Tarea 2 Grupo 8

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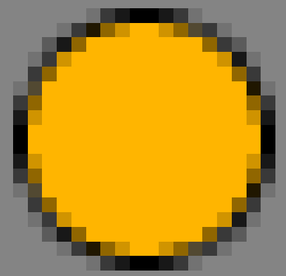
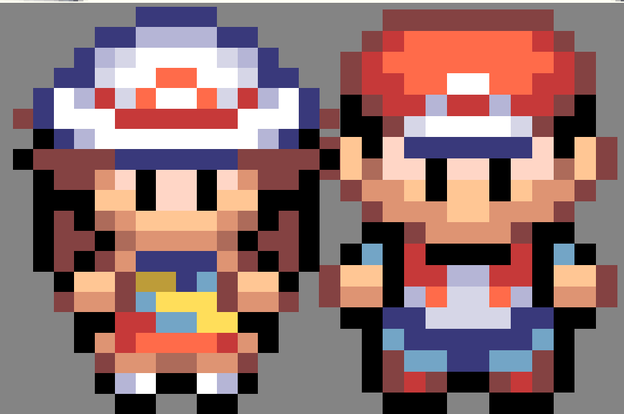
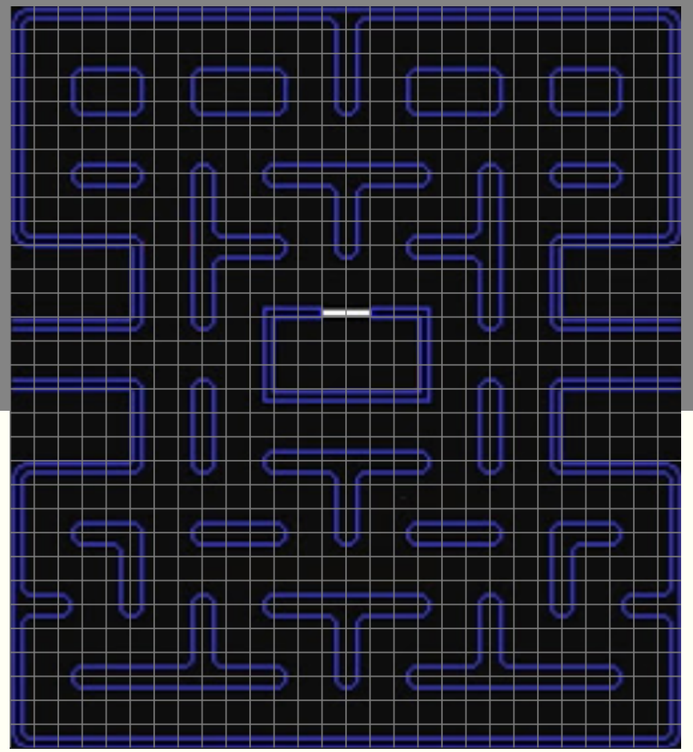
El juego: PacXD

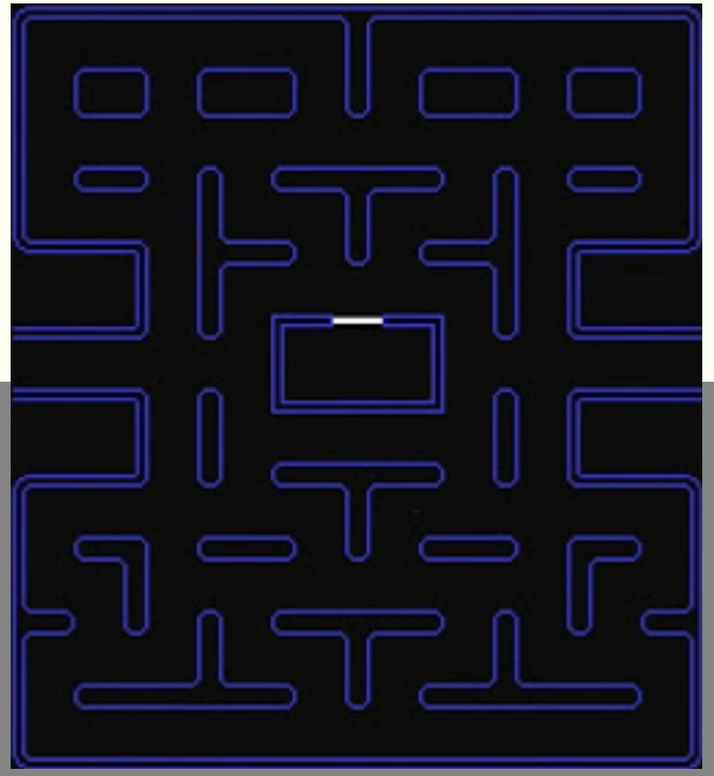
- Personajes
- Frutas y Píldoras
- Tiempo y Puntaje
- Enemigos
- Poder





