

# ESTUDIEZ PORTAL

*SOFTWARE  
REQUIREMENTS  
SPECIFICATION*

*VERSION 1.0*



## ***LINK DEMO***

Team's website: <https://phuopham.github.io/Techwiz2022/#!/>

Source code on GitHub: <https://github.com/phuopham/Techwiz2022>

Data access:

1. Student: Nguyen Hoang Nam
2. Teacher: Le Kim Tung
3. Parent: Tran Duy Anh

## ***PROBLEM DEFINITION***

Nowadays, education and training is a field that plays an important role for all countries and ethnic groups at all times. In today's trend of knowledge development, education – training is considered the most important policy and measure for development in many countries around the world and Viet Nam is no exception. Education contributes to raising people's intellectual level in all countries and ethnic groups. Today, education and training also contribute to the creation of a new social value system. In the current knowledge economy, knowledge is the product of education and training and the most valuable asset of people and society. Ownership of knowledge becomes the most important property recognized and protected by countries. Resources for socio-economic development in each country and ethnic group from natural resources and muscular labor are the main sources of human resources, whose knowledge is the most basic.

However, the general education system still has many difficulties in updating and managing information in the learning process of students for Teachers/Parents/Guardians. Students who fail exams might not reveal their marks to their Parents/Guardians because of fear. Teachers too are overloaded with work, because of which it becomes difficult to remember each child's academic progress. Also, students too must be kept aware of their score progress and marks required for passing External Exams.

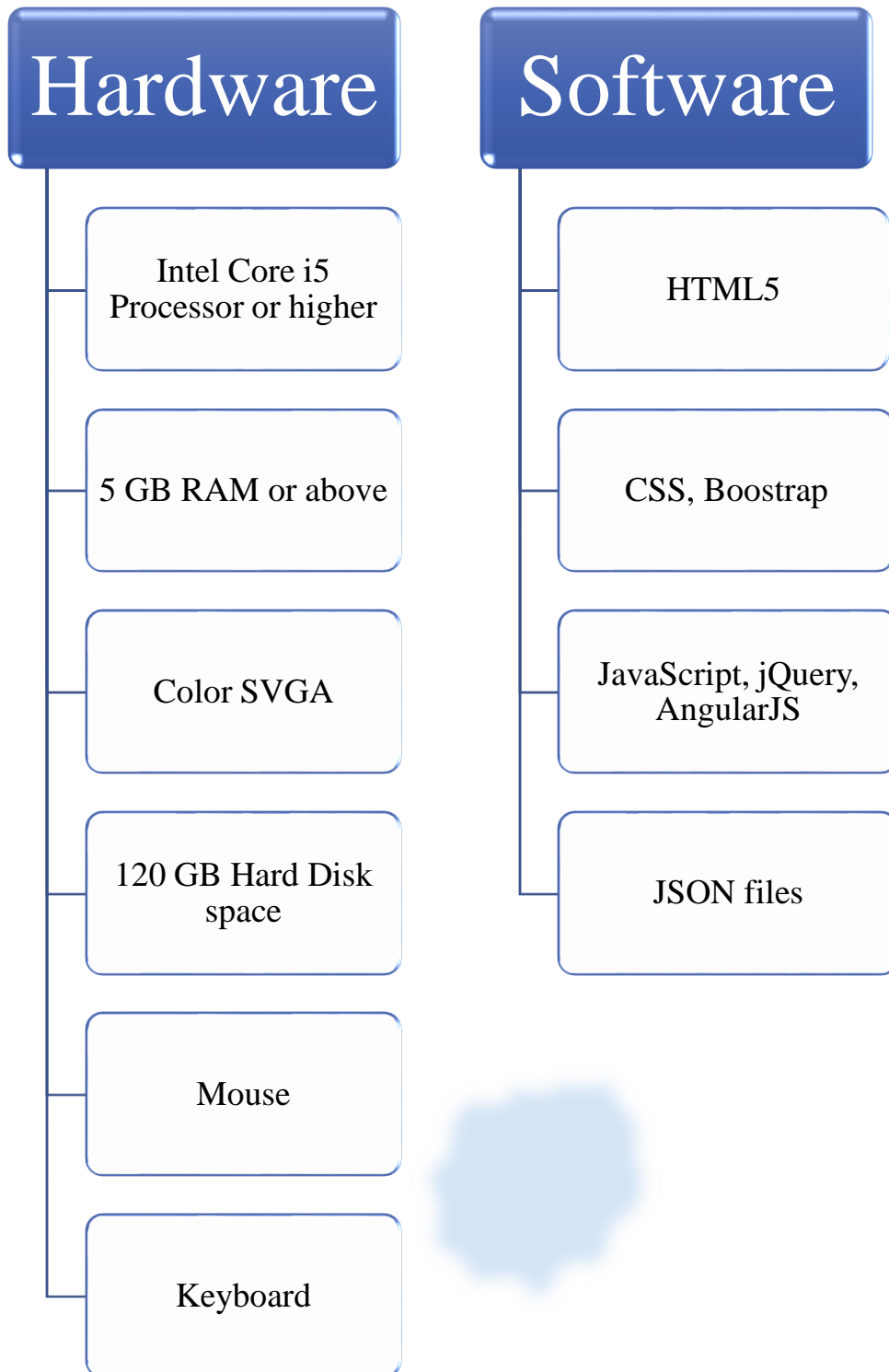
With the power of technology 4.0 – the period of strong development of artificial intelligence and the internet, those difficulties are gradually solved. Therefore, it helps teachers easily remember students' learning progress and have a reasonable teaching direction. Their parents update their child's information accurately and quickly.

