Project 1

Card-Jitsu

CIS-5

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Introduction

Card-Jitsu made its debut in 2008 as a card game in the online multiplayer game Club Penguin. As Club Penguin's player base expanded, Card-Jitsu saw new card decks and new modes focusing on the three different elements. On March 30th of 2017, Club Penguin was discontinued.

I used this project to recreate as many elements of the card game as I could. The elements of the game that I was able to replicate were the literal Elements: Fire, Water, and Snow, as well as the numbered cards.

How to Play Card-Jitsu

Card-Jitsu uses a Rock Paper Scissors or Element Triangle system where each element counters another. For example, if player one chooses Fire and player two chooses Water, then Water will beat Fire and player two will be the victor. An image example:

In the original game, when both players chose the same element then the card with the highest number will win. Unfortunately, this is not present in my build of the game. Now, when two players have the same element, it will result in a draw. (Hopefully to be fixed in the next release)

The Project

Version 1

The first version of the project contains a very minimal amount of code. It's the "Hello World" of this project. I used this version of the project to test out a void function to display the Instructions of the game. However, I soon found that functions will need to wait a little while before I can include them so instead of deleting this version, I created a new version.

Version 1 ended with 60 lines of code.

Version 2

This is where things come together a little bit more. I found out how to pull my cards from a file using the available example in Dr. Lehr's GitHub repository. I altered the card data to suit my project and tested my outputs using this version of the project. Next, I allowed User Input to let the player select their card. I couldn't figure out how to implement Player 2 as I didn't know how to pull cards from the file a second time. After some time I gave up and left it for the next day.

Version 2 ended with 154 lines of code.

Version 3

The final version of this project (for now). I figured I can just duplicate the card data file and pull cards a second time. This would work out as each player has their own deck of cards so it sort of simulates that aspect. With that up and running I moved to the next stage, associating the cards with their element with F1-F12 being Fire, S1-S12 being Snow, and W1-W10 being Water. After this, I was met with trouble. Originally, the game ends once a player reaches three wins, but it was taking me longer than expected to add that to the game so I scrapped it. Another thing I scrapped was when players chose the same element, the highest card would win. The program only took the first number of the string to determine which card was higher so a card like S9 would win over S10-S12. After that, all that was left was implementing the Element Triangle.

Version 3 ended with 297 lines of code.

Pseudocode

#include <iostream> //Input Output Library

#include <iomanip> //Formatting Library

#include <fstream> //File Stream

#include <cstdlib>

#include <ctime>

Set Random Number Seed

Declare Variables

Char con;

String player1, player2, first, second;

Ifstream inp;

String instru;

Unsigned short vC1, vC2, vC3, vC4, vC5;

Unsigned char nCards;

Fstream input;

String card1, card2, card3, card4, card5, file1, file2;

Initialize File Parameters

Open File: "Card.dat"

Initialize Variables

nCards=36; //Number of Cards

vC1=rand()%nCards+1;

Output: "Welcome to Card-Jitsu"

Open File: "Instructions.txt"

Output: "Card-Jitsu is a 2 player card game. There are three elements: Fire, Snow, and Water. Each card contains one of these elements and a number 1-12. Fire beats Snow, Snow beats Water, and Water beats Fire. When both players select the same element, the card with the highest number will win."

Ask player to press any button to continue

Begin Player 1 Phase:

Do {

Randomize Cards

}While Card 1 and Card 2 are the same

Order the cards

Repeat the process until 5 cards are ordered.

Pull Cards from file and match them to the random generated cards.

Prompt Player 1 to choose from one of the five cards.

Begin Player 2 Phase:

Do{

Randomize Cards

}While Card 1 and Card 2 are the same

Order the cards

Cont.

Repeat the process until 5 cards are ordered.

Pull Cards from file and match them to random generated cards.

Prompt Player 2 to choose from one of the five cards.

For Player 1: Assign cards F1-F12 to "Fire", Assign cards S1-S12 to "Snow", Assign the rest of the cards to "Water".

