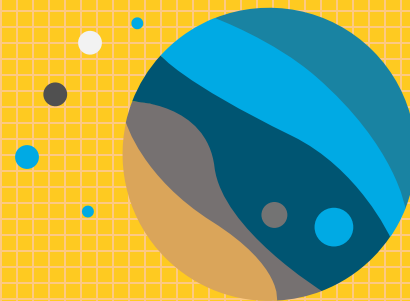


Html canvas

게임프로그래밍 발표

2019775031 성재원



목차

Table of contents

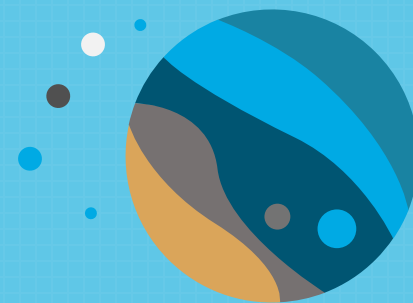
- 1 게임 소개
- 2 코드 설명
- 3 게임 시연
- 4 보완할 점



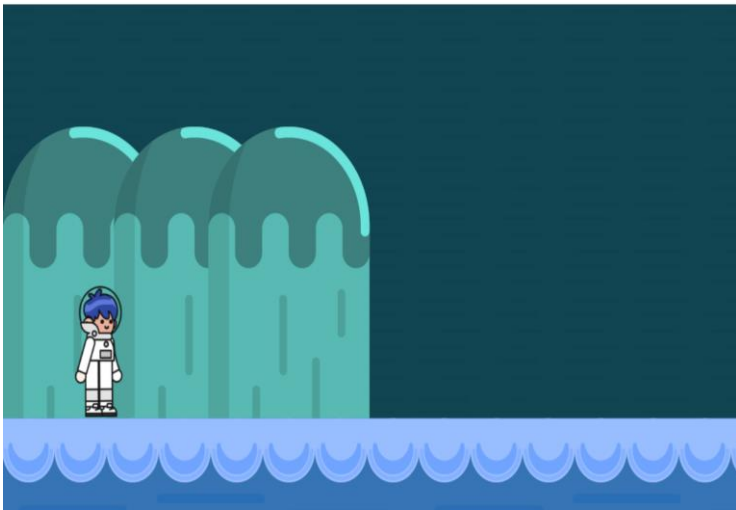


Part 1

게임 소개



게임 소개



플레이어 캐릭터를
wasd로 움직일
수 있음

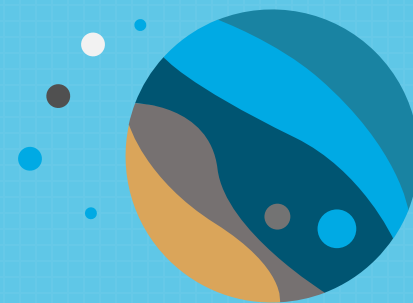


구멍에 빠지면
다시 처음부터
시작



Part 2

코드 설명



코드 소개

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <title>GameProject</title>
    <style>
      body {
        margin: 0;
        display: flex;
        align-items: center;
        justify-content: center;
        height: 100vh;
      }
    </style>
  </head>
  <body>
    <canvas></canvas>
  </body>
</html>
```

코드 소개

```
import platform from '../img/platform.png'
import hills from '../img/hills.png'
import background from '../img/background.png'
import spriteRunRight from '../img/spriteRunRight.png'
import spriteStandRight from '../img/spriteStandRight.png'
import platformSmallTall from '../img/platformSmallTall.png'
const canvas = document.querySelector('canvas')
const c= canvas.getContext('2d')

canvas.width = 1024
canvas.height = 576

const gravity = 0.5
```

코드 소개

```
class Player {
  constructor() {
    this.speed = 5
    this.position = {
      x: 100,
      y: 100
    }
    this.velocity = {
      x: 0,
      y: 3
    }
    this.width = 66
    this.height = 150

    this.image = createImage(spriteStandRight)
    this.frames = 0
    this.sprites = {
      stand: {
        right: createImage(spriteStandRight),
        cropWidth: 177,
        width: 66
      },
      run: {
        right: createImage(spriteRunRight),
        cropWidth: 341,
        width: 127.875
      }
    }

    this.currentSprite = this.sprites.stand.right
    this.currentCropWidth = 177
  }
}
```

