STEAM CLOWN™ PRODUCTIONS

ARDUINO STEAM ACADEMY

Art without Engineering is dreaming. Engineering without Art is calculating.

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IF / ELSE / ELSE IF

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CAN I GET A COPY OF THESE SLIDES? YES, PROBABLY…

Most presentation lecture slides can be found indexed on www.steamclown.org and maybe blogged about here on Jim The STEAM Clown's Blog, where you can search for the presentation title. While you are there, sign up for email updates

If you are on of my SVCTE Mechatronics Engineering Students, Look here on the SVCTE Mechatronics Engineering Blog: https://svctemechatronics.blogspot.com/

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Resources & Materials Needed

- Arduino
- Bread board, LED, switch, jumper wires
- Computer and access to internet

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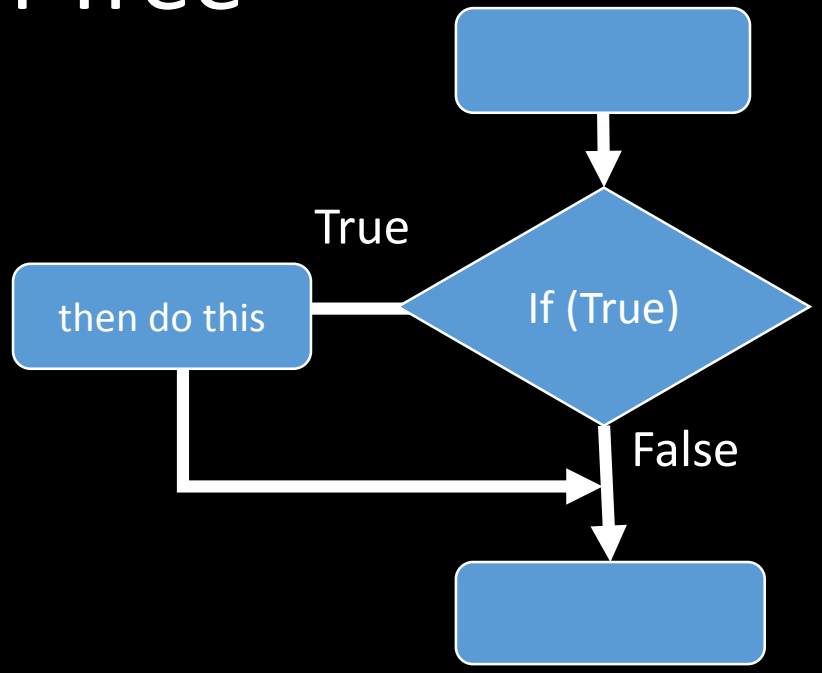
New Words or Concepts...

- Conditional
  - Statements that only run under certain conditions
- Decision Tree



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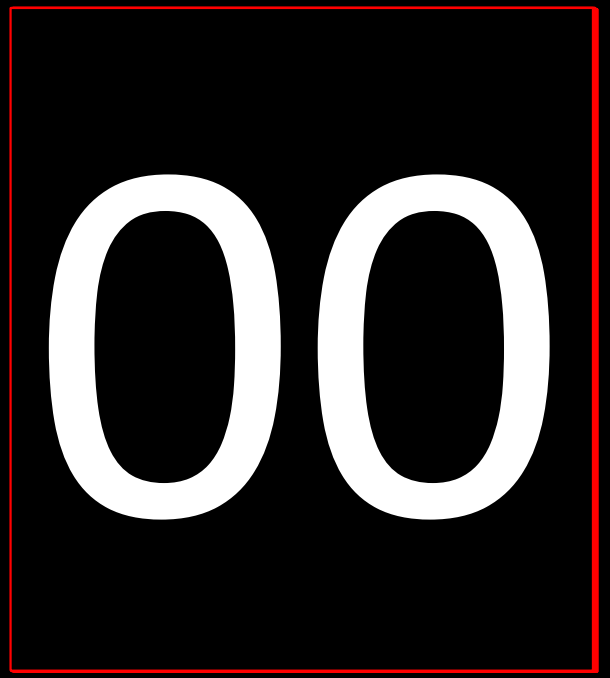
CONDITIONAL

- If you **ALL** can be **COMPLETELY QUIET** for thirty seconds, we will take a break after the Lecture/Lab

Ready?... GO!!!