Mapa





```
const layout =[
 ['x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x'],
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 ['x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x','x'],
];
```
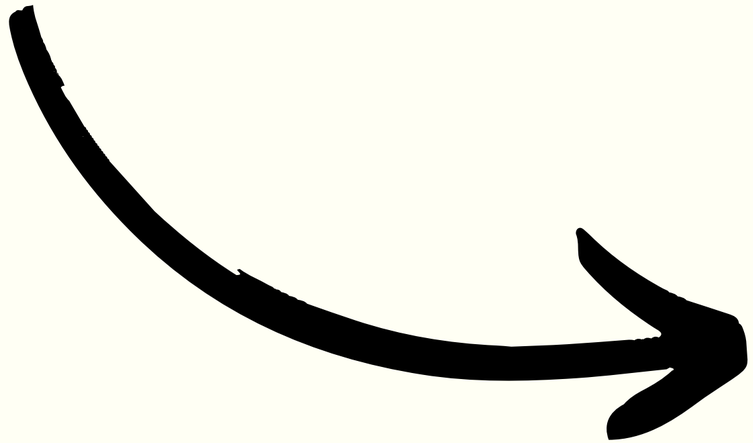


Demo
SPEEDING FINES INCREASED
EXIT
Andrew Young Intl Blvd
World Congress Center
North
75 85
Chattanooga
Greenville

Código

```
document.addEventListener('keydown',handleKeys);
```



```
const isWASDKey = (event: KeyboardEvent) => {
  const key = event.key.toLowerCase();
  return ["w", "a", "s", "d"].includes(key);
};

const isArrowKey = (event: KeyboardEvent) => {
  return ["ArrowUp", "ArrowDown", "ArrowLeft", "ArrowRight"].includes(
    event.key
  );
};

const wasdKeyObservable = fromEvent(document, "keydown").pipe(
  filter((event: KeyboardEvent) => isWASDKey(event)),
  map((event) => event.key.toLowerCase())
);

const arrowKeyObservable = fromEvent(document, "keydown").pipe(
  filter((event: KeyboardEvent) => isArrowKey(event)),
  map((event) => event.key)
);

wasdKeyObservable.subscribe((wasdKey) => {
  handleKeys(wasdKey);
  console.log(`WASD key pressed: ${wasdKey}`);
});

arrowKeyObservable.subscribe((arrowKey) => {
  handleKeys(arrowKey);
  console.log(`Arrow key pressed: ${arrowKey}`);
});
```

Iteración KeyboardEvent

Movimiento

```
function handleKeys(keypress: string) {
  switch (keypress) {
    case "ArrowRight":
      if (checkMove(1, x, y)) {
        if (x == 486) {
          x = 0;
        } else {
          x += movement;
        }
        charDiv.style.left = x + "px";
        afterPlayerMovement({x:x,y:y});
      }
      break;
    case "ArrowLeft":
      if (checkMove(2, x, y)) {
        if (x == 0) {
          x = 486;
        } else {
          x -= movement;
        }
        charDiv.style.left = x + "px";
        afterPlayerMovement({x:x,y:y});
      }
      break;
    case "ArrowUp":
      if (checkMove(3, x, y)) {
        y -= movement;
        charDiv.style.top = y + "px";
        afterPlayerMovement({x:x,y:y});
      }
      break;
    case "ArrowDown":
      if (checkMove(4, x, y)) {
        y += movement;
        charDiv.style.top = y + "px";
        afterPlayerMovement({x:x,y:y});
      }
      break;
```

```
function randomMov(){
  panguis.map((value,index)=>{
    let panguiMoves = [
      [panguiCords[index][1], panguiCords[index][0]+movement],
      [panguiCords[index][1], panguiCords[index][0]-movement],
      [panguiCords[index][1]-movement, panguiCords[index][0]],
      [panguiCords[index][1]+movement, panguiCords[index][0]]
      ].filter(e=>layout[e[0]/18][e[1]/18] === ".");
      let par1 = Math.floor(Math.random() * panguiMoves.length);
      panguiCords[index][0]=panguiMoves[par1][1];
      panguiCords[index][1]=panguiMoves[par1][0];
      value.style.left = panguiMoves[par1][1] + 'px';
      value.style.top = panguiMoves[par1][0] + 'px';
      if(!invincible){checkCollision(panguiMoves[par1][1], panguiMoves[par1][0]);}
  })
}
```

Colisiones

```
function checkCollision(px:number, py:number) {

  if (px == x && py == y) {
    console.log("P1");
    endGame();
  } else if (px == x2 && py == y2) {
    console.log("P2");
    endGame();
  }
}
```

```
function afterPlayerMovement(props: CoordinatesPlayer) {
  eat(props);
  panguiCords.map((cords) => {
    if (cords[0] == props.x && cords[1] == props.y && !invincible) {
      console.log("PX");
      endGame();
    }
  });
}
```

