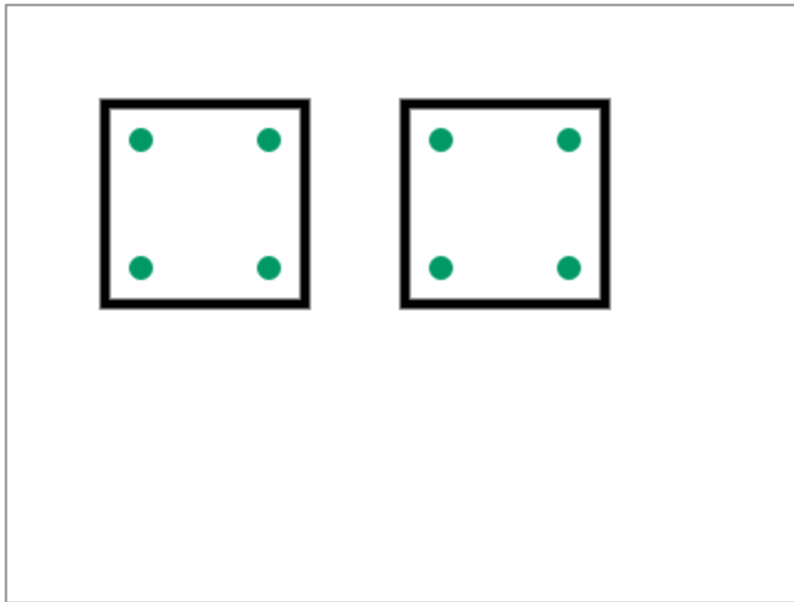# 주사위 게임

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충북대학교

주사위 게임 규칙

- 플레이어
  - 두 개의 주사위를 던졌을 때 두 주사위 윗면 숫자의 합
  - The First Throw(두 주사위의 합)
    - 합: 7 혹은 11 => Win
    - 합: 2, 3, 혹은 12 => Lost
    - 합: 4, 5, 6, 8, 9, 10 => rethrow
  - The Second Throw
    - 합: 첫번째 던진 주사위 합과 같은면 => Win
    - 합: 그렇지 않으면 => Lost

주사위 게임 화면

canvas

주사위던지기

판: 다시 던지세요.   포인트: 8   결과:

form

HTML Forms

주사위던지기
판: 다시 던지세요. 포인트: 8 결과:

- 사용자 입력의 다른 종류를 선택하기 위해 사용
- Create text fields
  문장 필드에 문자열을 쓸 수 있게 함
- Create password field
  비밀번호 필드를 생성하여 입력하게 함

HTML Forms

- 데이터를 서버에 전달하기 위해 사용될 수 있음
- 입력 요소: text fields, checkboxes, radio-buttons, submit buttons and more. select lists, textarea, fieldset, legend, and label elements.
- <form> 태그 사용

```
<form>
.
input elements
.
</form>
```

HTML Forms

- ## <input> 요소
  - text field, checkbox, password, radio button, submit button, and more.

```
<form>
First name:< input type="text"
name="firstname"><br>
Last name:< input type="text"
name="lastname">
< /form>
```

```
<form>
Password:< input type="password"
name="pwd">
< /form>
```

```
<form name="input"
action="html_form_action.asp"
method="get">
Username: <input type="text"
name="user">
<input type="submit" value="Submit">
< /form>
```

```html
<!DOCTYPE html>
<html>
<body>

<h3>Send e-mail to khyoo@chungbuk.ac.kr:</h3>

<form action="MAILTO:khyoo@chungbuk.ac.kr" method="post"
enctype="text/plain">
Name:<br>
<input type="text" name="name" value="your name"><br>
E-mail:<br>
<input type="text" name="mail" value="your email"><br>
Comment:<br>
<input type="text" name="comment" value="your comment"
size="50"><br><br>
<input type="submit" value="Send">
<input type="reset" value="Reset">
</form>

</body>
</html>
```

Send e-mail to someone@example.com:

Name:
[your name]
E-mail:
[your email]
Comment:
[your comment]

[Send] [Reset]