And we – the HelloWorld.txt team bring the design of a website called “eStudiez” that will be used to track students' academic progress born. The system will accept different types of users such as students, parents/guardians, and teachers to view and track progress. Students with poor academic performance will be provided with additional materials through this portal to improve their performance your

your ability. The Portal will also provide information about Exam Preparation classes to improve performance. Students and parents/guardians can view and track the student's progress.

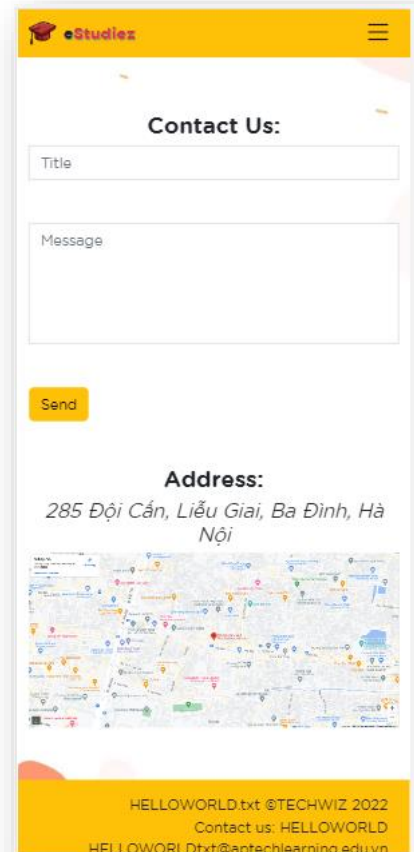
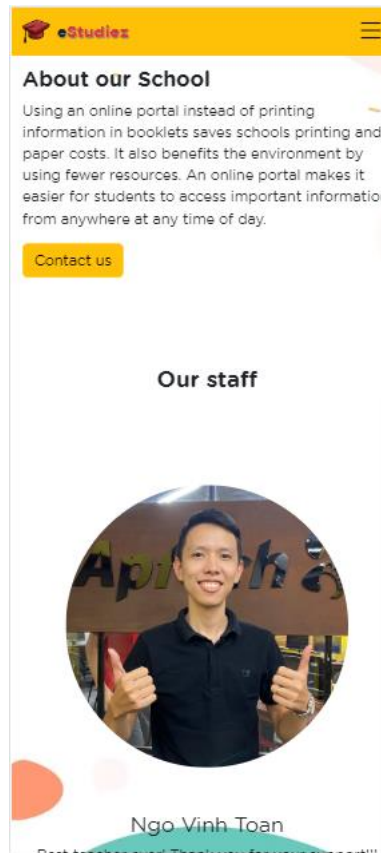
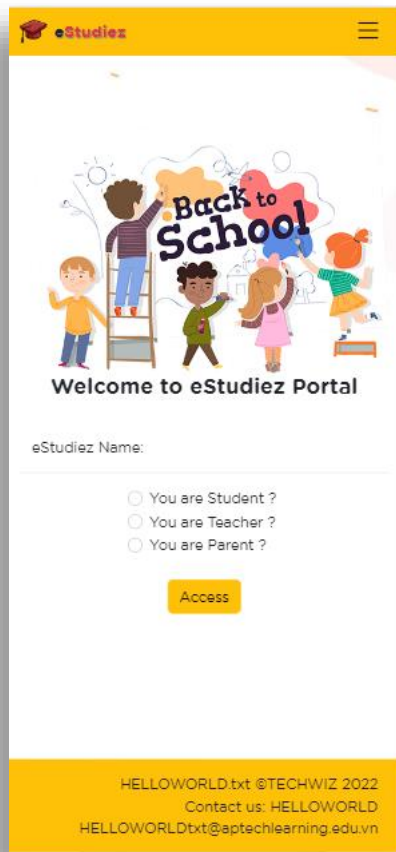
To have the main benefits of the website, "eStudiez Portal" is built with functions that are highly interactive, easy to manipulate, and suitable for ages and positions. Here are the components and features included in the "eStudiez Portal" website.

