JOGOS EM REACT JS

O QUE É O REACT GAME

É um game estilo flappy bird que consiste em desviar o avatar SuperIF dos obstáculos.

O jogo também possui regras claras, nesse jogo em específico nós temos as seguintes:

- O jogador está caindo constantemente;
- Há obstáculos indo em direção ao jogador;
- Se o jogador tocar um dos obstáculos ele perde;
- Se o jogador tocar o topo ou o começo da tela ele perde.

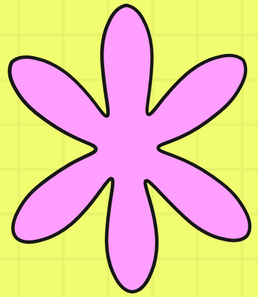
SOBRE O CÓDIGO

Pastas:

1. index.js
2. background.js
3. player.js
4. Obstacle.js
5. hud.js
6. style.css

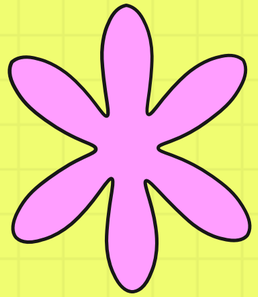
```
render() {

    return (
      <div id="wrapper" ref={(c) => this._wrapper = c}>
        <BgMusic
          gameOver={this.state.gameOver}
          running={this.state.running}
          mute={this.state.mute}
        />
        <Brackground
          gameOver={this.state.gameOver}
          running={this.state.running}
        >
          <Hud
            score={this.state.score}
            mute={this.state.mute}
            onMuteToogle={this.onMuteToogle}
          />
          <Player
            running={this.state.running}
            gameOver={this.state.gameOver}
            style={{
              left: `${INITIAL_LEFT}px`,
              top: `${this.state.top}px`
            }}
            ref={(c) => { this._player = c }}
          />
          {this.state.obstacles.map((o) => (
            <Obstacle
              key={o.index}
              left={o.left}
              onTop={o.onTop}
              width={OBSTACLE_WIDTH}
            />
          ))}
        </Brackground>
      </div>
```

INDEX.JS – INTERVALO



```
_onInterval () {
  const now = Date.now()
  this.setState((oldState) => {
    let { score, level, lastLeft, obstacleIndex } = oldState
    const { right, up, down } = this._controls
    this._resetControls()
    let obstacleSpeed = INITIAL_OBSTACLE_STEP + INITIAL_OBSTACLE_STEP * (0.2) * level
    if (right) {
      obstacleSpeed *= 1 * 6 * Math.min(right, 2)
    }
    let top = oldState.top + FALL_STEP
    if (up) {
      top -= JUMP_STEP * up
    }
    if (down) {
      top += DROP_STEP * down
    }

    if (now - this._lastNewObstacles >= NEW_OBSTACLES_TIME) {
      this._lastNewObstacles = now
      const numOfObstacles = oldState.obstacles.length
      if (numOfObstacles) {
        lastLeft = oldState.obstacles[numOfObstacles - 1].left - INITIAL_OBSTACLE_STEP
        if (lastLeft <= INITIAL_LEFT + PLAYER_WIDTH + OBSTACLE_MIN_DISTANCE) {
          lastLeft = INITIAL_LEFT + PLAYER_WIDTH * 3
```

INDEX.JS – COLISÕES



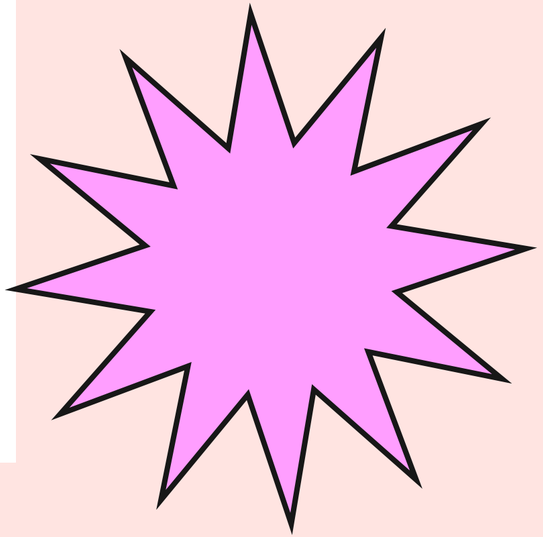
```
_checkColision(playerLeft, playerTop, obstacleData, newLeft) {
  let isWithingHeight = false
  const wrapperHeight = this._wrapper.offsetHeight
  const obstacleHeight = wrapperHeight / 2
  if (obstacleData.onTop) {
    if (playerTop <= obstacleHeight) {
      isWithingHeight = true
    }
  } else {
    if ((playerTop + PLAYER_HEIGHT) >= wrapperHeight - obstacleHeight) {
      isWithingHeight = true
    }
  }
  if (!isWithingHeight) {
    return false
  }

  if (playerLeft >= newLeft &&
    (playerLeft + PLAYER_WIDTH) <= obstacleData.left + OBSTACLE_WIDTH
  ) {
    return true
  }
  return false
}
```