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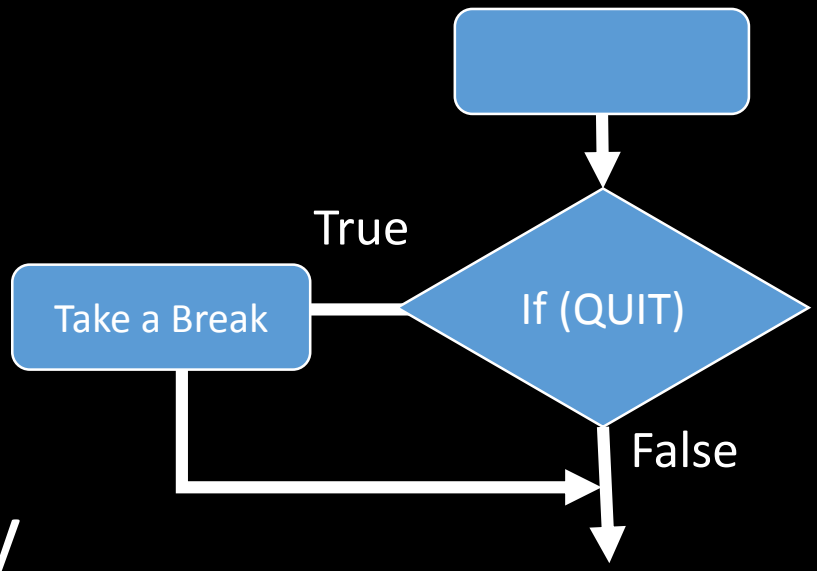
What was the *condition*?

- "What was the *condition* of the reward?“
- The condition was *IF* you were quiet for 30 seconds
  - If you were, the condition would be true, and you would get the reward
  - If you weren't, the condition would be false, so the reward would not apply



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Come up with some more conditionals

- If you can guess my favorite movie correctly, the class can give you applause.
- If you know an answer, you can raise your hand.
- Tell me some other examples of a conditional test

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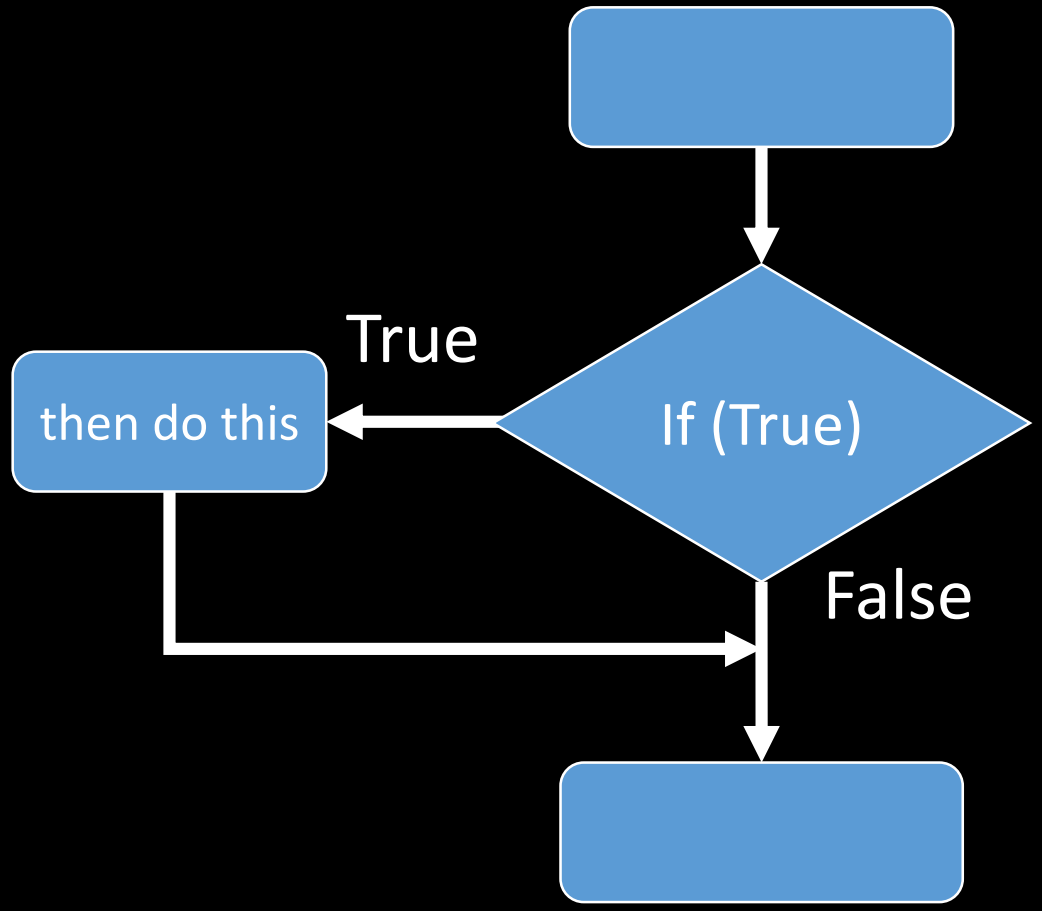
IF STATEMENT

```
If (Statement Evaluated As True)
{
    //do something here
}
```

```
If (someVariable == 50)
{
    //do something here
}
```

```
If (someVariable > 50)
{
    //do something here
}
```

```
If (someVariable == anotherVariable)
{
    //do something here
}
```