For Player 2: Assign cards F1-F12 to "Fire", Assign cards S1-S12 to "Snow", Assign the rest of the cards to "Water".

If Player 1 and Player 2 choose the same card the outcome is a Draw.

If Player 1 chooses Fire and Player 2 chooses Snow{

Output: "Fire beats Snow. Player 1 Wins." }

If Player 1 chooses Snow and Player 2 chooses Fire{

Output: "Fire beats Snow. Player 2 Wins."}

If Player 1 chooses Water and Player 2 chooses Fire{

Output: "Water beats Fire. Player 1 Wins." }

If Player 1 chooses Fire and Player 2 chooses Water{

Output: "Water beats Fire. Player 2 Wins."}

If Player 1 chooses Snow and Player 2 chooses Water{

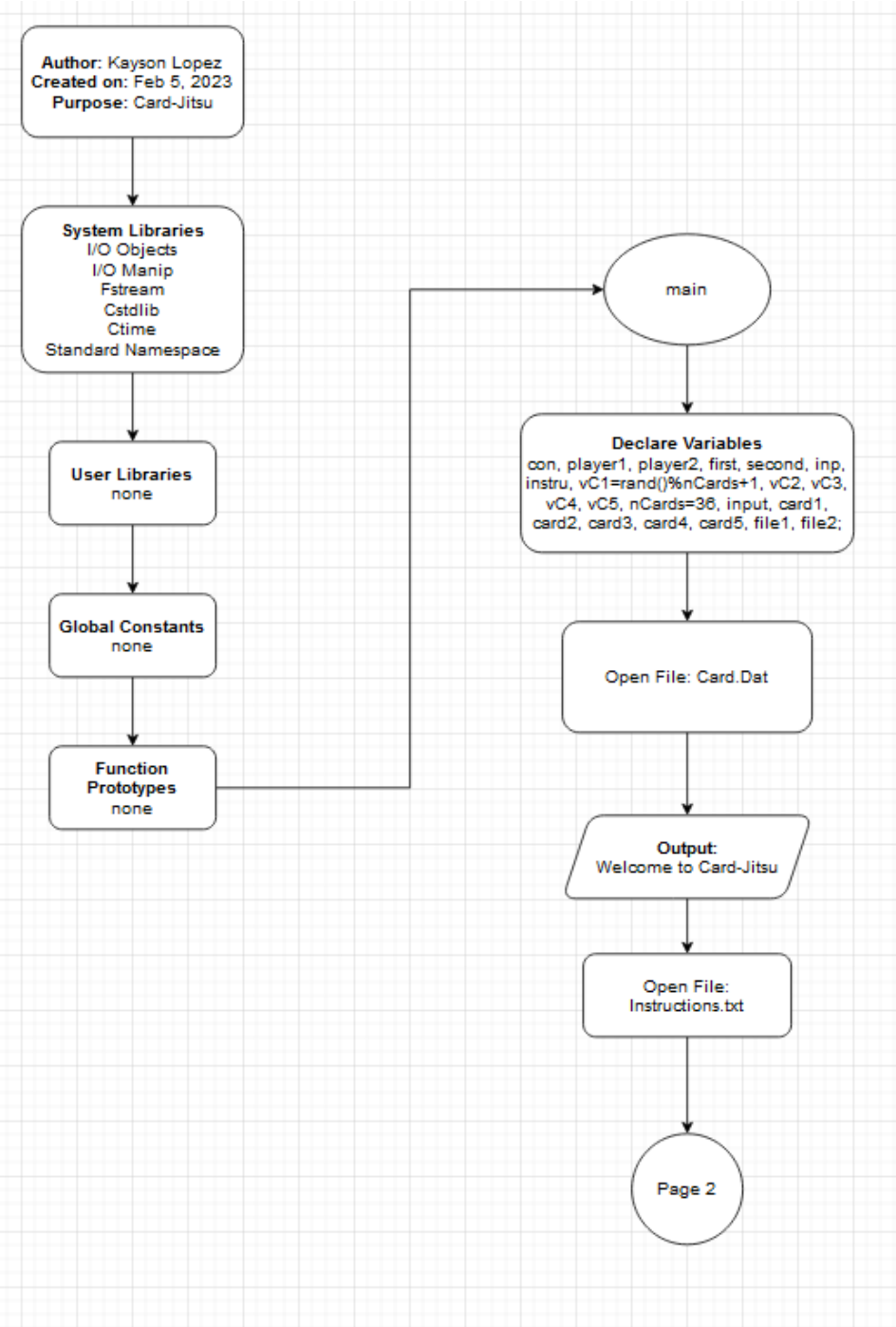
Output: "Snow beats Water. Player 1 Wins." }