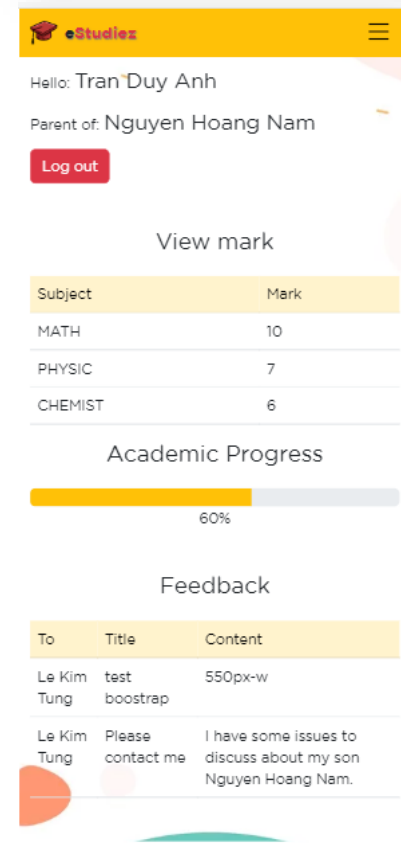
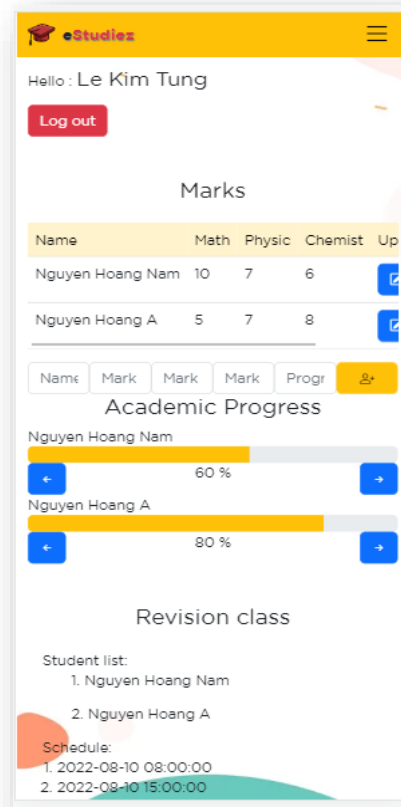
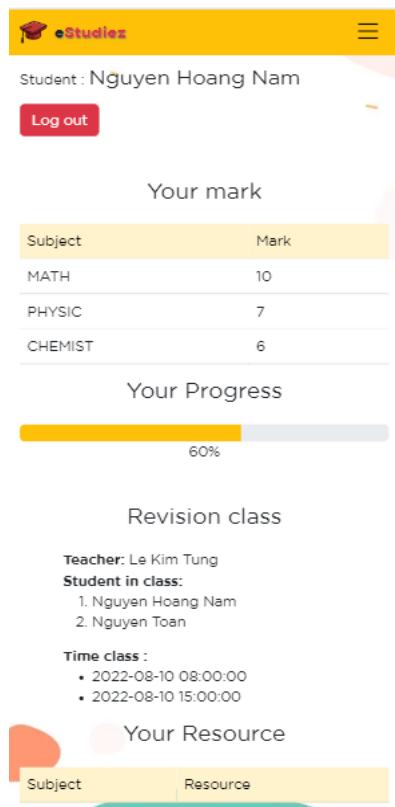
## DESIGN SPECIFICATIONS



