAllScore()
void SendEnterLobby()
void SendEnterEditStation()

Lobby	
LobbyInfo	lobbyInfo
char	userIndex

LobbyInfo	
char*	id[4]
bool	isReady[4]
unsigned int	musicIndex

Lobby
void SendReadyStatus()
void SendRequestAllReadyAndMusicIndex()
void SendEnterPlayStation()
void SendLeaveLobby()
void SendSelectMusic()
void PrintLobbyInfo()

PlayStation	
bool	isPlaying
float	Time
unsigned int	score
unsigned int	combo
unsigned int	maxCombo
ROTPOS	rotation
Note*	noteArray
char*	id[4]
unsigned int	userScore[4]

PlayStation
void FirstInit();
void Rim()
void Hit(char pan, Note note)
void GoPosition(float position)
void LoadMusic(const char* musicName)
void LoadData(const char* filename)
void Arrange()
DrawNote(HDC hdc, shp::rect4f playloc, Note note)
void SendRequestPlayerScore()
void LeavePlayStation()
void SendPlayerScore()
void PrintPlayStationInfo()
void ShowResult()

EditStation	
int	Tempo
float	Time
bool	checkInitialize
float	MaxShowTime
NOTE_TYPE	AddNoteType
vector<Note>	EditNote
int	NoteSelected
PlayStation*	playStation
char*	musicName
char*	noteName

EditStation
void Arrange()
int FindNote(float time, int pos)
void LoadData(const char* str)
void SaveData(const char* str)
void FirstInit()
void GetDialogData(float delta)
void UploadMusic()
void SendLeaveEditStation()

Network	
SOCKET	n_socket
Static Network*	n_pInst

Network
static Network* GetInst()
bool Init()
bool Connect()
void SendCheckLogin(char* id, char* password)
void ProcessCheckLogin()
void SendDownloadMusic()
void ProcessDownloadMusic()
void SendRequestAllScore()
void ProcessRequestAllScore()
void SendEnterLobby()
void ProcessEnterLobby()
void SendEnterEditStation()
void ProcessEnterEditStation()
void SendRequestLobbyInfo()
void ProcessRequestLobbyInfo()
void SendReady()
void SendCancleReady()
void SendRequestAllReadyAndMusicindex()
void ProcessRequestAllReadyAndMusicindex()
void SendLeaveLobby()
void ProcessLeaveLobby()
void SendGameStart()
void ProcessGameStart()
void SendEnterPlayStation()
void ProcessEnterPlayStation()
void SendSelectMusic(unsigned int musicIndex)
void ProcessSelectMusic()
void SendRequestPlayStationInfoID()
void ProcessRequestPlayStationInfoID()
void SendRequestPlayStationInfoScore()
void ProcessRequestPlayStationInfoScore()
void SendLeavePlayStation()
void ProcessLeavePlayStation()
void SendPlayerScore(unsigned int score)
void SendLeaveEditStation()
void ProcessLeaveEditStation()
void SendUploadMusic(char* music, char* note)

ServerMain

vector<MusicData>	musicDataSet
vector<LoginInfo>	loginInfoSet
vector<UserInfo>	userInfoSet
vector<LobbyInfo>	lobbyInfoSet
#define	SERVERPORT
CRITICAL_SECTION	cs
enum	send_list

LobbyInfo

char*	id
bool	isReady
unsigned int	musicindex
unsigned int	score

LoginInfo

char*	id
char*	password

UserInfo

char*	id
unsigned int	maxScore

MusicData

char*	musicName
char*	noteName

Main

unsigned __stdcall ProcessClient(void *arg)
void CheckSendList(enum)