If Player 1 chooses Water and Player 2 chooses Snow{

Output: "Snow beats Water. Player 2 Wins."}

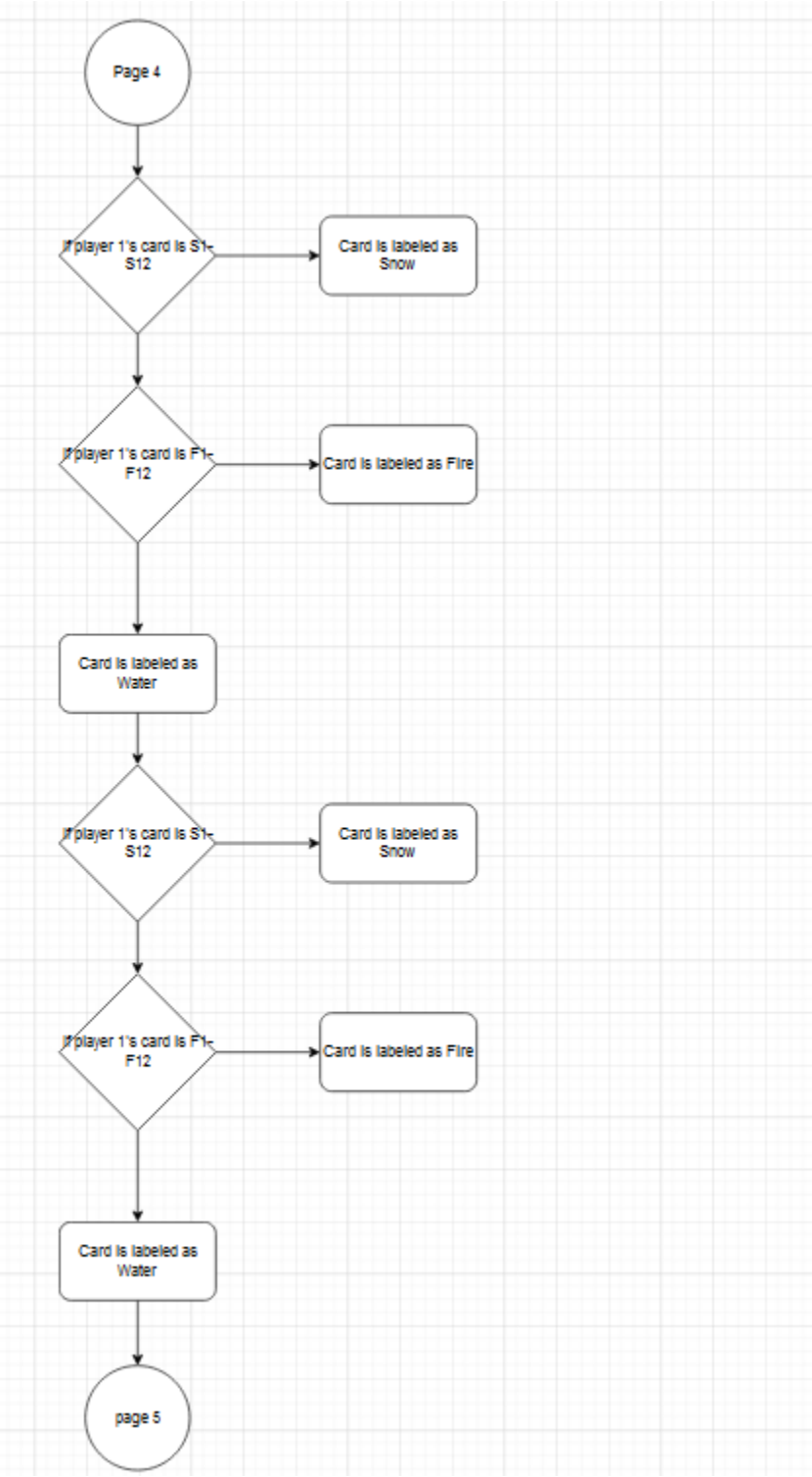
If Player 1 and Player 2 choose the same element the outcome is a Draw.

