Lecture Notes – penultimate class 😊
Rock, Paper, Scissors

\[ R > S \]
\[ S > P \]
\[ P > R \]

Score \leftarrow \text{update}

Do you want to play again

1. Logic - Win
2. Score
3. Play again
4. Move/Turn
5. Computer Selection
6. Your Selection

Random Selection

You vs Computer

\{ R, P, S \}
```javascript
var userChoice, computerChoice, userScore, computerScore;

string "rock", "paper", "scissors";

prompt: do you want to play?

"yes" -

prompt: ask user: R P S

(pull down menu selects constrained choices)

computer selects choice

random function R P S

return scores

text area types: validate info

no

0 0
```
user
\[ \begin{array}{c}
R \\
P \\
S
\end{array} \]

comp
\[ \begin{array}{c}
R \\
P \\
S
\end{array} \]

IF 
\[ \begin{array}{c}
U = R \\
\& \& C = R
\end{array} \]

T 
tie

F

T 
user loses
\$\text{score}++$

F

F 
user wins
\$\text{score}++$

\[ \begin{array}{c|c|c}
A & B & \text{AND} \\
T & T & T \\
T & F & F \\
F & T & T \\
F & F & F
\end{array} \]
update score
Paper Beats Rock

Course written by Leng Lee

1. The Game
2. User Choice

We start by first wanting to pick the compare function:
1. Declare a variable.
2. Make the variable get by asking rock, paper or scissors.

```html
<title>Rock, Paper, Scissors - Let's Play</title>
<script>
  var userChoice = prompt("Do you choose rock, paper or scissors?");
</script>
<h1>Let's Play Rock Paper Scissors!</h1>
```
This page says

Do you choose rock, paper or scissors?

OK  Cancel
Remainder Function (Modulo 18)

\[ \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17\} \]

\[ 3 \cdot 0 \]

\[ \overline{319} \]
1. var userChoice = prompt("Do you choose rock, paper or scissors?");
2. var computerChoice = Math.random();
var userChoice = prompt("Do you choose rock, paper or scissors?");
var computerChoice = Math.random();
if(computerChoice<=0.33){
    computerChoice = 'rock';
} else if(0.33<computerChoice<=0.66){
    computerChoice = 'paper';
} else{
    computerChoice = 'scissors';
}
function compare(uC, cC) {{
  if (uC == 'rock') {
    user→win if cC == 'scissors';
    user→lose if cC == 'paper';
    user→tie if cC == 'rock';
  }
}}
\[ f(x) = x^2 + 1 \]
The switch statement is used to perform different actions based on different conditions.

The JavaScript Switch Statement

Use the switch statement to select one of many code blocks to be executed.

Syntax

```javascript
switch(expression) {
  case x:
    code block
    break;
  case y:
    code block
    break;
  default:
    code block
}
```

This is how it works:

- The switch expression is evaluated once.
- The value of the expression is compared with the values of each case.
- If there is a match, the associated block of code is executed.
switch (new Date().getDay()) {
    case 0:
        day = "Sunday";
        break;
    case 1:
        day = "Monday";
        break;
    case 2:
        day = "Tuesday";
        break;
    case 3:
        day = "Wednesday";
        break;
    case 4:
        day = "Thursday";
        break;
    case 5:
        day = "Friday";
        break;
    case 6:
        day = "Saturday";
}
```javascript
var winner;

if ( computerChoice <= 1/3){
    computerChoice = 'rock';
} else if(computerChoice <= 2/3){
    computerChoice = 'paper';
} else if (computerChoice <= 0){
    computerChoice = 'scissors';
}

if (userChoice == 'rock'){
    switch (computerChoice){
        case 'rock':
            winner = 'tie';
            break;

        case 'paper':
            winner = 'computer';
            break;

        case 'scissors':
            winner = 'user';
            break;
    }
```
if (userChoice == 'rock'){
  switch (computerChoice){
    case 'rock':
      winner = 'tie';
      break;
    case 'paper':
      winner = 'computer';
      break;
    case 'scissors':
      winner = 'user';
      break;
  }
}

} else if (userChoice == 'paper'){
  switch (computerChoice){
    case 'paper':
      winner = 'tie';
      break;
    case 'scissors':
      winner = 'computer';
      break;
    case 'rock':
      winner = 'user';
      break;
  }
}

} else {
  switch (computerChoice){
    case 'scissors':
      winner = 'tie';
      break;
    case 'rock':
      winner = 'computer';
      break;
    case 'paper':
      winner = 'user';
      break;
  }
}