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HTML Forms Tag

Tag	Description
<form>	Defines an HTML form for user input
<input>	Defines an input control
<textarea>	Defines a multiline input control (text area)
<label>	Defines a label for an <input> element
<fieldset>	Groups related elements in a form
<legend>	Defines a caption for a <fieldset> element
<select>	Defines a drop-down list
<optgroup>	Defines a group of related options in a drop-down list
<option>	Defines an option in a drop-down list
<button>	Defines a clickable button
<datalist> 5	Specifies a list of pre-defined options for input controls
<keygen> 5	Defines a key-pair generator field (for forms)
<output> 5	Defines the result of a calculation

HTML Forms

주사위던지기

판: 다시 던지세요.   포인트: 8   결과:
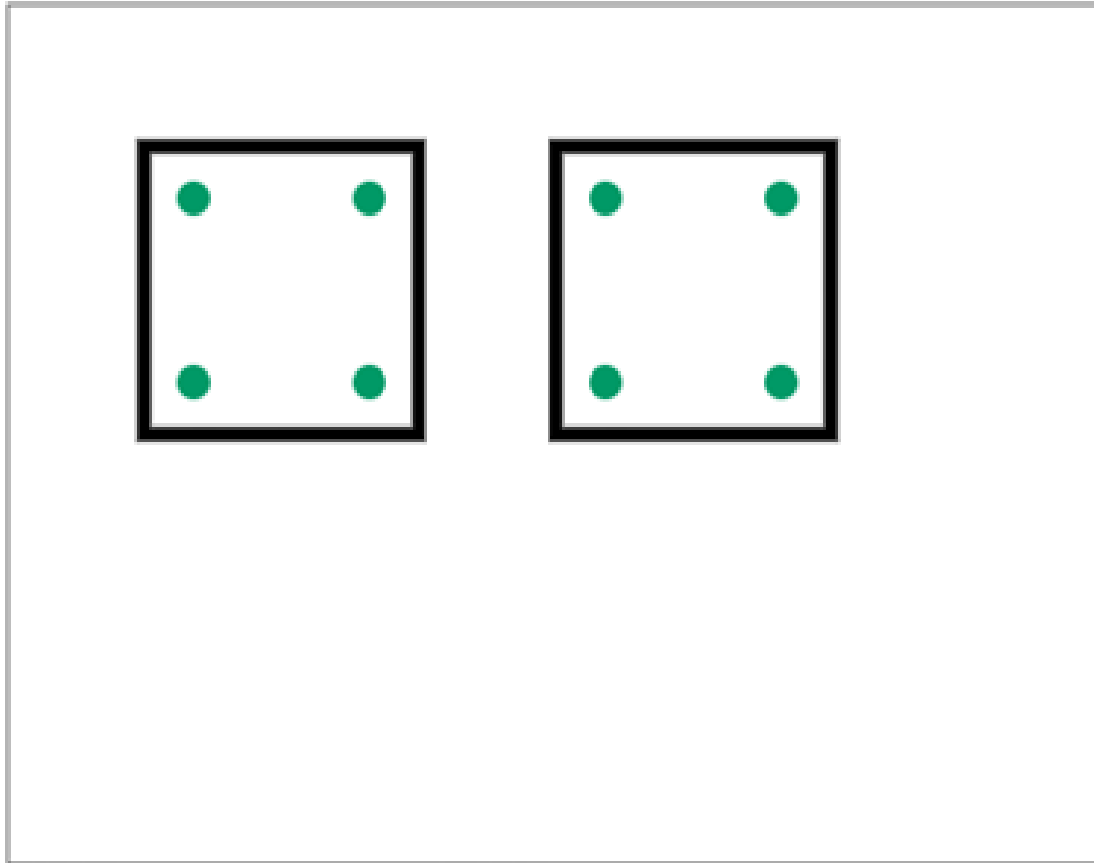
<button onClick="throwdice();"> 주사위던지기 </button>
<form name="f" id="f">
 판: <input name="stage" value="첫 번째 던지기"/>
 포인트: <input name="pv" value="   "/>
 결과: <input name="outcome" value="   "/>
 </form>

document.f.stage.value="새로 시작";
document.f.pv.value=sum;
document.f.outcome.value = " 이겼습니다.";

주사위 그림 그리기

Canvas

- <canvas> 태그: JavaScript를 통해 그래픽스를 그릴 때 사용
- <canvas> 요소는 그리는 능력은 없음
- 그래픽스를 그리기 위해서는 JavaScript를 사용
- getContext() method: an object(methods and properties for drawing on the canvas)
- getContext("2d") object: text, lines, boxes, circles, and more - on the canvas.