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IF / ELSE

- Sometimes, we want to have an extra condition, in case the "IF" statement is not true.
- This extra condition is called an "ELSE" statement
- When the "IF" condition isn't met, we can look at the "ELSE" for what to do
  - IF (I draw a 7, everybody claps)
  - ELSE (everyone says "Awwwe.")

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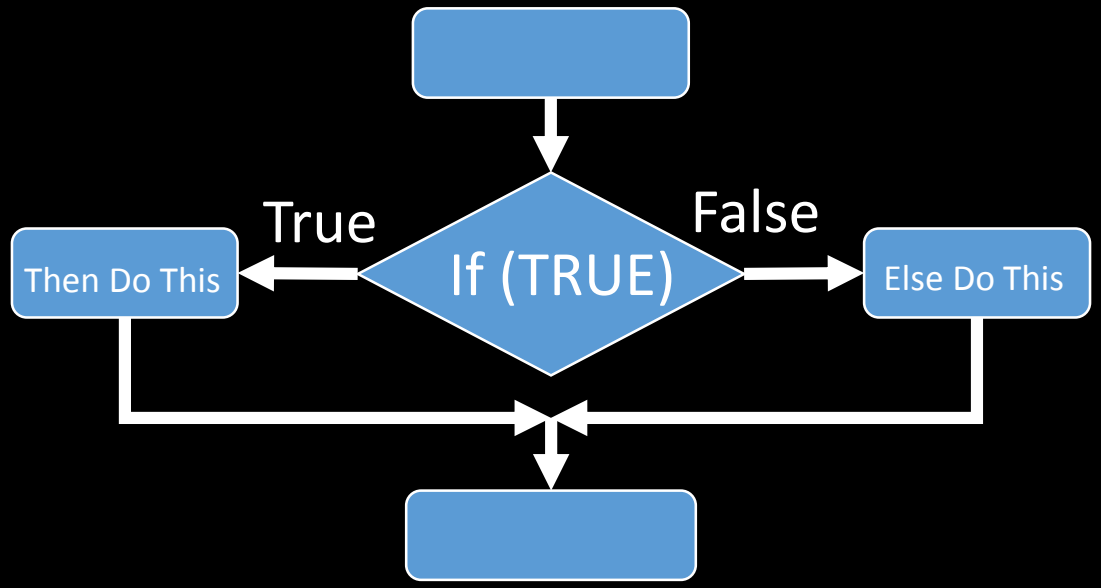
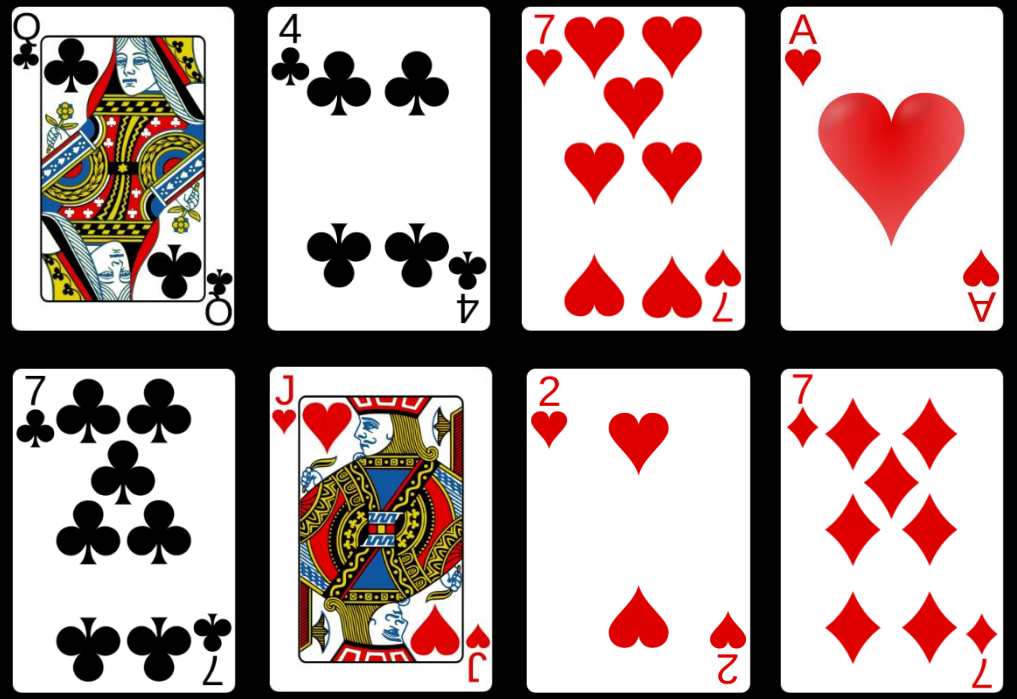
IF ELSE STATEMENT