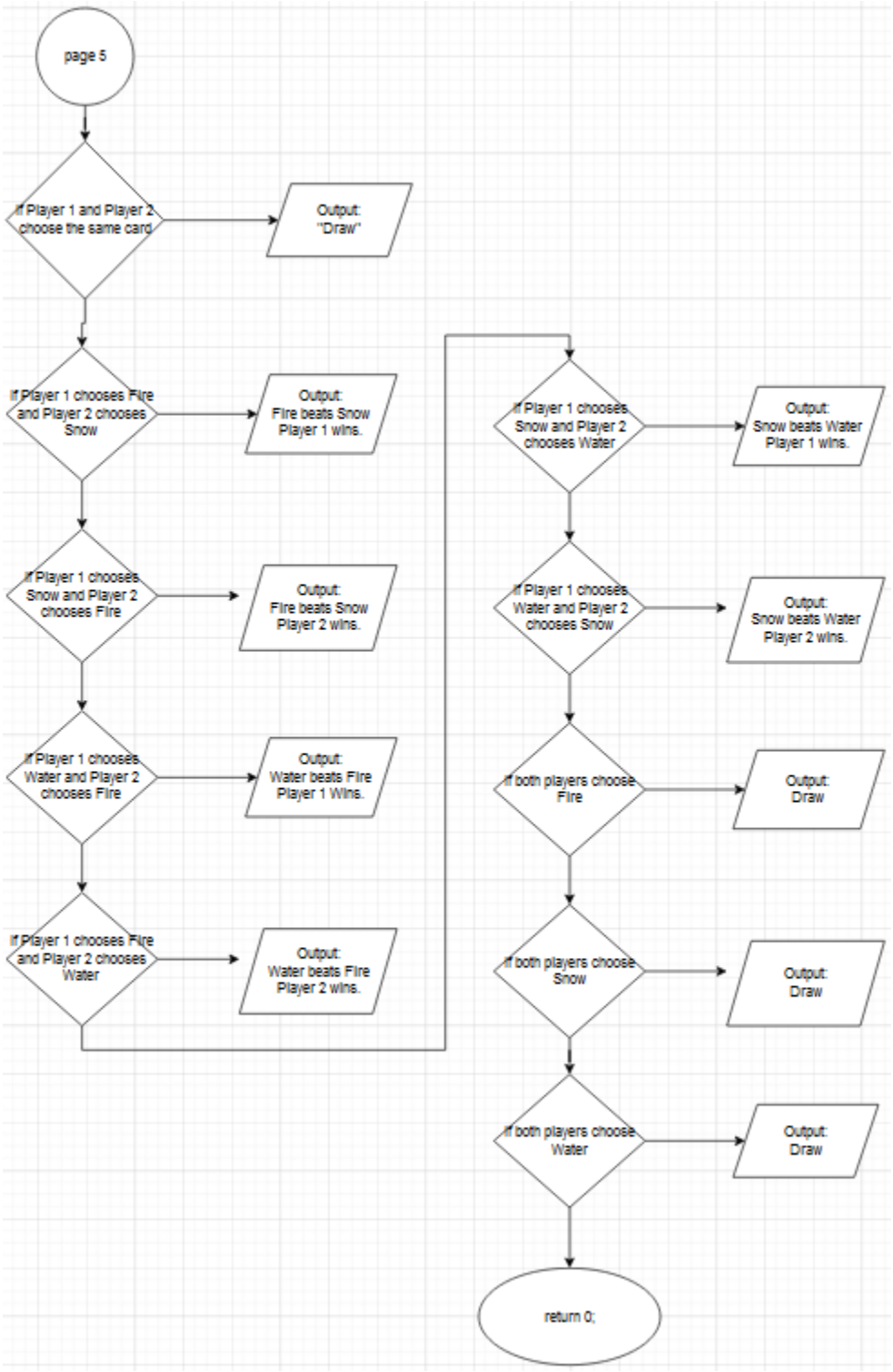
Flowchart


Author: Kayson Lopez
Created on: Feb 5, 2023
Purpose: Card-Jitsu
System Libraries
I/O Objects
I/O Manip
Fstream
Cstdlib
Ctime
Standard Namespace
User Libraries
none
Global Constants
none
Function Prototypes
none
main
Declare Variables
con, player1, player2, first, second, inp, instru, vC1=rand()%nCards+1, vC2, vC3, vC4, vC5, nCards=36, input, card1, card2, card3, card4, card5, file1, file2;
Open File: Card.Dat
Output:
Welcome to Card-Jitsu
Open File:
Instructions.txt
Page 2


page 2
Loop
While there are still instructions
Output the instructions
If there are no more instructions
Output:
To continue the game press any key.
Prompt for input
Output:
"Player 1:"
Randomize cards
If vC1 is the same as vC2
Randomize cards
If vC1 is the same as vC3 and if vC2 is the same as vC3
Randomize cards
If vC1 is the same as vC4 and if vC2 is the same as vC4 and if vC3 is the same as vC4
Randomize cards
If vC1 is the same as vC5 and if vC2 is the same as vC5 and if vC3 is the same as vC5 and if vC4 is the same as vC5
page 3


page 3
Output the 5 random cards
Prompt player 1 to select a card
Output:
"Player 2:"
Randomize cards
If vC1 is the same as vC2
Randomize cards
If vC1 is the same as vC3
and if vC2 is the same as vC3
Randomize cards
If vC1 is the same as vC4
and if vC2 is the same as vC4
and if vC3 is the same as vC4
Randomize cards
If vC1 is the same as vC5
and if vC2 is the same as vC5
and if vC3 is the same as vC5
and if vC4 is the same as vC5
Output the 5 random cards
Prompt player 2 to select a card
Page 4

