MOV R0, #15

Begin:

//Display remain

STR R0, .WriteUnsignedNum

MOV R1, #remain

STR R1, .WriteString

//Taking Input and Display InputPrompt

Input:

MOV R1, #removPromp

STR R1, .WriteString

LDR R2, .InputNum

//Validate Input With 3

CMP R2, #3

BGT Invalid

//Validate Input With 1

CMP R2, #1

BLT Invalid

//Validate Input With R0

CMP R2, R0

BEQ Invalid

BGT Invalid

//Display Input and Calculate Remaining

MOV R1, #YouChoose

STR R1, .WriteString

STR R2, .WriteUnsignedNum

MOV R1, #line

STR R1,. WriteString

SUB R0, R0, R2

//Player Win Validation

CMP R0, #1

BEQ PlayerWin

//Computer Turn

ComputerSelect:

LDR R2, .Random

AND R2, R2, #3

CMP R2, #0

BEQ ComputerSelect

CMP R2, R0

BEQ ComputerSelect

BGT ComputerSelect

//Display Computer input and Calculate Remaining

MOV R1, #ComputerTurnPrompt

STR R1, .WriteString

STR R2, .WriteUnsignedNum

MOV R1, #line

STR R1, .WriteString

MOV R1, #line

STR R1, .WriteString

SUB R0, R0, R2

//Computer Win Validation

CMP R0, #1

BGT Begin

//Computer Win

MOV R1, #line

STR R1, .WriteString

MOV R1, #ComputerWinPrompt

STR R1, .WriteString

MOV R1, #line

STR R1, .WriteString

B GameOver

//PlayerWin

PlayerWin:

MOV R1, #line

STR R1, .WriteString

MOV R1, #PlayerWinPrompt

STR R1, .WriteString

MOV R1, #line

STR R1, .WriteString

B GameOver

Invalid:

MOV R1, #invalidPromp

STR R1, .WriteString

B Input

GameOver:

MOV R1, #GameOverPrompt

STR R1, .WriteString

HALT

remain: .ASCIZ "remaining\n"

line: .ASCIZ "\n"

removPromp: .ASCIZ "How many do you want to remove (1-3)?\n"

invalidPromp: .ASCIZ "Invalid Input, please try again (1 to 3 and lower than remaining)\n"

GameOverPrompt: .ASCIZ "Game Over\n"

YouChoose: .ASCIZ "You choose: "

ComputerTurnPrompt: .ASCIZ "Computer Turn, It choose: "

ComputerWinPrompt: .ASCIZ "Computer Win\n"

PlayerWinPrompt: .ASCIZ "Player Win\n"