IF (I draw a 7, everybody claps)
ELSE (everyone says "Awwwe.")





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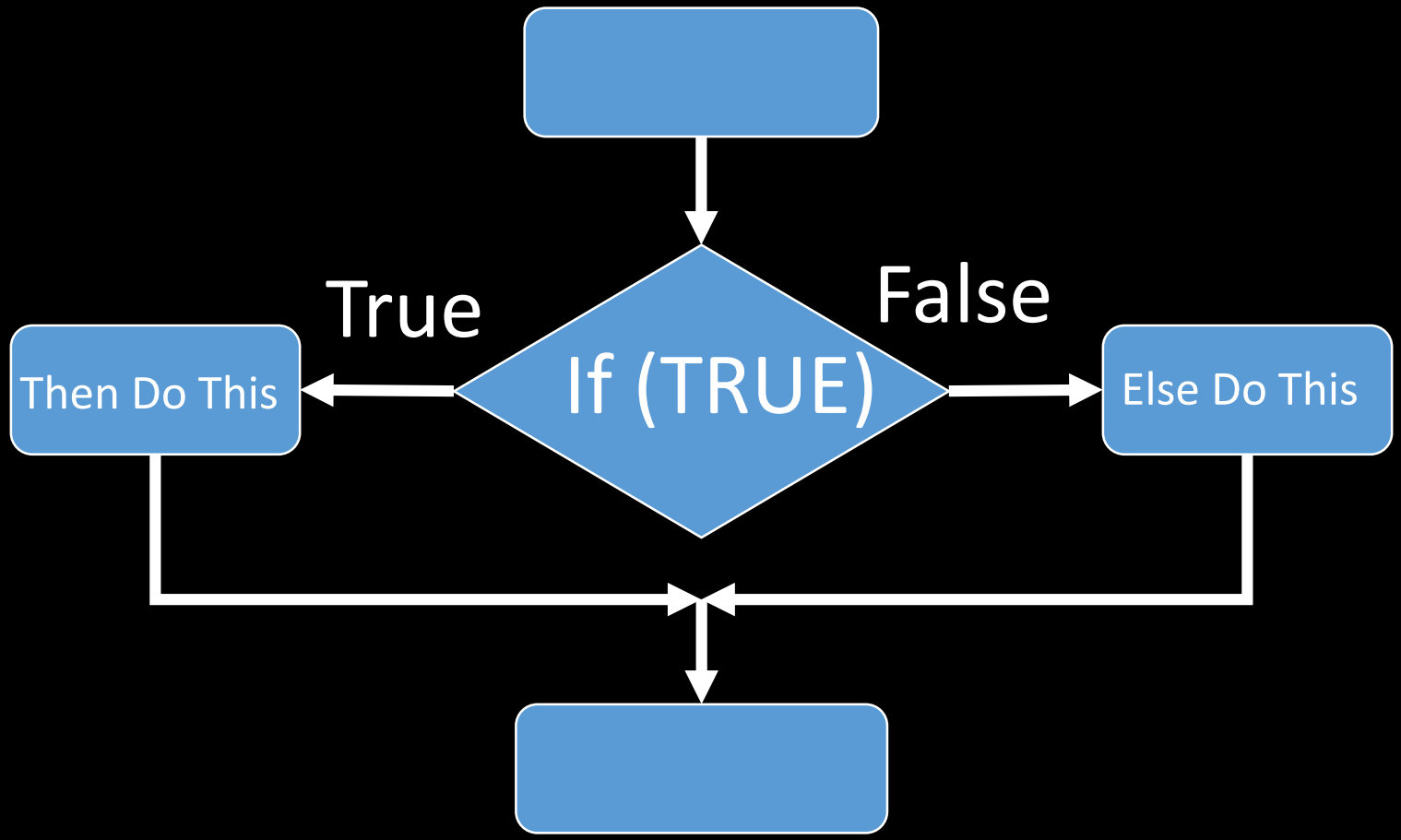
IF ELSE STATEMENT

```
if (someVariable < 500)
{
  // action A
}
else
{
  // action B
}
```