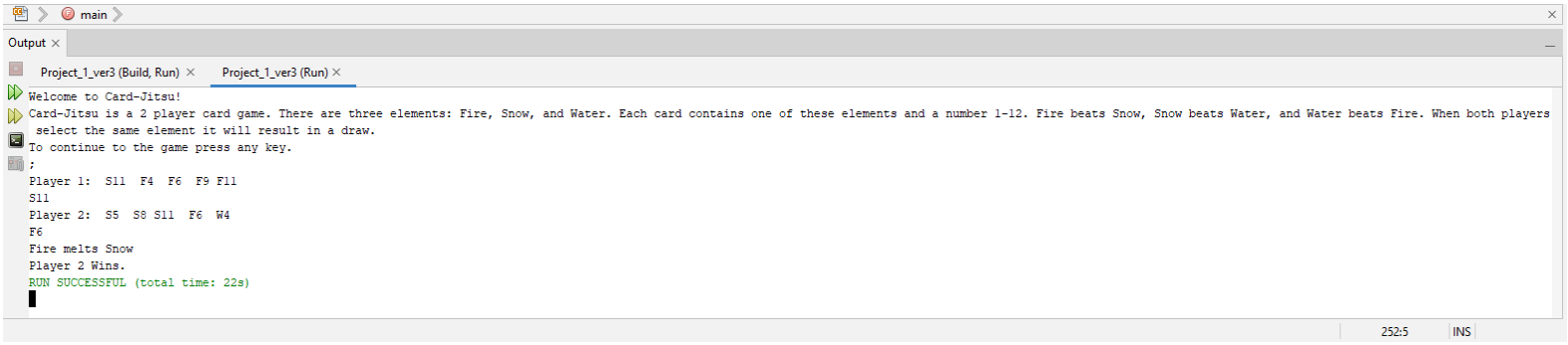

Page 4
if player 1's card is S1-S12
Card is labeled as Snow
if player 1's card is F1-F12
Card is labeled as Fire
Card is labeled as Water
if player 1's card is S1-S12
Card is labeled as Snow
if player 1's card is F1-F12
Card is labeled as Fire
Card is labeled as Water
page 5

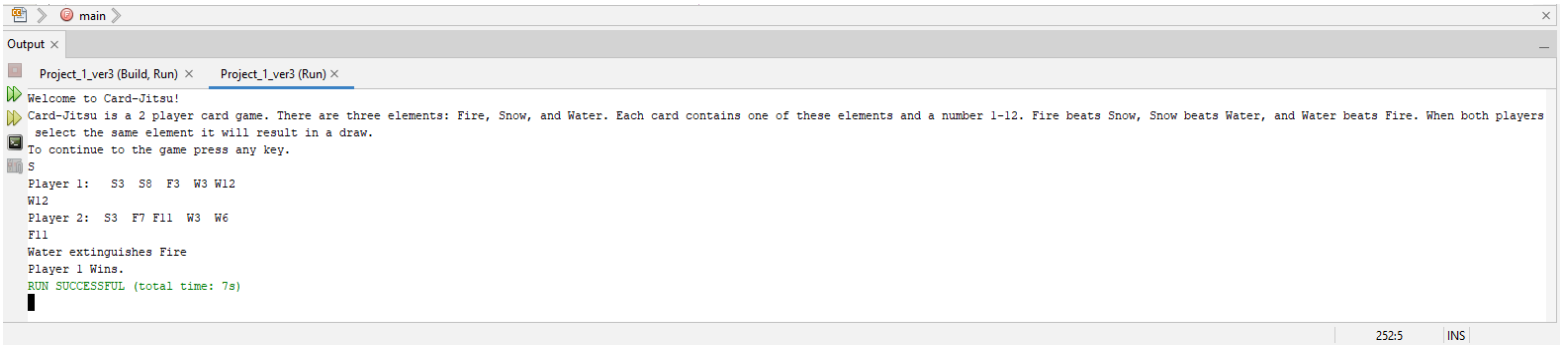

page 5
If Player 1 and Player 2 choose the same card
Output: "Draw"
If Player 1 chooses Fire and Player 2 chooses Snow
Output: Fire beats Snow Player 1 wins.
If Player 1 chooses Snow and Player 2 chooses Fire
Output: Fire beats Snow Player 2 wins.
If Player 1 chooses Water and Player 2 chooses Fire
Output: Water beats Fire Player 1 Wins.
If Player 1 chooses Fire and Player 2 chooses Water
Output: Water beats Fire Player 2 wins.
If Player 1 chooses Snow and Player 2 chooses Water
Output: Snow beats Water Player 1 wins.
If Player 1 chooses Water and Player 2 chooses Snow
Output: Snow beats Water Player 2 wins.
If both players choose Fire
Output: Draw
If both players choose Snow
Output: Draw
If both players choose Water
Output: Draw
return 0;