Puntaje

```
function eat(props: CoordinatesPlayer) {
  let ateFruit = checkForFruit(props);
  if (ateFruit) {eatFruit();}

  let pill = checkForPill({x:props.x, y:props.y});
  if (pill != 0) {eatPill(pill);}
}
function checkForFruit(props: CoordinatesPlayer){
  if (boolFruta) {
    if (props.x == xFruta && props.y == yFruta) {
      return true;
    }
    return false;
  }
  return false;
}

function checkForPill(props: CoordinatesPlayer){
  if (props.x == 18 && props.y == 18 && Pill1) {
    return 1;
  } else if (props.x == 468 && props.y == 18 && Pill2) {
    return 2;
  } else if (props.x == 18 && props.y == 522 && Pill3) {
    return 3;
  } else if (props.x == 468 && props.y == 522 && Pill4) {
    return 4;
  }
  return 0;
}
```

Frutas

```
function eatFruit(){
  clearTimeout(timerFruitId)
  score += 200;
  document.getElementById("score").textContent = score+"";
  divFruta.style.visibility = 'hidden';
  boolFruta = false;
  timerFruitId=setTimeout(createFruit, 2500)
}
```

```
function createFruit(){
  let creatingPosition = true;
  let gridX;
  let gridY;

  while (creatingPosition) {
    gridX = getRandomInt(28);
    gridY = getRandomInt(31)

    if (layout[gridY][gridX] == ".") {
      creatingPosition = false;
    }
  }
  xFruta = gridX * 18;
  yFruta = gridY * 18;
  divFruta.style.top = yFruta + 'px';
  divFruta.style.left = xFruta + 'px';
  divFruta.style.visibility = 'visible';
  boolFruta = true;
}
```

Pildoras

```
function eatPill(pill:number) {
  score += 100;
  document.getElementById("score").textContent = score+"";
  if (pill == 1) {
    Pill1 = false;
    divPill1.style.visibility = 'hidden';
  }
  else if (pill == 2) {
    Pill2 = false;
    divPill2.style.visibility = 'hidden';
  }
  else if (pill == 3) {
    Pill3 = false;
    divPill3.style.visibility = 'hidden';
  }
  else if (pill == 4) {
    Pill4 = false;
    divPill4.style.visibility = 'hidden';
  }
  powerup();
}
```

```
function powerup(){
  powerText.style.visibility = 'visible';
  clearTimeout(timerPillId);
  invincible = true;
  timerPillId=setTimeout(endInvincibility,10000);
}

function endInvincibility(){
  powerText.style.visibility='hidden'
  invincible = false;
}
```

Otras Funciones

```
function startGame(){…
}

function setInitialValues(){…
}

function setInitialPositions(){…
}

function restartGame(){…
}

function endGame(){…
}
```

```
fromEvent(button,'click').subscribe(startGame);
fromEvent(resButton,'click').subscribe(restartGame);
```

Webpack

Webpack

- Module-Bundler para JS, también puede transformar archivos front-end si se agregan loaders.
- En un principio usado porque rxjs no corria de manera correcta.
- Tiene un servidor de desarrollo llamado: "webpack-dev-server"
- Permite una mejor experiencia desarrollador
- Permite desarrollar modularmente tu aplicación web (para mas tarde)

Webpack Scripts

```
"scripts": {
  "start": "webpack serve --mode=development --open",
  "build": "SET NODE_ENV=production && webpack",
  "test": "echo \"Error: no test specified\" && exit 1"
},
```

Con esta configuracion se puede correr el servidor con el comando npm start

Webpack Config file

```
const path = require("path");
const CopyPlugin = require("copy-webpack-plugin");

module.exports = {
  entry: "./src/index.ts",
  mode: "development",
  devServer: {
    watchFiles: ["src/**/*"],
  },
  module: {···
  },
  resolve: {
    extensions: [".tsx", ".ts", ".js"],
  },
  plugins: [
    new CopyPlugin({
      patterns: [{ from: "src/index.html", to: "index.html" }],
    }),
  ],
  output: {
    filename: "bundle.js",
    path: path.resolve(__dirname, "dist"),
    clean: true,
  },
};
```

```
  module: {
    rules: [
      {
        test: /\.tsx?$/,
        use: "ts-loader",
        exclude: /node_modules/,
      },
      {
        test: /\.css$/i,
        include: path.resolve(__dirname, "src"),
        use: ["style-loader", "css-loader", "postcss-loader"],
      },
      {
        test: /\.(png|svg|jpg|jpeg|gif)$/i,
        use: [
          {
            loader: "file-loader",
            options: {
              limit: 8000,
              name: "images/[name].[ext]",
              outputPath: "assets/",
            },
          },
        ],
      }
    ],
  },
```

Conclusiones y Complicaciones