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Go Download a Blink Sketch

- pushButton_LED_3_STEAMClown – on my Github in the arduinoCode repository
  - https://github.com/jimTheSTEAMClown/arduinoCode/blob/master/pushButton_LED_3_STEAMClown
- Open the Arduino IDE and load and run the pushButton_LED_3_STEAMClown sketch
- What pin is the pushButton connected to?

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PUSHBUTTON_LED_3_STEAMCLOWN

```
void loop()
{
  buttonStatus = digitalRead(buttonPin);
  if (buttonStatus == HIGH)
  {
    digitalWrite(LED, HIGH);
    Serial.println ("Detected PushButton signal");
    // This is where you would put code that you wanted to happen when
    // buttonStatus is HIGH
    delay(100);
  }
  else                  // comment - buttonStatus == LOW
  {
    digitalWrite(LED, LOW);
    Serial.println ("Waiting to Detect pushButton signal");
    // This is where you would put code that you wanted to happen when
    // buttonStatus is LOW
    delay(100);
  }
}
```

What is this code doing?

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IF / ELSE IF / ELSE

- Sometimes, we want to have an extra ELSE IF test condition, in case the "IF" statement is not true.
- When the "IF" condition isn't met, we can look at and additional "ELSE IF" for a 2nd test and if that condition is also not met, then we execute the "ELSE"
  - IF (I draw a 7, everybody claps)
  - ELSE IF (The card is less than 7 say “YAY")
  - ELSE (You say "Awwwe.")