Canvas 예

```
<!doctype html>
<html lang="en">
 <head>
  <meta charset="UTF-8">
  <title>Canvas 예 </title>
  <script>
   function init() {
     var ctx =
document.getElementById("canvas").getC
ontext("2d");
        ctx.strokeStyle="rgb(200,0,0)";
        ctx.clearRect(0, 0, 400, 300);
        ctx.strokeRect(0, 0, 400, 300);
        ctx.stroke();
   }
  </script>
 </head>
```

```
<body onLoad="init();">
 <canvas id="canvas" width = "400"
height="300">
  이 브라우져는 HTML5의 Canvas 요소를
지원하지 않습니다.
 </canvas>
 <br/>
 </body>
</html>
```
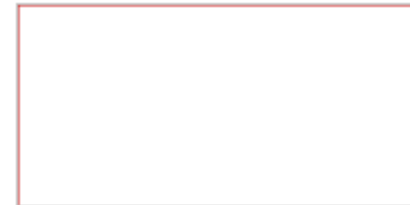
Canvas 지원 기능

- Color, Styles, Shadows
- Line Styles
- Rectangles
- Paths(line, Polyline, Arc, Curve)
- Transformations
- Text
- Image Drawing
- Pixel Manipulation
- Compositing

Canvas Rectangles

```
<script>
var c = document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.fillStyle = "#FF0000";
ctx.fillRect(0,0,150,75);
< /script>
```

```
<script>
var c = document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.lineWidth=5;
ctx.strokeStyle = "rgb(255,0,0)";
ctx.strokeRect(0,0,150,75);
< /script>
```

Canvas 선그리기

- moveTo(*x,y*) defines the starting point of the line
- lineTo(*x,y*) defines the ending point of the line
- stroke() method to actually draw the line

```
var c =
document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.moveTo(0,0);
ctx.lineTo(200,100);
ctx.stroke();
```

Canvas 원 그리기

- arc(cx, cy, radius, start_angle, end_angle, direction)
- cx,cy: 원의 중심, radius: 반지름, start_angle, edm_angle: radian, direction(true): CCW

```
var c =
document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.beginPath();
ctx.strokeStyle="rgb(255,0,0)";
ctx.arc(200,200,50,0,Math.PI, false);
ctx.stroke();
```
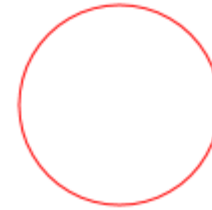
```
ctx.beginPath();
ctx.strokeStyle="rgb(255,0,0)";
ctx.arc(200,200,50,0,Math.PI, false);
ctx.closePath();
ctx.stroke();
```
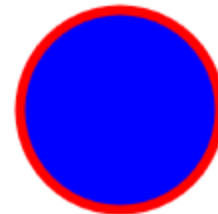
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Canvas 원 그리기

```
var c = document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.beginPath();
ctx.strokeStyle="rgb(255,0,0)";
ctx.arc(200,200,50,0,Math.PI*2, false);
ctx.stroke();
```

```
Ctx.lineWidth=5;
ctx.strokeStyle="rgb(255,0,0)";
ctx.fillStyle="rgb(0,0,255)";
ctx.arc(200,200,50,0, Math.PI*2, false);
ctx.closePath();
ctx.fill();
ctx.lineWidth=5;
ctx.stroke();
```