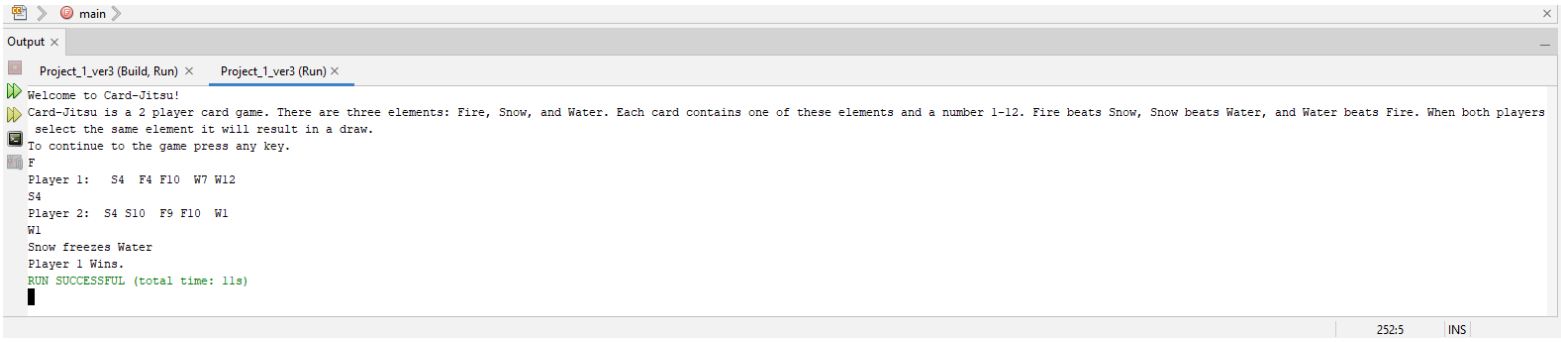
Checklist

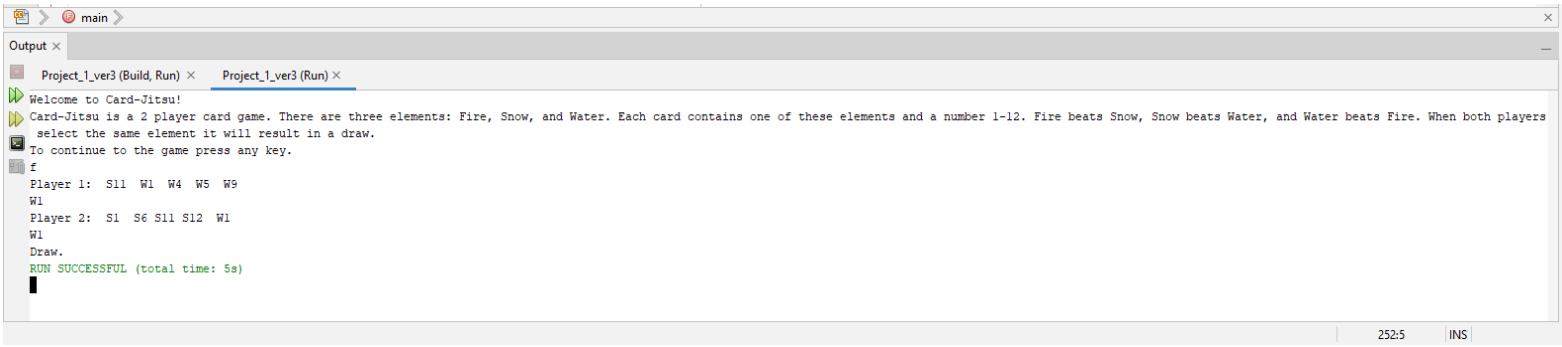
Chapter	Section	Topic	Where Line #'s	Pts	Notes
2	2	cout			
	3	libraries	Lines 9-13	8	iostream, iomanip, cmath, cstdlib, fstream, string, ctime
	4	variables/literals			No variables in global area, failed project!
	5	Identifiers			
	6	Integers	Lines 126 & 221	3	
	7	Characters	Lines 28 & 51	3	
	8	Strings	Lines 125 & 220	3	
	9	Floats No Doubles		3	Using doubles will fail the project, floats OK!
	10	Bools		4	
	11	Sizeof *****			
	12	Variables 7 characters or less	Lines 28-36		All variables <= 7 characters
	13	Scope ***** No Global Variables			
	14	Arithmetic operators			
	15	Comments 20%+	Throughout	5	Model as pseudo code
	16	Named Constants			All Local, only Conversions/Physics/Math in Global area
	17	Programming Style ***** Emulate			Emulate style in book/in class repository
3	1	cin	Lines 51, 141, 237		
	2	Math Expression			
	3	Mixing data types ****			
	4	Overflow/Underflow ****			
	5	Type Casting	Line 26	4	
	6	Multiple assignment *****			
	7	Formatting output	Lines 136-140 & 231-235	4	
	8	Strings	Lines 125 & 220	3	
	9	Math Library		4	All libraries included have to be used
	10	Hand tracing ******			
4	1	Relational Operators			
	2	if	Lines 223-227	4	Independent if
	4	If-else	Lines 256-280	4	
	5	Nesting	Lines 126, 228	4	
	6	If-else-if		4	
	7	Flags *****			
	8	Logical operators	Lines 238-270	4	
	11	Validating user input		4	
	13	Conditional Operator	Lines 238-250	4	
	14	Switch		4	
5	1	Increment/Decrement		4	
	2	While	Line 47	4	
	5	Do-while	Line 54, 64... Throughout	4	
	6	For loop	Line 126 & 221	4	
	11	Files input/output both	Line 40, 46, 148	8	
	12	No breaks in loops ******			Failed Project if included
****** Not required to show			Total	100	