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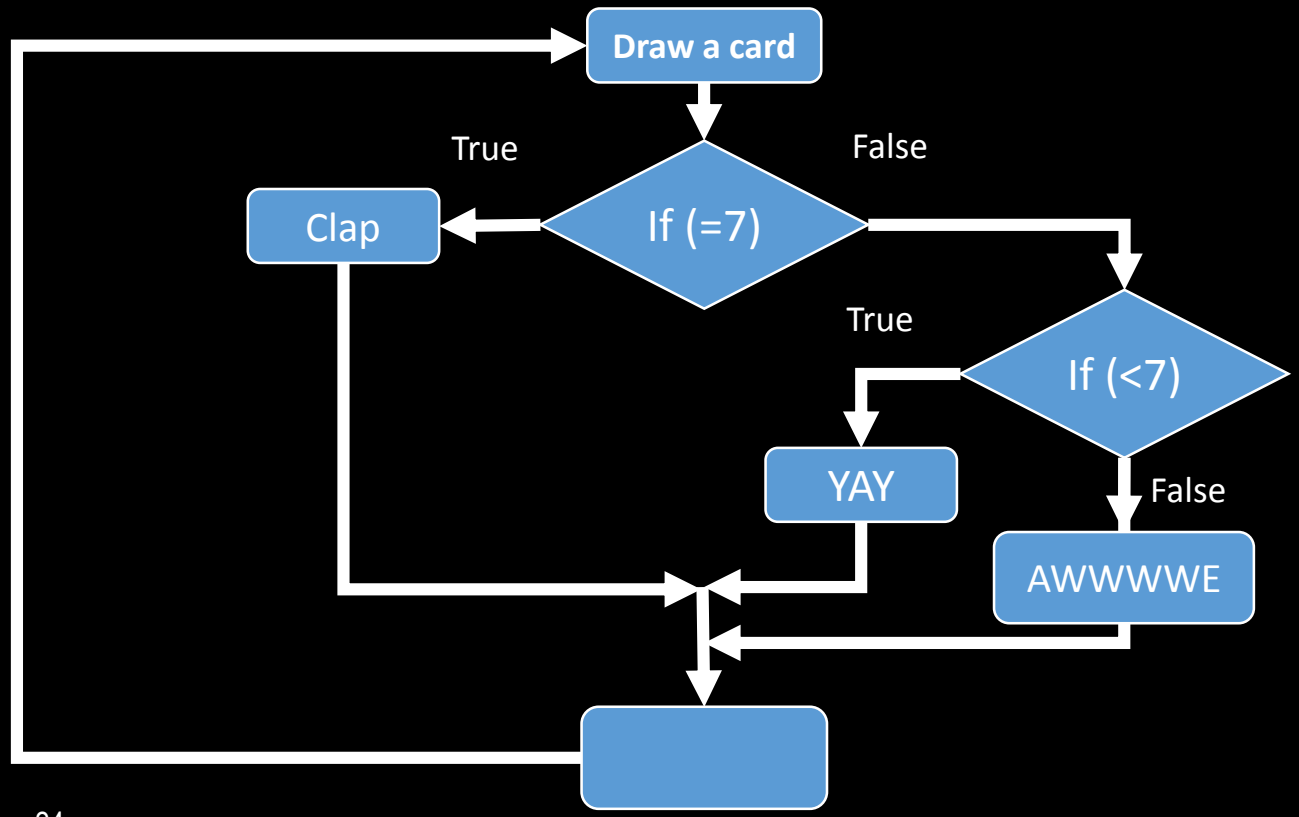
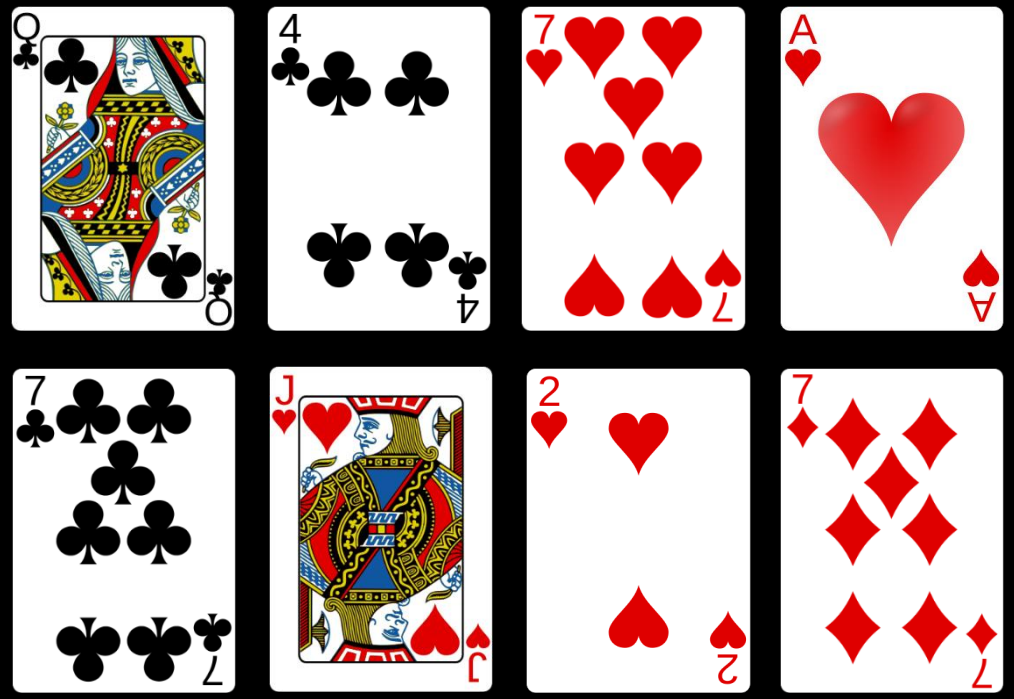
IF / ELSE IF / ELSE