Canvas 주사위 그리기

```
<!DOCTYPE html>
<html>
<body>
<canvas id="myCanvas" width="150" height="150"
style="border:1px solid #d3d3d3;">
Your browser does not support the HTML5 canvas
tag.</canvas>

<script>
var c=document.getElementById("myCanvas");
var ctx=c.getContext("2d");

ctx.arc(50,50,10,0,2*Math.PI); ctx.closePath();
ctx.arc(110,50,10,0,2*Math.PI); ctx.closePath();
ctx.arc(50,80,10,0,2*Math.PI);ctx.closePath();
ctx.arc(110,80,10,0,2*Math.PI);ctx.closePath();
ctx.arc(50,110,10,0,2*Math.PI);ctx.closePath();
ctx.arc(110,110,10,0,2*Math.PI);ctx.closePath();
ctx.fill();
</script>
</body>
</html>
```
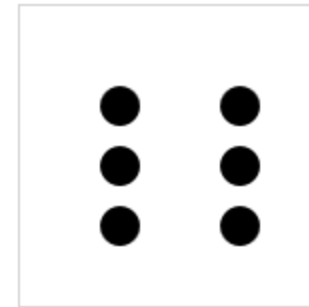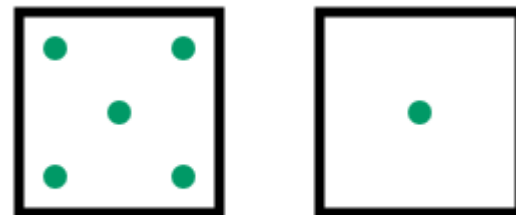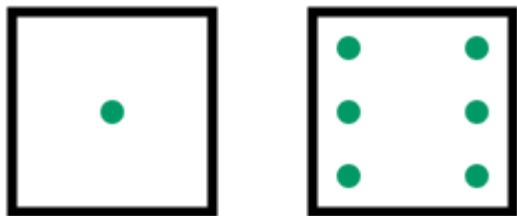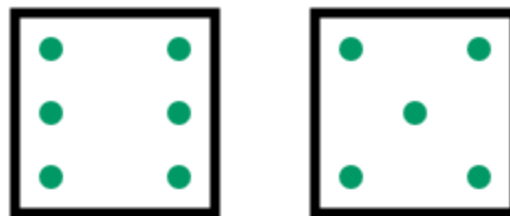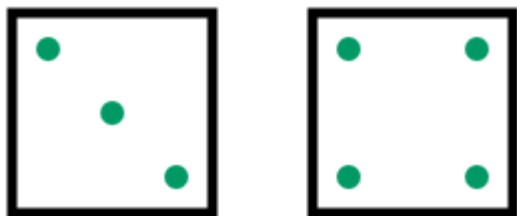
주사위 게임 규칙

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던진 주사위의 상태를 그리기

canvas

```html
<!doctype html>
<html lang="kr">
 <head>
 <script>
   function throwdice() {

   }
 </script>

<body>
 <canvas id="canvas" width = "400" height="300">
 이 브라우져는 HTML5의 Canvas 요소를 지원하지 않습니다.
 </canvas>
 <br/>

 <button onClick="throwdice();"> 주사위던지기 </button>
 </body>
</html>
```

```
<script>
var cwidth=400;
  var cheight = 300;
  var dicex=50;
  var dicey=50;
  var dicewidth=100;
  var diceheight = 100;
  var dotrad=6;
  var ctx;
  var dx;
  var dy;

  function throwdice() {
   var ch=1+Math.floor(Math.random()*6);
   dx = dicex;
   dy = dicey;
   drawface(ch);
   dx=dicex+150
   ch=1+Math.floor(Math.random()*6);
   drawface(ch);
  }

function drawface(n) {
   ctx=document.getElementById('canvas').getContext('2d
   ctx.lineWidth=5;
   ctx.clearRect(dx, dy, dicewidth, diceheight);
   ctx.strokeRect(dx, dy, dicewidth, diceheight);
   var dotx;
   var doty;
   ctx.fillStyle="#009966";
  switch(n) {
   case 1: draw1(); break;
   case 2: draw2(); break;
   case 3: draw2(); draw1(); break;
   case 4: draw4(); break;
   case 5: draw4(); draw1(); break;
   case 6: draw4(); draw2mid(); break;
  }
}

</script>
```