Code at Work


main
Output
Project_1_ver3 (Build, Run)
Project_1_ver3 (Run)
Welcome to Card-Jitsu!
Card-Jitsu is a 2 player card game. There are three elements: Fire, Snow, and Water. Each card contains one of these elements and a number 1-12. Fire beats Snow, Snow beats Water, and Water beats Fire. When both players select the same element it will result in a draw.
To continue to the game press any key.
;
Player 1: S11 F4 F6 F9 F11
S11
Player 2: S5 S8 S11 F6 W4
F6
Fire melts Snow
Player 2 Wins.
RUN SUCCESSFUL (total time: 22s)
252:5
INS


main
Output
Project_1_ver3 (Build, Run)
Project_1_ver3 (Run)
Welcome to Card-Jitsu!
Card-Jitsu is a 2 player card game. There are three elements: Fire, Snow, and Water. Each card contains one of these elements and a number 1-12. Fire beats Snow, Snow beats Water, and Water beats Fire. When both players select the same element it will result in a draw.
To continue to the game press any key.
S
Player 1: S3 S8 F3 W3 W12
W12
Player 2: S3 F7 F11 W3 W6
F11
Water extinguishes Fire
Player 1 Wins.
RUN SUCCESSFUL (total time: 7s)
252:5
INS


main
Output
Project_1_ver3 (Build, Run)
Project_1_ver3 (Run)
Welcome to Card-Jitsu!
Card-Jitsu is a 2 player card game. There are three elements: Fire, Snow, and Water. Each card contains one of these elements and a number 1-12. Fire beats Snow, Snow beats Water, and Water beats Fire. When both players select the same element it will result in a draw.
To continue to the game press any key.
F
Player 1: S4 F4 F10 W7 W12
S4
Player 2: S4 S10 F9 F10 W1
W1
Snow freezes Water
Player 1 Wins.
RUN SUCCESSFUL (total time: 11s)
252:5
INS


main
Output
Project_1_ver3 (Build, Run)
Project_1_ver3 (Run)
Welcome to Card-Jitsu!
Card-Jitsu is a 2 player card game. There are three elements: Fire, Snow, and Water. Each card contains one of these elements and a number 1-12. Fire beats Snow, Snow beats Water, and Water beats Fire. When both players select the same element it will result in a draw.
To continue to the game press any key.
f
Player 1: S11 W1 W4 W5 W9
W1
Player 2: S1 S6 S11 S12 W1
W1
Draw.
RUN SUCCESSFUL (total time: 5s)
252:5
INS