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Contents

Mobile App in Kotlin – Interractive Reader 2

Project Overview 2

Running the program 6

Assembly Language Project – Tic Tac Toe 7

Project Overview 7

How to run the program 7

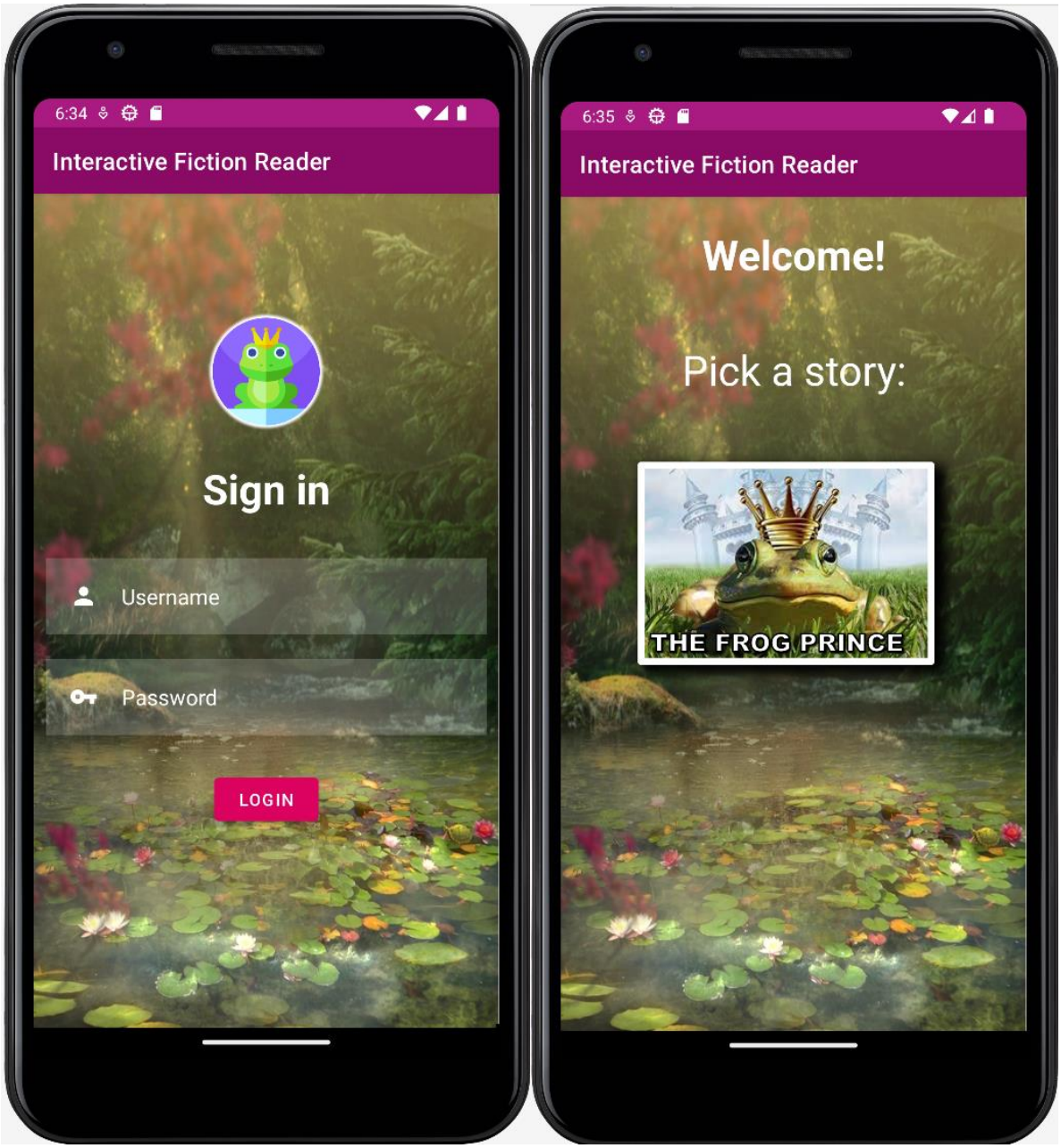
How to look at the code 9

Network Setup 11

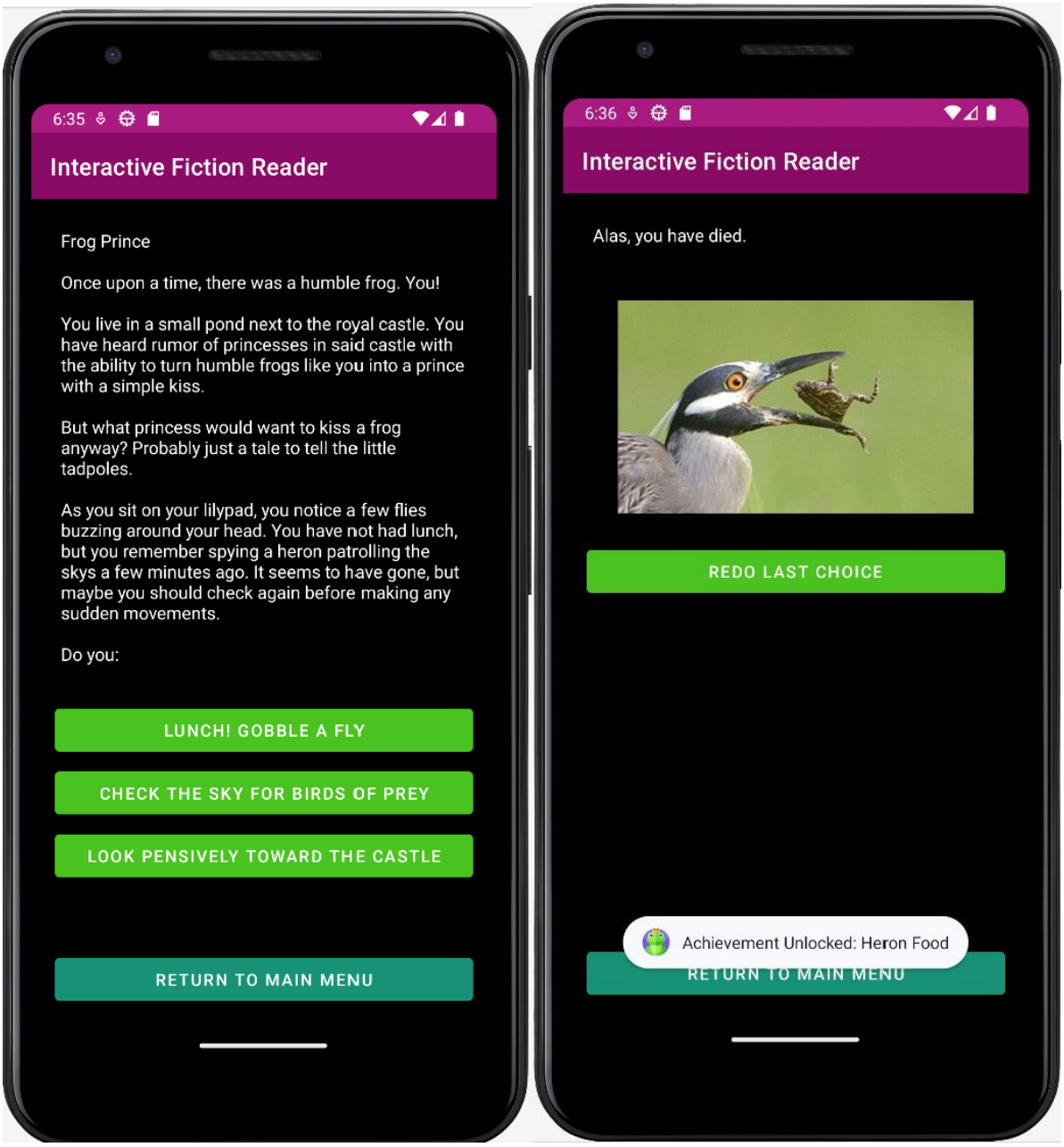
MOBILE APP IN KOTLIN – INTERRACTIVE READER