IF (I draw a 7, everybody claps)
ELSE IF (Card is less than 7 say “YAY")
ELSE (You say "Awwwe.")





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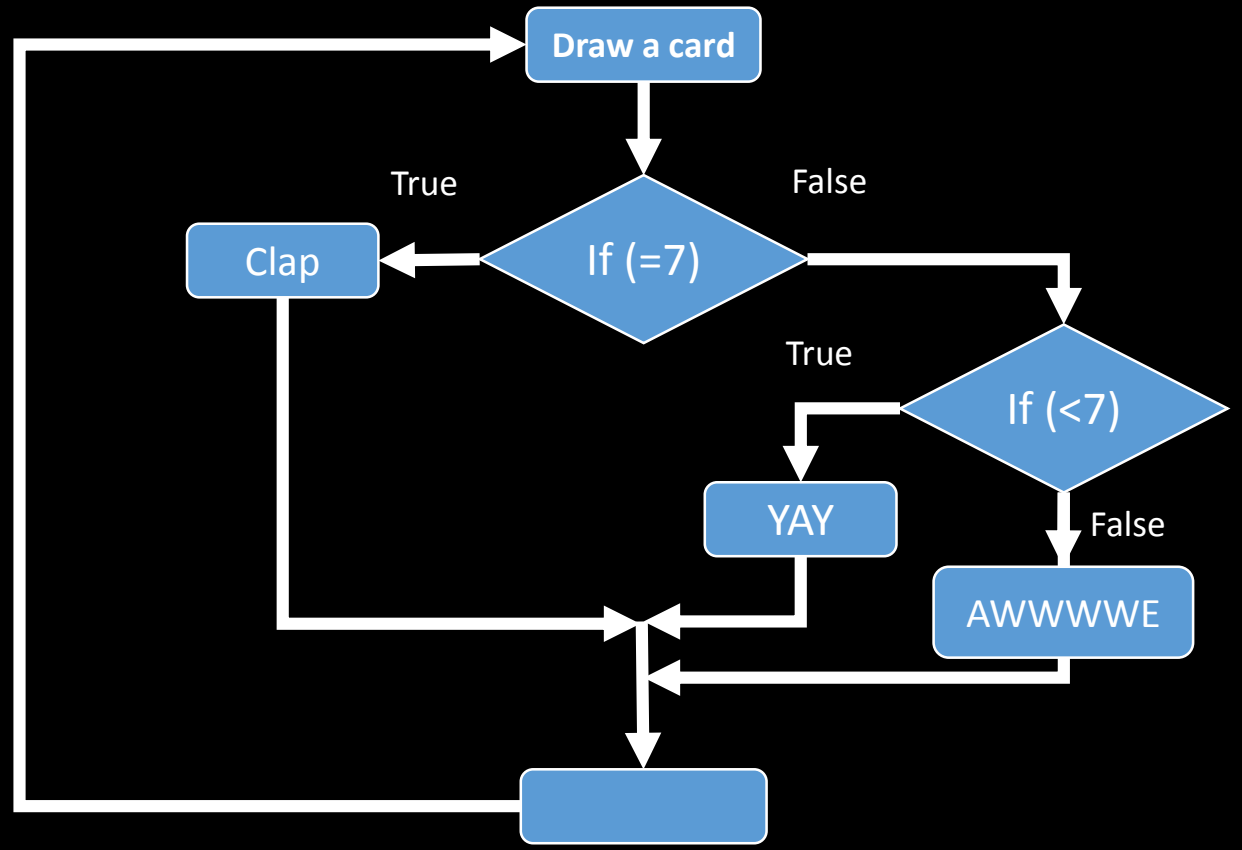
IF ELSE STATEMENT

```
if (someVariable < 500)
{
  // do Thing A
}
else if (someVariable >= 1000)
{
  // do Thing B
}
else
{
  // do Thing C
}
```



