유다현 과제

> 2022-03-31

문제1

```
<!DOCTYPE html>
<html lang="ko">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <style>
        .con {
            display: flex;
        }

        .box {
            text-align: center;
            width: 33%;
            height: 200px;
        }
    </style>
</head>

<body>
    <div class="con">

        <div class="box">
            <h2>학과별 학생 수</h2>
            <div>

                <canvas id="myChart1"></canvas>
            </div>

        </div>

        <div class="box">
            <h2>학년에 따른 평균 나이 변화</h2>
            <div>

                <canvas id="myChart2"></canvas>
            </div>

        </div>
```

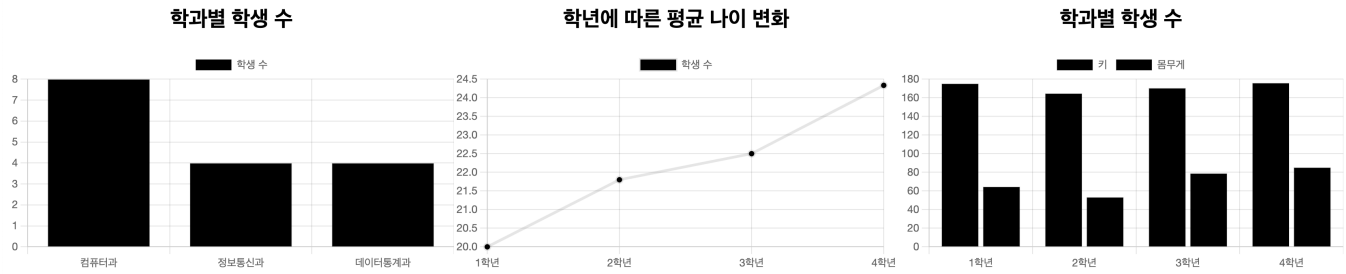
```
        <div class="box">
            <h2>학과별 학생 수</h2>
            <div>

                <canvas id="myChart3"></canvas>
            </div>

        </div>

    </div>
    <script src="dataset.js"></script>
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/3.7.1/chart.min.js">
</script>
    <script>
        /*
        문제 1
        */
        //학과명 배열
        let department = [];
        //학과명당 학생 수
        let studentCountAll = [];

        for (let i = 0; i < student.length; i++) {
            // console.log(key.deptno);
            department[i] = student[i].deptno;

        }
        // console.log(department);
        department.forEach(x => {
            if (studentCountAll[x]) {
                studentCountAll[x] = studentCountAll[x] + 1;
            } else {
                studentCountAll[x] = 0 + 1;
            }
        });

        let studentCount = [];
        for (let i in studentCountAll) {
            studentCount.push(studentCountAll[i]);
        }
        const uniqueDepartment = department.filter((element, index) => {
            return department.indexOf(element) === index;
        });


        /* 여기서부턴 보여주신 풀이랑 똑같아요 ... ㅎ */

        /*
        배열을 파라미터로 받아 평균을 리턴하는 함수*/
        function getAvg(data) {
            let sum = 0;
            data.forEach((v, i) => {
                sum += v;
```

```
    });
    return sum / data.length;
}

/*
        문제 2
*/
const ageInfo = [];
var nowYear = new Date().getFullYear();


student.forEach((v, i) => {
    const key = v.grade + "학년";
    const birthYear = parseInt(v.birthdate.substring(0, 4));
    const age = nowYear - birthYear + 1;

    if (ageInfo[key] === undefined) {
        ageInfo[key] = [age];
    } else {
        ageInfo[key].push(age);
    }
});
const level = [];
const age = [];
for (let key in ageInfo) {
    level.push(key);
    age.push(getAvg(ageInfo[key]));
}


for (let i = 0; i < level.length - 1; i++) {
    for (let j = i + 1; j < level.length; j++) {
        const x = parseInt(level[i]);
        const y = parseInt(level[j]);

        if (x > y) {
            let tmp = level[i];
            level[i] = level[j];
            level[j] = tmp;

            tmp = age[i];
            age[i] = age[j];
            age[j] = tmp;
        }
    }
}
/*
      문제 3
 */


const bodyInfo = {} ;
 student.forEach((v,i)=>{
```

```
        const key = v.grade +"학년";
        if(bodyInfo[key]===undefined){
            bodyInfo[key]= { height:[v.height],weight:[v.weight]};
        }else {
            bodyInfo[key].height.push(v.height);
            bodyInfo[key].weight.push(v.weight);
        }
    });

    const grade =[];
    const height =[];
    const weight=[];

    for(let key in bodyInfo){
        grade.push(key);
        height.push(getAvg(bodyInfo[key].height));
        weight.push(getAvg(bodyInfo[key].weight));
    }
    for (let i = 0; i < grade.length - 1; i++) {
        for (let j = i + 1; j < grade.length; j++) {
            const x = parseInt(grade[i]);
            const y = parseInt(grade[j]);

            if (x > y) {
                let tmp =grade[i];
                grade[i] = grade[j];
                grade[j] = tmp;


                 tmp =height[i];
                height[i] = height[j];
                height[j] = tmp;

                tmp = weight[i];
                weight[i] = weight[j];
                weight[j] = tmp;
            }
        }
    }

    const myChart1 = document.getElementById('myChart1');
    new Chart(myChart1, {
        type: "bar",
        data: {
            labels: uniqueDepartment,
            datasets: [{
                label: "학생 수",
                data: studentCount,
                borderWidth: 0.5,
                color: "#000",
                backgroundColor: "#000",
            }]
        },
        option: {
```

```
                maintainAspectRatio: true,
                indexAxis: "y",
            }

        });
        /*
        문제 3
        */
        const myChart2 = document.getElementById('myChart2');
        new Chart(myChart2, {
            type: "line",
            data: {
                labels: level,
                datasets: [{
                    label: "학생 수",
                    data: age,
                    borderWidth: 3,
                    color: "#000",
                    backgroundColor: "#000",
                }]
            },
            option: {
                maintainAspectRatio: true,
                indexAxis: "y",
            }

        });
        const myChart3 = document.getElementById('myChart3');
        new Chart(myChart3, {
            type: "bar",
            data: {
                labels: grade,
                datasets: [{
                    label: "키",
                    data: height,
                    borderWidth: 0.5,
                    color: "#000",
                    backgroundColor: "#000",
                },
                {
                    label: "몸무게",
                    data: weight,
                    borderWidth: 0.5,
                    color: "#000",
                    backgroundColor: "#000",
                }]
            },
            option: {
                maintainAspectRatio: true,
                indexAxis: "y",
            }

        });
    </script>
```

```
</body>

</html>
```


학과별 학생 수
학생 수
8
7
6
5
4
3
2
1
0
컴퓨터과
정보통신과
데이터통계과
학년에 따른 평균 나이 변화
학생 수
24.5
24.0
23.5
23.0
22.5
22.0
21.5
21.0
20.5
20.0
1학년
2학년
3학년
4학년
학과별 학생 수
키
몸무게
180
160
140
120
100
80
60
40
20
0
1학년
2학년
3학년
4학년