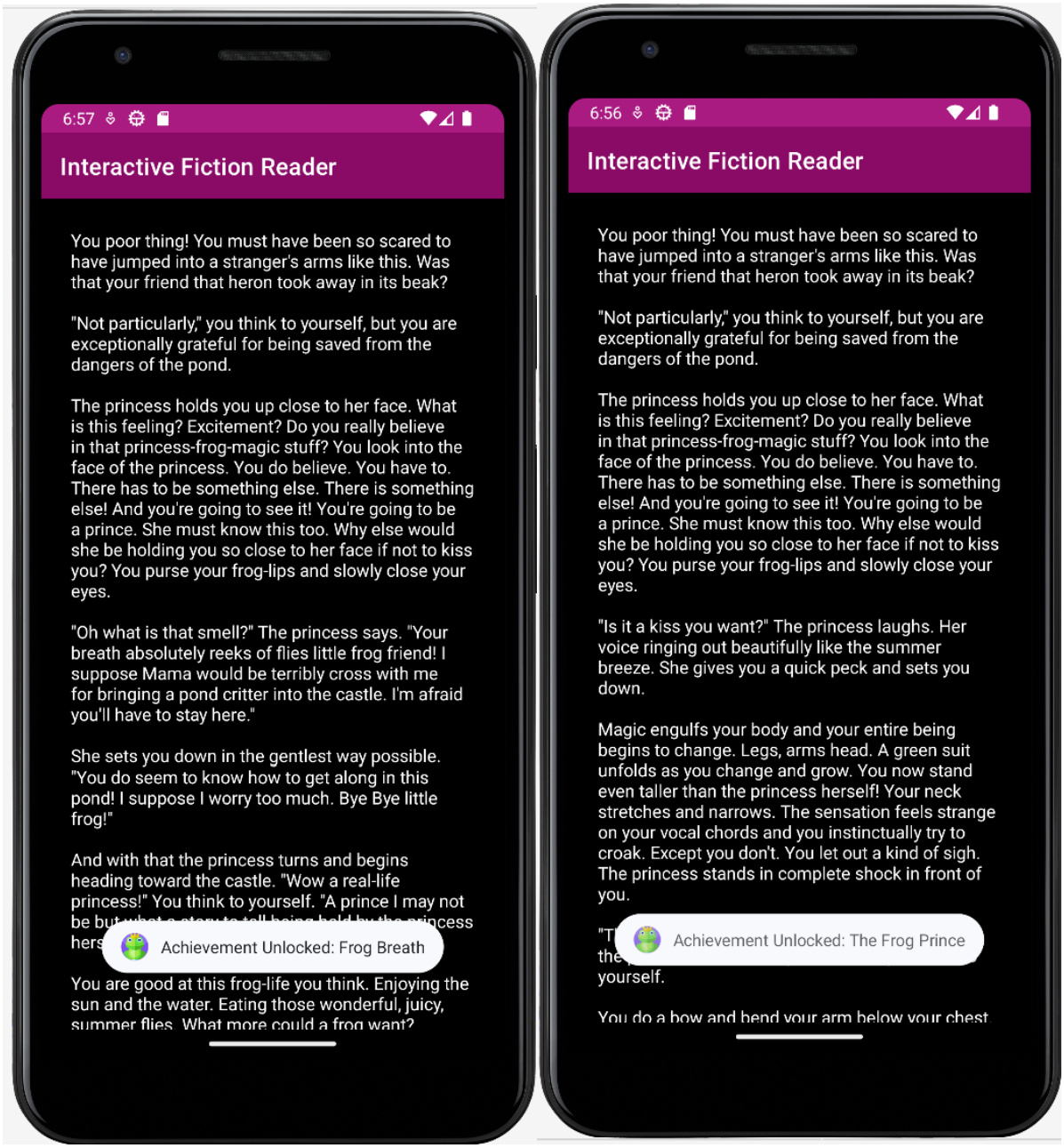
Project Overview

This project is an Android mobile application developed in Android App Studio written in Kotlin. It is an interactive fiction reader, allowing the user to make choices that change the direction of the narrative and result in multiple different endings. The app begins with a login page and main menu. Further development into this app would allow me to add more stories to choose from. Selecting The Frog Prince launches the story!



Selecting one of the lime green choices at the bottom of the screen progresses the story through an expanding tree of different endings. Exploring some choices also provides feedback to the user, alerting them when they have unlocked an achievement.

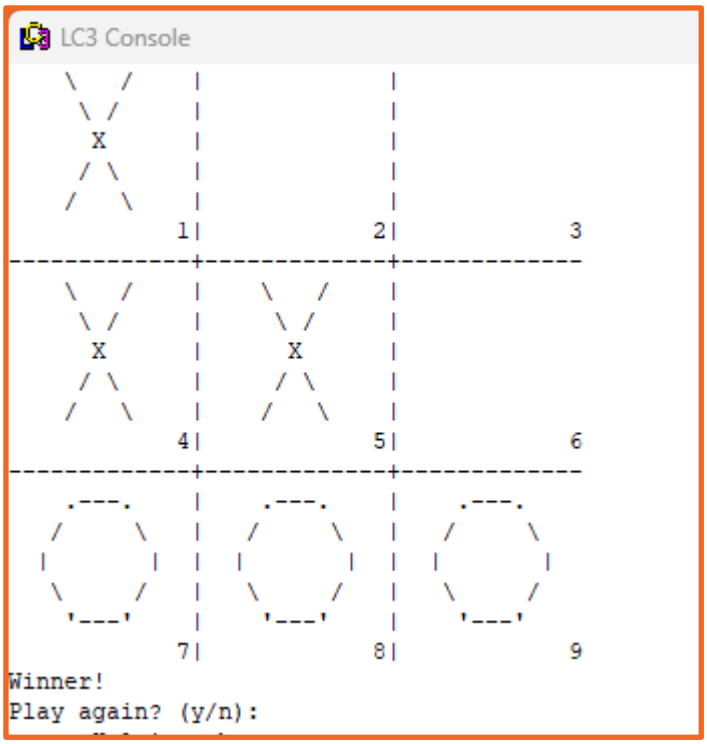

6:35
Interactive Fiction Reader
Frog Prince
Once upon a time, there was a humble frog. You!
You live in a small pond next to the royal castle. You have heard rumor of princesses in said castle with the ability to turn humble frogs like you into a prince with a simple kiss.
But what princess would want to kiss a frog anyway? Probably just a tale to tell the little tadpoles.
As you sit on your lilypad, you notice a few flies buzzing around your head. You have not had lunch, but you remember spying a heron patrolling the skys a few minutes ago. It seems to have gone, but maybe you should check again before making any sudden movements.
Do you:
LUNCH! GOBBLE A FLY
CHECK THE SKY FOR BIRDS OF PREY
LOOK PENSIVELY TOWARD THE CASTLE
RETURN TO MAIN MENU
6:36
Interactive Fiction Reader
Alas, you have died.
REDO LAST CHOICE
Achievement Unlocked: Heron Food
RETURN TO MAIN MENU