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IF ELSE STATEMENT

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}
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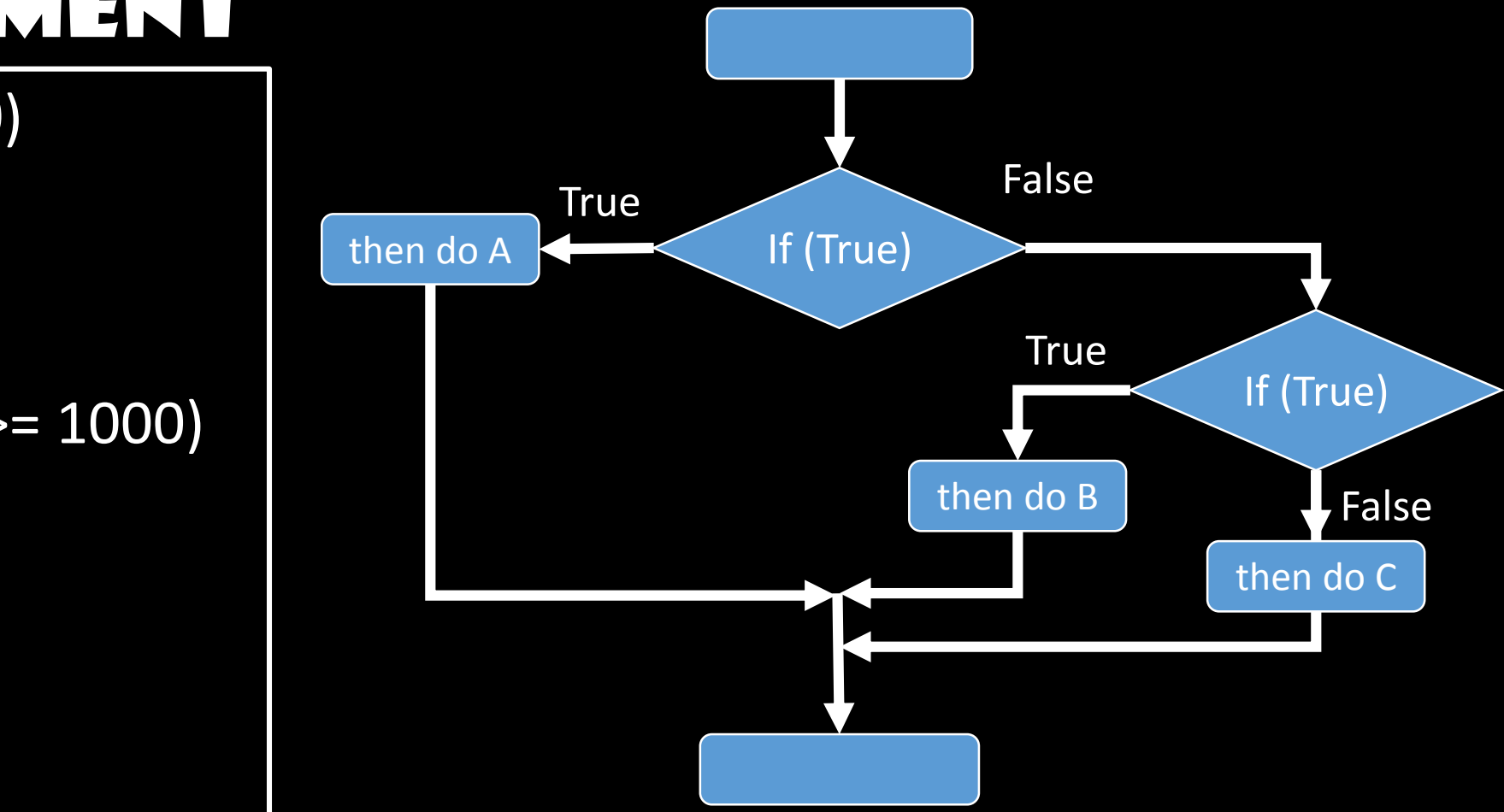

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