INDEX.JS – "OUVINDO" OS BOTÕES

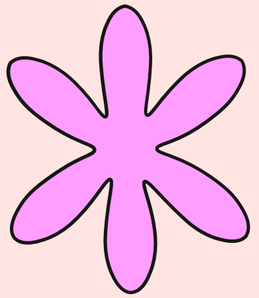
```
1   _listenToKey(ev) {
2     if (ev.code === 'Enter') {
3       if (!this.state.running) {
4         this._startGame()
5       }
6     }
7     if (this.state.running) {
8       if (ev.code === 'Space' || ev.code === 'ArrowUp') {
9         this._controls.up++
10      }
11      if (ev.code === 'AltRight' || ev.code === 'ControlLeft' || ev.code === 'AltLeft' || ev.cod
12        this._controls.down++
13      }
14      if (ev.code === 'ArrowRight') {
15        this._controls.right++
16      }
17    }
18  }
```

BACKGROUND

```
1  import React, { Component } from 'react';
2  import styled from 'styled-components'
3  const BackGround = styled.div`
4    background-color: blue;
5    width: 100%;
6    height: 100%;
7    overflow: hidden;
8    position: absolute;
9    text-align: center;
10 `
11 const GameOverText = styled.div`
12   color: white;
13   text-align: center;
14   position: absolute;
15   top: 50%;
16   transform: translateY(-50%);
17   width: 100%;
18 `
19 const GameOverBackground = styled(BackGround)`
20   background-color: red;
```

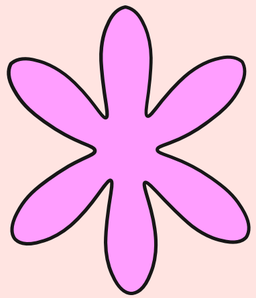


BACKGROUND



```
22  const StartBackground = styled(BackGround)`
23    background-color: green;
24  `
25  const TopGrass = styled.div`
26    position: absolute;
27  background-image:
28          url("data:image/svg+xml;utf8,<svg xmlns='http://www.w3.org/2000/
29  </svg>"),  url("data:image/svg+xml;utf8,<svg xmlns='http://www.w3.org/20
30  </svg>");
31    background-position: left bottom, left top;
32    background-size: 15vh auto;
33    background-repeat: repeat-x;
34    width: 100%;
35    height:100%;
36    z-index: 3;
37
38  `
39  export class Background extends Component {
40    constructor (props) {
```

BACKGROUND

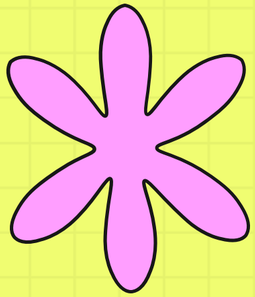


```
41      super(props)
42      this.state = {
43        showGameOver: false
44      }
45    }
46    componentWillReceiveProps (nextProps) {
47      if (nextProps.gameOver && !this.props.gameOver) {
48        this._intervalId = setTimeout(() => {
49          console.log('setting timeout')
50          this.setState({showGameOver: true})
51        }, 2000)
52      }
53      if (nextProps.running && !this.props.running) {
54        clearInterval(this._intervalId)
55        this.setState({showGameOver: false})
56      }
57    }
58    render () {
59      if (this.props.gameOver && this.state.showGameOver) {
60        return (
61          <GameOverBackground {...this.props}>
62            <GameOverText>
63              <h1>Game Over!</h1>
64              <h2>Tente novamente (Enter)</h2>
65            </GameOverText>
66          </GameOverBackground>
67        )
```

BACKGROUND.JS

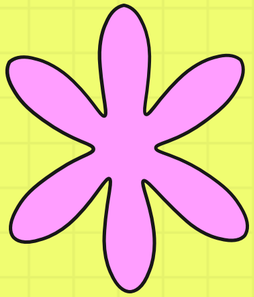
```
import React, { Component } from 'react';
import styled from 'styled-components'
const BackGround = styled.div`
  background-color: blue;
  width: 100%;
  height: 100%;
  overflow: hidden;
  position: absolute;
  text-align: center;
`
const GameOverText = styled.div`
  color: white;
  text-align: center;
  position: absolute;
  top: 50%;
  transform: translateY(-50%);
  width: 100%;
`
const GameOverBackground = styled(BackGround)`
  background-color: red;
```

```
import React, { Component } from 'react';
import styled, {keyframes} from 'styled-components'

const gentlyRock = keyframes`
        0% {transform:rotate(4deg);}
        50% {transform:rotate(-4deg);}
        100% {transform:rotate(4deg);}
`
const dead = keyframes`
        0% {transform:rotate(0);}
        50% {transform:rotate(180deg);}
        100% {transform:rotate(360deg);}

`
const StyledImg = styled.img`
  width: 100px;
  height: 100px;
  position: ${(props) => (props.running || props.gameOver) ? 'absolute' : 'relative' };
  left: 0;
  transition: top 0.2s;
  z-index: 2;
  animation: ${(props) => props.gameOver ? `${dead}  linear 0.5s infinite` : ` ${gentlyRock} lin

`
```