6:57
Interactive Fiction Reader
You poor thing! You must have been so scared to have jumped into a stranger's arms like this. Was that your friend that heron took away in its beak?
"Not particularly," you think to yourself, but you are exceptionally grateful for being saved from the dangers of the pond.
The princess holds you up close to her face. What is this feeling? Excitement? Do you really believe in that princess-frog-magic stuff? You look into the face of the princess. You do believe. You have to. There has to be something else. There is something else! And you're going to see it! You're going to be a prince. She must know this too. Why else would she be holding you so close to her face if not to kiss you? You purse your frog-lips and slowly close your eyes.
"Oh what is that smell?" The princess says. "Your breath absolutely reeks of flies little frog friend! I suppose Mama would be terribly cross with me for bringing a pond critter into the castle. I'm afraid you'll have to stay here."
She sets you down in the gentlest way possible. "You do seem to know how to get along in this pond! I suppose I worry too much. Bye Bye little frog!"
And with that the princess turns and begins heading toward the castle. "Wow a real-life princess!" You think to yourself. "A prince I may not be but
hers
Achievement Unlocked: Frog Breath
You are good at this frog-life you think. Enjoying the sun and the water. Eating those wonderful, juicy, summer flies. What more could a frog want?
6:56
Interactive Fiction Reader
You poor thing! You must have been so scared to have jumped into a stranger's arms like this. Was that your friend that heron took away in its beak?
"Not particularly," you think to yourself, but you are exceptionally grateful for being saved from the dangers of the pond.
The princess holds you up close to her face. What is this feeling? Excitement? Do you really believe in that princess-frog-magic stuff? You look into the face of the princess. You do believe. You have to. There has to be something else. There is something else! And you're going to see it! You're going to be a prince. She must know this too. Why else would she be holding you so close to her face if not to kiss you? You purse your frog-lips and slowly close your eyes.
"Is it a kiss you want?" The princess laughs. Her voice ringing out beautifully like the summer breeze. She gives you a quick peck and sets you down.
Magic engulfs your body and your entire being begins to change. Legs, arms head. A green suit unfolds as you change and grow. You now stand even taller than the princess herself! Your neck stretches and narrows. The sensation feels strange on your vocal chords and you instinctually try to croak. Except you don't. You let out a kind of sigh. The princess stands in complete shock in front of you.
"T
the
Achievement Unlocked: The Frog Prince
yourself.
You do a bow and bend your arm below your chest

Running the program

The app hasn't been published to the app store, but I have included the project code and assets in the AndroidApp_InteractiveReader file. The project can be ran from an emulated Android device within Android App Studio. I also have a high-fidelity prototype of the project available online at: https://preview.uxpin.com/555d0846783c1df268f2eea4409b526aabb7203f#/pages/159707590/simulate/no-panels?mode=i

