

Conditionals

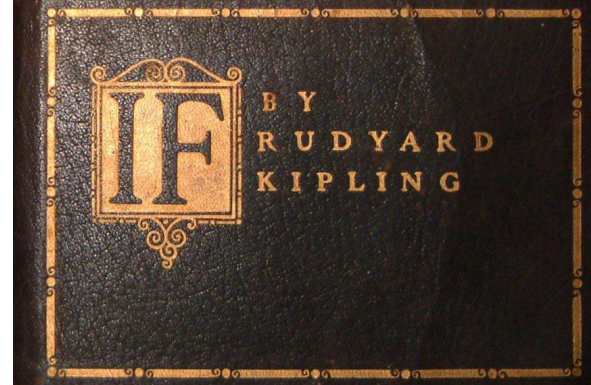
Conditional Pseudocode

If <statement>

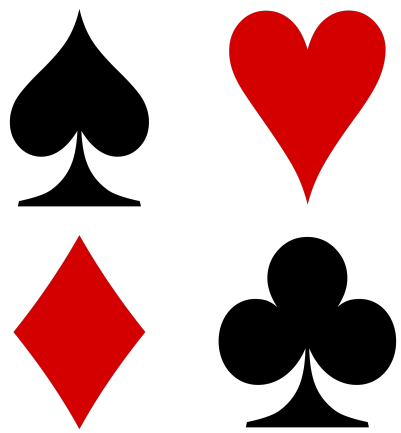
← *Tab* → /* Code that occurs if the statement is true */

Else

← *Tab* → /*Code that occurs if the statement is false */



Conditional Pseudocode: Card Game V1

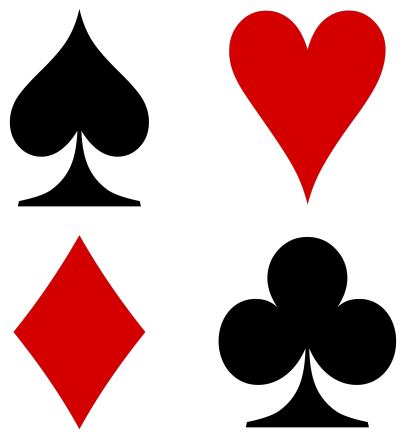


Pseudocode Review

1. Identify inputs, outputs, and assumptions
2. Define and set variables (denoted by $< >$)
3. Write general code (can be understood by a human, but can be easily translated into C code)



Conditional Pseudocode: Card Game V1



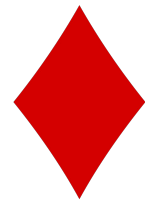
Inputs: One variable will be defined as red (r) or black (b)

Outputs: The scores of each team

Assumptions: The cards used will only be red or black



Conditional Pseudocode - Card Game V1



Variable Initialization

<card> = 'r'

<window_score> = 0

<hallway_score> = 0



Conditional Pseudocode - Card Game V1



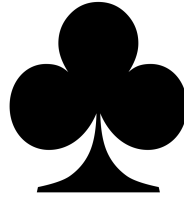
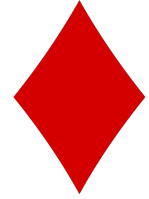
If statement

If card equals 'r'

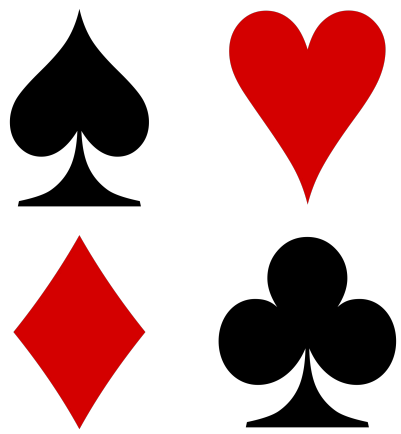
<window_score> = <window_score> + 1

Else

<hallway_score> = <hallway_score> + 1



Conditional Pseudocode - Card Game V1



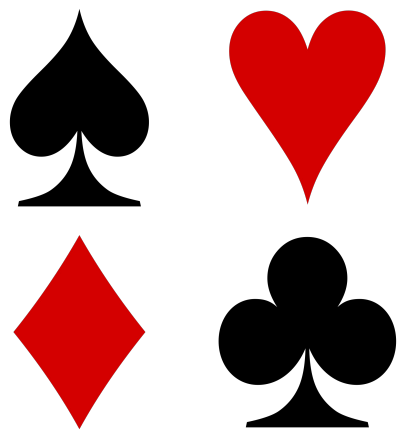
Outputs

Display "The window score is <window_score>"

