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#include <stdio.h>

#include <string.h>

#include <ctype.h>

#include <math.h>

//function prototypes

void fileReader(char filePath[]);

void locationMover();

//struct for user actions

typedef struct {

char action[20];

}actions;

//initialising the struct

actions s[20];

//struct to read in 2d array of integers and their descriptions

typedef struct {

int res[9][7];

char description[100];

} idValues;

//initialising the struct

idValues vals[20];

//main function

void main() {

char myFilePath[] = "C:\\Users\\catha\\Desktop\\adventure\_locations.txt";//filepath

fileReader(myFilePath);//calling read file function

locationMover();//calling location mover function

}

void fileReader(char filePath[]) {

idValues iValue;//initialise one struct iValue for 2d array and descriptions

FILE\* fptr;//file pointer

char delims[] = "\t";//delimeter needed for strtok\_s

char inputString[20];//string to convert to lowercase

//counters

int i = 0;

int k = 0;

char line[200];//to get each line

fopen\_s(&fptr, filePath, "r");//opening file

if (fptr == NULL) {

printf("Error opening file, exiting ....");//printing error message for file failure

}

else {

fgets(line, 200, fptr);//getting first line

//setting up next and first for string token function

char\* next = NULL;

char\* first = strtok\_s(line, delims, &next);

while (first != NULL) {

strcpy\_s(inputString, 20, first);//copy first to input String

//Convert each character to lowercase

while (inputString[k] != '\0') {

inputString[k] = tolower(inputString[k]);

k++;

}

k = 0;//reset k counter to 0

strcpy\_s(s[i].action, 20, inputString);//copy changed string to structure s, under action

first = strtok\_s(NULL, delims, &next);//resetting first

i++;//incrementing i

}

i = 0;//resetting i to 0 for next part

fgets(line, 200, fptr);//getting second line, but isn't really needed

for (int i = 0; i < 9; i++) {//done 9 times

fgets(line, 200, fptr);//getting third line

next = NULL;//setting next

//for each number we save it inside a 2d array and reset the value of first

first = strtok\_s(line, delims, &next);

iValue.res[i][0] = atoi(first);

first = strtok\_s(NULL, delims, &next);

iValue.res[i][1] = atoi(first);

first = strtok\_s(NULL, delims, &next);

iValue.res[i][2] = atoi(first);

first = strtok\_s(NULL, delims, &next);

iValue.res[i][3] = atoi(first);

first = strtok\_s(NULL, delims, &next);

iValue.res[i][4] = atoi(first);

first = strtok\_s(NULL, delims, &next);

iValue.res[i][5] = atoi(first);

first = strtok\_s(NULL, delims, &next);

iValue.res[i][6] = atoi(first);

//finally we copy the description string in

first = strtok\_s(NULL, delims, &next);

strcpy\_s(iValue.description, 100, first);

//Letting vals[i] equal to all values gotten in iValue

vals[i] = iValue;

}

}

}

void locationMover() {

printf("Welcome to Galway Adventure. Type 'help' for help.");//Intro message

printf("\n\n");

printf("%s\n", vals[0].description);//print description of id 1

char chosenAction[20];//string to save chosen action by user

//three strings to compare

char help[] = "help";

char quit[] = "quit";

char look[] = "look";

//quitInt to exit programme if user types quit

int quitInt = 0;

//id's changed upon user input

int currId = 1;

int prevId = 0;

//counter needed to change user input to lowercase

int j = 0;

while (quitInt == 0) {

//scan user's action and save to chosenAction

printf("> ");

scanf\_s("%s", chosenAction, 20);

chosenAction[strlen(chosenAction)] = '\0';//set end of string

//converting letters to lowercase

while (chosenAction[j] != '\0') {

chosenAction[j] = tolower(chosenAction[j]);

j++;

}

j = 0;//reset j

if (strcmp(chosenAction, help) == 0) {//if user types help

printf("\n");

printf("I know these commands:\n");//Give these commands

printf("n, s, e, w, in, out, look, help, quit.\n\n");

}

if (strcmp(chosenAction, quit) == 0) {//if user types quit

quitInt = 1;//change this to 1, this quits our while loop ending the program

printf(" Bye!");//bye message

}

for (int i = 1; i < 10; i++) {//for loop to loop through all possible actions

if (strcmp(chosenAction, look) == 0) {//if user types look

printf("%s\n", vals[currId - 1].description);//print out the description of the Id they are on

break;

}

if (strcmp(chosenAction, s[i].action) == 0) {//when user input is same as action

//let current id be equal to the value that the action points to

currId = vals[currId - 1].res[currId - 1][i];//CurrID - 1 here as my array is 0-indexed

if (currId == 0) {//if current id = 0

printf("You can't go that way\n");//error message

currId = prevId;//current id set back to previous Id value

break;//break

}

else {

//otherwise print out the description of current location

printf("%s\n", vals[currId - 1].description);

}

//set previous Id equal to current Id

prevId = currId;

}

}

}

printf("\n");

}