ASSEMBLY LANGUAGE PROJECT – TIC TAC TOE



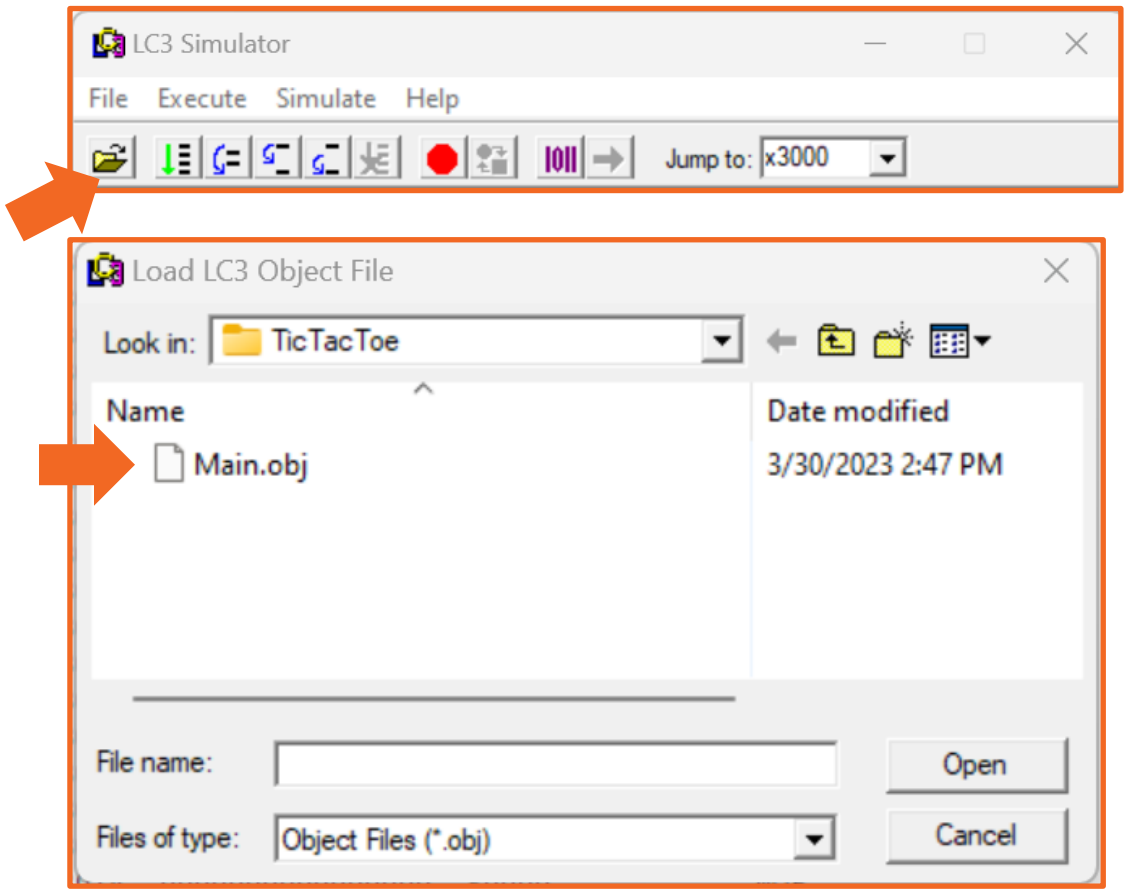
Project Overview

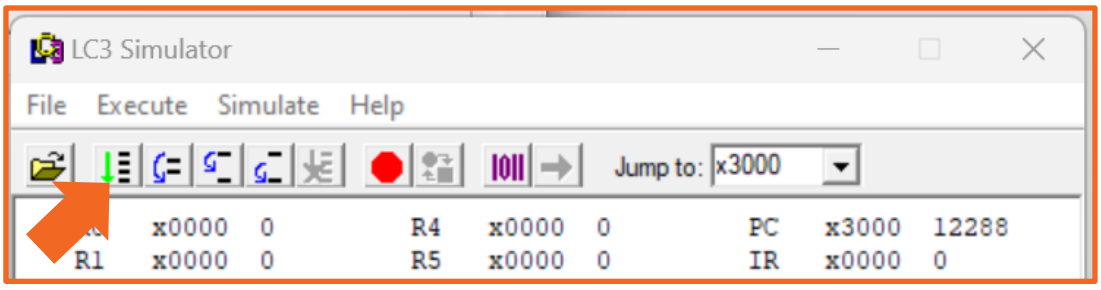
This was one of my first programming projects. It is a fairly simple program that allows the user to play a game of Tic-Tac-Toe by entering in the corresponding number (1-9) of the cell they want to add their respective X or O. The program is written entirely in assembly language for LC-3 architecture. Each line of code translates 1:1 to the binary 8-bit commands the processor iterates through when executing the program. In my Assembly Language class, we learned how to process through a program written in binary line by line by hand, then learned the LC-3 assembly language equivalents to those binary commands and wrote programs in that assembly language. This Tic-Tac-Toe game was my final project for that course.