Server

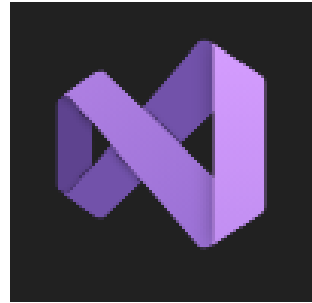| |
|---|
| void RecvCheckLoginAndDownloadMusic(SOCKET, char*, char*, MusicData) |
| void SendAllScore(SOCKET, vector<UserInfo>) |
| void RecvEnterLobbyAndInfo(SOCKET, LobbyInfo) |
| void SendAllReadyAndMusicindex(SOCKET, bool, unsigned int) |
| void RecvLeaveLobby(SOCKET) |
| void RecvEnterPlayStation(SOCKET) |
| void RecvSelectMusic(SOCKET, unsigned int) |
| void SendPlayerScore(SOCKET, unsigned int) |
| void RecvLeavePlayStation(SOCKET, UserInfo) |
| void RecvPlayerScore(SOCKET, unsigned int, char*) |
| void RecvEnterEditStation(SOCKET) |
| void RecvLeaveEditStation(SOCKET) |
| void UploadMusic(SOCKET, vector<MusicData>) |

역할 분담

정극훈: Lobby class 제작, 게임시작, 로그인,
　　　　PlayStation 과 서버 연동

이창민: 음악 업로드/다운로드, EditStation 과 서버 연동,
　　　　Page 에서 랭킹 표시, PlayStation 과 서버 연동

개발 환경

1. Visual Studio 2022

2. Github desktop

개발 일정

정극훈

월	수	목	금	일
4	6 Server Main쓰레드	7 ProcessClient CheckSendList	8 Page::SendCheckLogin AndMusicDownload Net::SendCheckLogin AndMusicDownload Download부분	10 Sv::RecvCheckLogin AndMusicDownload Net::ProcessCheckLogin AndMusicDownload
11 Lb::SendEnterPlayStation	13 Net::SendEnterPlayStation	14 Sv::RecvEnterPlayStation	15 Net::ProcessEnterPlayStation	17 Ps::SendPlayerScore Net::SendPlayerScore
18 Ps::SendLeavePlayStation	20 Net::SendLeavePlayStation	21 Sv::RecvLeavePlayStation	22 Net::ProcessLeavePlayStation	24 Page::SendEnterLobby AndInfo
25 Net::SendEnterLobby AndInfo	27 Sv::RecvEnterLobby AndInfo	28 Net::ProcessEnterLobby AndInfo	29 Net::SendReadyStatus Lb::SendReadyStatus	12/1 Lb::SendRequest AllReadyAndMusicIndex
12/2 Net::SendRequest AllReadyAndMusicIndex	12/4 Sv::SendAllReady AndMusicIndex	12/5 Net::ProcessRequest AllReadyAndMusicIndex	12/6	12/8

이창민

월	수	목	금	일
4	6 Sv::SendPlayerScore Net::ProcessRequest PlayerScore	7 Ps::SendRequest PlayerScore Net::SendRequest PlayerScore	8 Page::SendRequestAllScore Net::SendRequestAllScore	10 Server::SendAllScore Net::ProcessRequestAllScore
11 ES::SendLeaveEditStation Net::SendLeaveEditStation	13 Sv::RecvLeaveEditStation Net::ProcessLeaveEditStation	14 Sv::RecvEnterEditStation Net::ProcessEnterEditStation	15 Page::SendEnterEditStation Net::SendEnterEditStation	17 개인사정
18 Ps::ShowResult Ps::PrintPlayStationInfo	20 Edit::UploadMusic	21 Net::SendUploadMusic	22 Lb::SendSelectMusic	24 Net::SendSelectMusic
25 Sv::SendAllReady AndMusicIndex	27 Net::ProcessRequestAllReady AndMusicIndex	28 Lb::SendLeaveLobby	29 Net::SendLeaveLobby	12/1 Sv::RecvLeaveLobby
12/2 Net::ProcessLeaveLobby	12/4 Page::SendCheckLogin AndMusicDownload Net::SendCheckLogin AndMusicDownload Login부분	12/5 Sv::RecvCheckLogin AndMusicDownload Net::ProcessCheckLogin AndMusicDownload	12/6	12/8