```
draw() {
  c.drawImage(
    this.currentSprite,
    this.currentCropWidth * this.frames,
    0, this.currentCropWidth,
    400, this.position.x, this.position.y,
    this.width, this.height)
}

update() {
  this.frames++
  if (this.frames > 59 && this.currentSprite === this.sprites.stand.right) this.frames = 0
  else if (this.frames > 29 && this.currentSprite === this.sprites.run.right) this.frames = 0
  this.draw()
  this.position.x += this.velocity.x
  this.position.y += this.velocity.y

  if (this.position.y + this.height + this.velocity.y <= canvas.height)
    this.velocity.y += gravity
}
```


코드 소개

```
class Platform {  
    constructor({x, y, image}) {  
        this.position = {  
            x,  
            y  
        }  
        this.image = image  
        this.width = image.width  
        this.height = image.height  
    }  
  
    draw() {  
        c.drawImage(this.image, this.position.x, this.position.y)  
    }  
}
```

```
class GenericObject {  
    constructor({x, y, image}) {  
        this.position = {  
            x,  
            y  
        }  
        this.image = image  
        this.width = image.width  
        this.height = image.height  
    }  
  
    draw() {  
        c.drawImage(this.image, this.position.x, this.position.y)  
    }  
}
```

코드 소개

```
function createImage(imageSrc) {  
  const image = new Image()  
  image.src = imageSrc  
  return image  
}  
  
let platformImage = createImage(platform)  
let platformSmallTallImage = createImage(platformSmallTall)  
  
let player = new Player()  
let platforms = []  
let genericObject = []  
let keys = {  
  right: {  
    pressed: false  
  },  
  left: {  
    pressed: false  
  }  
}  
  
let scrollOffset = 0
```

코드 소개

```
function init() {  
    platformImage = createImage(platform)  
  
    player = new Player()  
    platforms = [  
        new Platform({x: platformImage.width*4+300-2+platformImage.width - platformSmallTallImage.width, y: 270, image: createImage(platformSmallTall)}),  
        new Platform({x:-1, y:470, image: platformImage}), new Platform({x: platformImage.width-3, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*2+100, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*3+300, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*4+300-2, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*5+600-2, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*6+700-2, y: 470, image: createImage(platformSmallTall)}),  
        new Platform({x: platformImage.width*7+600-2, y: 270, image: createImage(platformSmallTall)}),  
        new Platform({x: platformImage.width*8+600-2, y: 270, image: createImage(platformSmallTall)}),  
        new Platform({x: platformImage.width*9+600-2, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*12+300-2+platformImage.width - platformSmallTallImage.width, y: 270, image: createImage(platformSmallTall)}),  
        new Platform({x:-1, y:470, image: platformImage}), new Platform({x: platformImage.width-3, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*10+100, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*11+300, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*12+300-2, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*13+600-2, y: 470, image: platformImage}),  
        new Platform({x: platformImage.width*14+700-2, y: 470, image: createImage(platformSmallTall)}),  
        new Platform({x: platformImage.width*15+600-2, y: 270, image: createImage(platformSmallTall)}),  
        new Platform({x: platformImage.width*16+600-2, y: 270, image: createImage(platformSmallTall)}),  
        new Platform({x: platformImage.width*17+600-2, y: 470, image: platformImage}),  
    ]  
}
```

코드 소개

```
genericObject = [  
  new GenericObject({  
    x:-1,  
    y:-1,  
    image: createImage(background)  
  }),  
  new GenericObject({  
    x:-1,  
    y:-1,  
    image: createImage(hills)  
  })  
]  
  
scrollOffset = 0  
}
```

코드 소개

```
function animate() {  
  requestAnimationFrame(animate)  
  c.fillStyle = 'white'  
  c.fillRect(0, 0, canvas.width, canvas.height)  
  
  genericObject.forEach(genericObject => {  
    genericObject.draw()  
  })  
  platforms.forEach(platform => {  
    platform.draw()  
  })  
  player.update()  
}
```