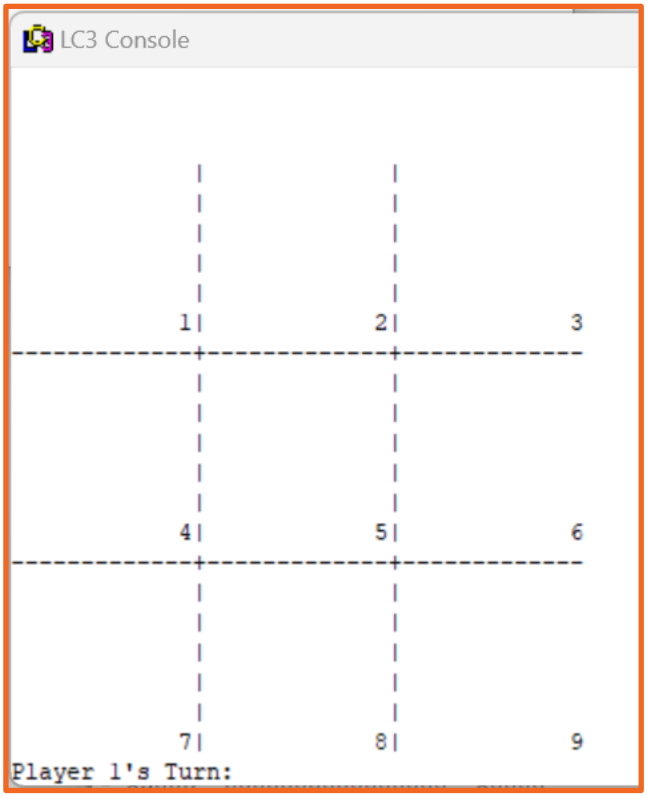
How to run the program

The code for this project can be run using the LC-3 Simulator executable entitled Simulate.exe within the TicTacToe file. This simulator does not require installation to be run on Windows.

Click the Load Program icon, select the Main.obj file, then select the Run Program icon to play the game.