Player I

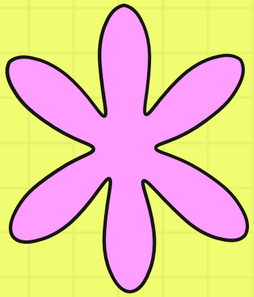
Player II



```
25  export class Player extends Component {
26    render () {
27      const svg = ``
28      return (
29        <StyledImg
30          {...this.props}
31  src="https://openclipart.org/download/75889/duck-line-art-pitr-Ducky-icon.svg" />
32      )
33    }
34  }
35  export default Player
```

obstacle.js

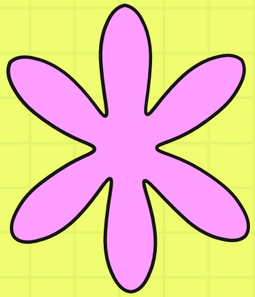
```
1   import React, { Component } from 'react';
2   import styled from 'styled-components';
3   const Pipe = styled.div`
4     background-color: green;
5     height: 50%;
6     position: absolute;
7     transition: left 0.2s;
8   `;
9   export class Obstacle extends Component {
10    render() {
11      const style = {
12        left: `${this.props.left}px`,
13        width: `${this.props.width}px`,
14      };
15      if (this.props.onTop) {
16        style.top = '0';
17      } else {
18        style.bottom = '0';
19      }
20      return <Pipe {...this.props} style={style} />;
21    }
22  }
23  export default Obstacle;
24
```



Obstacle

Hud

```
import React, { Component } from 'react';
import styled from 'styled-components';

const Container = styled.div`
  position: fixed;
  right: 0;
  top: 0;
  padding: 1.3rem;
  font-size: 1.3rem;
  z-index: 4;
`;
export class Hud extends Component {
  render() {
    return <Container>Score: {this.props.score}</Container>;
  }
}
export default Hud;
```

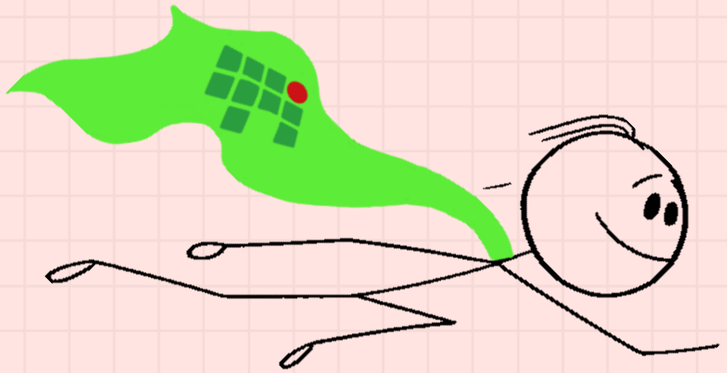


style.css

```
1  h1, p {
2    font-family: Lato;
3  }
4  html, body, #root, #blitz-app, #root,  #wrapper {
5    width: 100%;
6    height: 100%;
7  }
8  body {
9    margin: 0;
10 }
11 #wrapper {
12   position: relative;
13 }
```

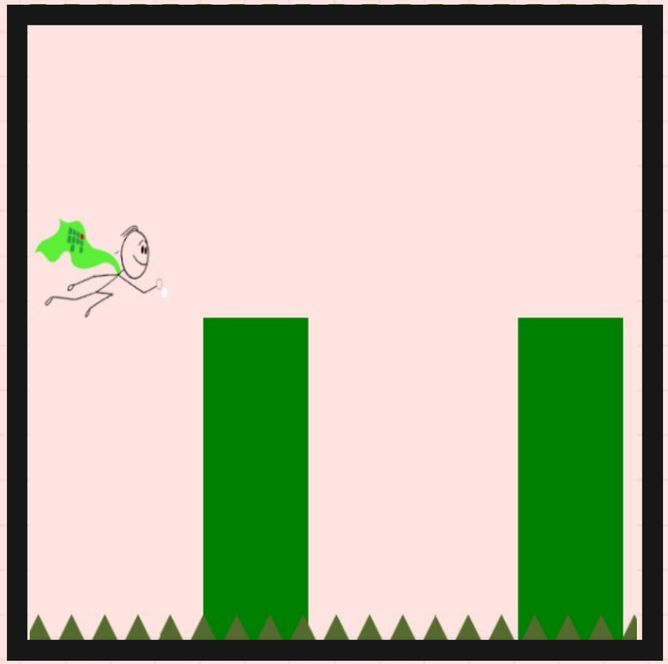
FUNCIONALIDADE

REACT GAME



Início

Durante



Fim

Obrigada pela atenção!