```
if(keys.right.pressed && player.position.x < 400) {  
  player.velocity.x = player.speed  
}else if((keys.left.pressed && player.position.x > 100)  
|| (keys.left.pressed && scrollOffset === 0 && player.position.x>0)) {  
  player.velocity.x = -player.speed  
}else player.velocity.x = 0  
  if (keys.right.pressed) {  
    scrollOffset += player.speed  
    platforms.forEach((platform) => {  
      platform.position.x -= player.speed  
    })  
    genericObject.forEach(genericObject => {  
      genericObject.position.x -= player.speed * 0.66  
    })  
  } else if ( keys.left.pressed && scrollOffset > 0 ) {  
    scrollOffset -= player.speed  
    platforms.forEach((platform) => {  
      platform.position.x += player.speed  
    })  
    genericObject.forEach((genericObject) => {  
      genericObject.position.x += player.speed * 0.66  
    })  
  }  
}
```

코드 소개

```
platforms.forEach((platform) => {  
  if (player.position.y + player.height <= platform.position.y &&  
    player.position.y + player.height + player.velocity.y >= platform.position.y &&  
    player.position.x + player.width >= platform.position.x && player.position.x <= platform.position.x + platform.width) {  
    player.velocity.y = 0  
  }  
})  
// 승리  
if (scrollOffset > platformImage.width * 5 + 700 - 2) {  
  console.log('you win')  
}  
  
// 패배  
if (player.position.y > canvas.height) {  
  init()  
}
```

코드 소개

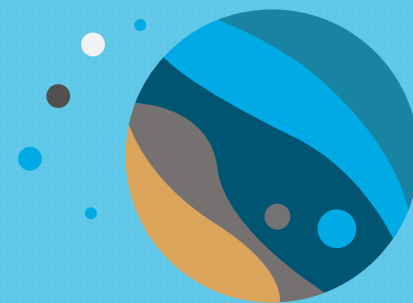
```
addEventListener('keydown', ({keyCode}) => {  
  console.log(keyCode)  
  switch (keyCode) {  
    case 65:  
      console.log('left')  
      keys.left.pressed = true  
      break;  
    case 83:  
      console.log('down')  
      break;  
    case 68:  
      console.log('right')  
      keys.right.pressed = true  
      player.currentSprite = player.sprites.run.right  
      player.currentCropWidth = player.sprites.run.cropWidth  
      player.width = player.sprites.run.width  
      break;  
    case 87:  
      console.log('up')  
      player.velocity.y -= 14  
      break;  
  }  
  console.log(keys.right.pressed)  
})
```

```
addEventListener('keyup', ({keyCode}) => {  
  console.log(keyCode)  
  switch (keyCode) {  
    case 65:  
      console.log('left')  
      keys.left.pressed = false  
      player.velocity.x += 0  
      break;  
    case 83:  
      console.log('down')  
      break;  
    case 68:  
      console.log('right')  
      keys.right.pressed = false  
      player.currentSprite = player.sprites.stand.right  
      player.currentCropWidth = player.sprites.stand.cropWidth  
      player.width = player.sprites.stand.width  
      break;  
    case 87:  
      console.log('up')  
      break;  
  }  
  console.log(keys.right.pressed)  
})
```



Part 3

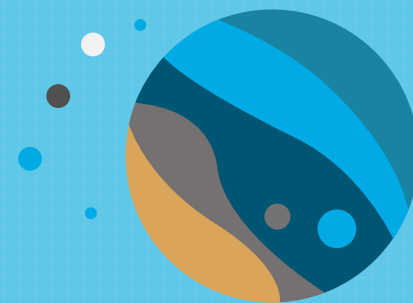
게임 시연





Part 4

보완할 점



제목을 입력하세요

- 움직이는 장애물 추가

- 점프 횟수 제한

- 게임 승리 이벤트

- 움직이는 몬스터 추가



출처

<https://www.youtube.com/watch?v=4q2wZn5aoo&t=200s>

‘Chris Courses ’

Yusaebyeol.blogspot.com/2022/07/powerpoint-template-free-download-z-ppt.html

감사합니다