Display "The hallway score is <hallway_score>"



Conditional Pseudocode - Card Game V1



<card> = 'r'

<window_score> = 0

<hallway_score> = 0

If card equals 'r'

 <window_score> = <window_score> + 1

Else

 <hallway_score> = <hallway_score> + 1

Display "The window score is <window_score>"

Display "The hallway score is <hallway_score>"



Relational Operators

“Equals” $\rightarrow ==$

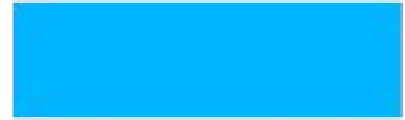
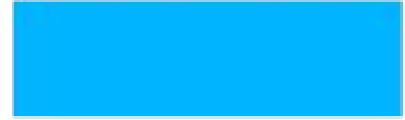
“Does not equal” $\rightarrow !=$

“Less than” $\rightarrow <$

“Greater than” $\rightarrow >$

“Greater than or equal to” $\rightarrow \geq$

“Less than or equal to” $\rightarrow \leq$



If/Else statement coding - C

All code within the if statement is indented and within curly braces

```
If (statement) {  
    /*Code goes here*/  
} else {  
    /*More code goes here*/  
}
```

The else statement (if present) is joined to the if statement



SCANNING IN VARIABLES

Use *scanf()* to scan in a variable from the user

Three parts:

1. `scanf` → scans a variable from the user
2. `(<variable sign>`, → takes in a specific type of variable (int: %d;
Float: %f; char: %c)
3. `&<variable_name>;` → The name of the variable being scanned, WITH
AN AMPERSAND IN FRONT

SCANNING IN VARIABLES

```
#include <stdio.h>
```

```
int main(void) {
```

```
    int month;
```

```
    scanf("Enter a number: %d",  
&month);
```

```
    printf("The month is: %d\n");
```

```
    return 0;
```

```
}
```


/*Initializes a variable*/

/*Scans in a number from the user*/

/*Prints out that number*/

scanf/if Practice

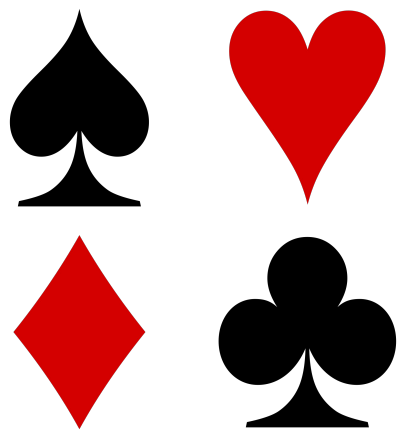
2 Parts:

1. Scan a variable into a variable named `<month>`, and print it out
 3. Value-check `<month>` using if statements
 - a. `<month>` only be between 1-12 (inclusive)
 - b. If it is, print out the number of the month
 - c. If it is not, print out the error message, "This month does not exist"
 4. Write this in a file called *month.c* and submit to Github
- 

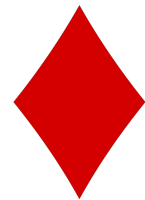
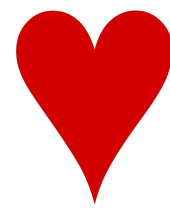
Card Game V2

Hallway side gets a point if card value is greater than 10, or if card value is less than 4

Window side gets a point otherwise



Conditional Pseudocode - Card Game V2



Variable Initialization

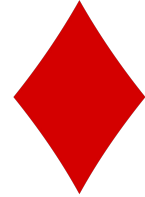
<card> = 10

<window_score> = 0

<hallway_score> = 0



Conditional Pseudocode - Card Game V2



If/Else if statement

If card greater than 10

$\text{<hallway_score> = <hallway_score> + 1}$

Else if card less than 4

$\text{<hallway_score> = <hallway_score> + 1}$

Else

$\text{<window_score> = <window_score> + 1}$



If/Else If/Else statement coding - C

```
If <statement> {  
    /*Code goes here*/  
}  
else if <statement>{  
    /*More code goes here*/  
}  
else {  
    /*More code*/  
}
```