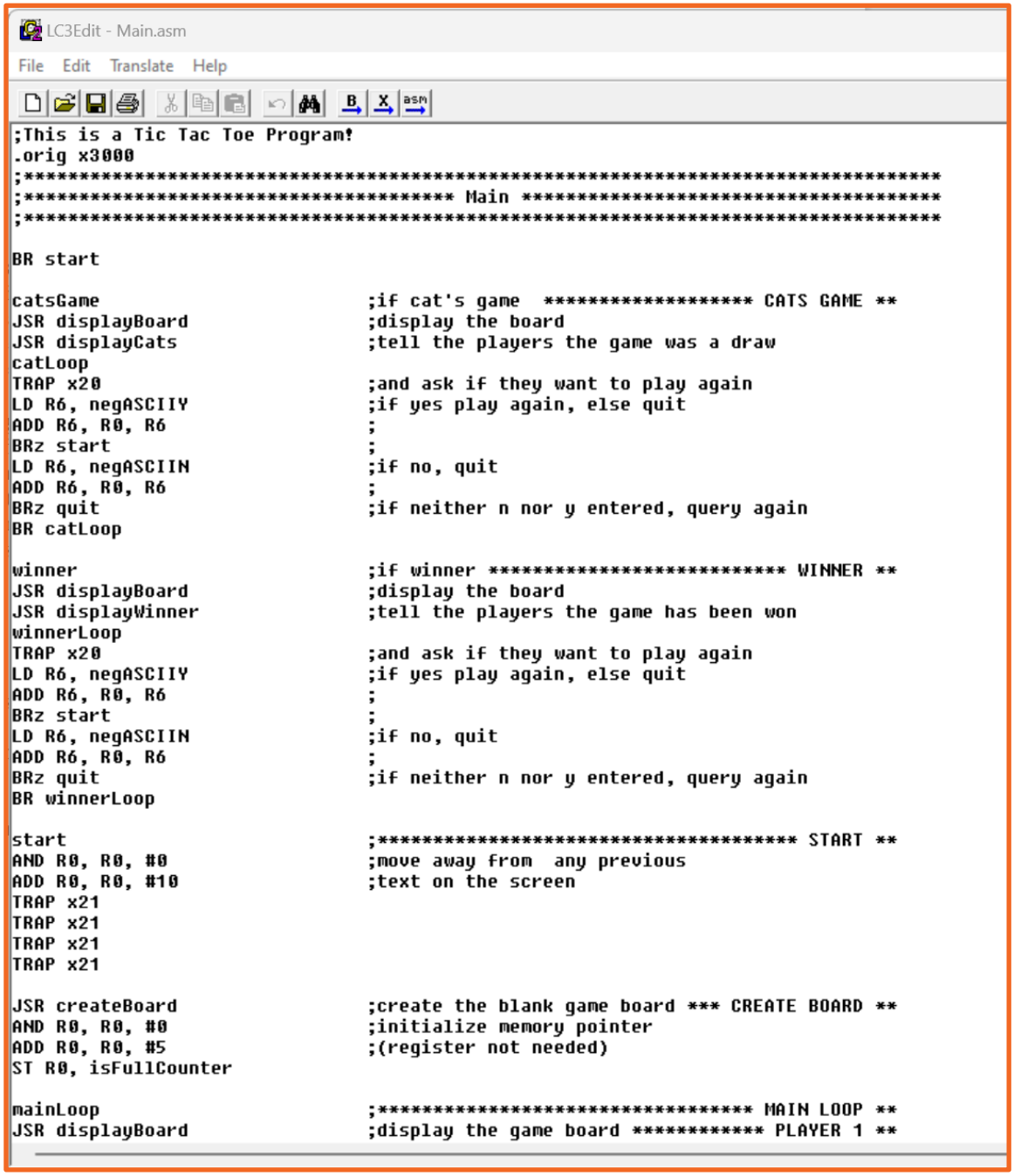






How to look at the code

The assembly language file Main.asm can be opened using any text editor, although the formatting of the whitespace looks best when opened using the LC-3 editing program LC3Edit.exe I have included in the TicTacToe file.


LC3Edit - Main.asm
File Edit Translate Help
;This is a Tic Tac Toe Program!
.orig x3000
;***
;************************************ Main ***********************************
;***
BR start
catsGame ;if cat's game ********** CATS GAME **
JSR displayBoard ;display the board
JSR displayCats ;tell the players the game was a draw
catLoop
TRAP x20 ;and ask if they want to play again
LD R6, negASCIIY ;if yes play again, else quit
ADD R6, R0, R6 ;
BRz start ;
LD R6, negASCIIN ;if no, quit
ADD R6, R0, R6 ;
BRz quit ;if neither n nor y entered, query again
BR catLoop
winner ;if winner ********** WINNER **
JSR displayBoard ;display the board
JSR displayWinner ;tell the players the game has been won
winnerLoop
TRAP x20 ;and ask if they want to play again
LD R6, negASCIIY ;if yes play again, else quit
ADD R6, R0, R6 ;
BRz start ;
LD R6, negASCIIN ;if no, quit
ADD R6, R0, R6 ;
BRz quit ;if neither n nor y entered, query again
BR winnerLoop
start ;************************************ START **
AND R0, R0, #0 ;move away from any previous
ADD R0, R0, #10 ;text on the screen
TRAP x21
TRAP x21
TRAP x21
TRAP x21
JSR createBoard ;create the blank game board *** CREATE BOARD **
AND R0, R0, #0 ;initialize memory pointer
ADD R0, R0, #5 ;(register not needed)
ST R0, isFullCounter
mainLoop ;********************************* MAIN LOOP **
JSR displayBoard ;display the game board ********** PLAYER 1 **

NETWORK SETUP

I am also including a PDF document of my final project for a networking course. In this project I used Cisco Packet Tracer to simulate the set up of three separate networks supporting different devices and using different techniques for IP addressing.