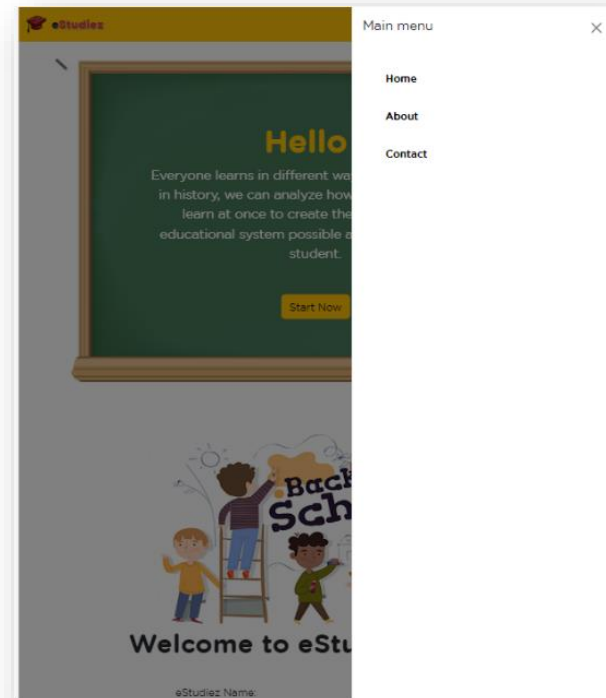
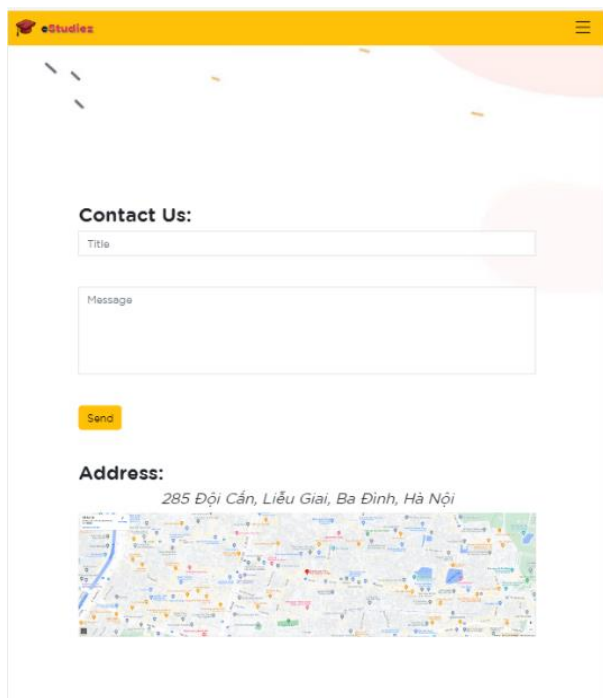
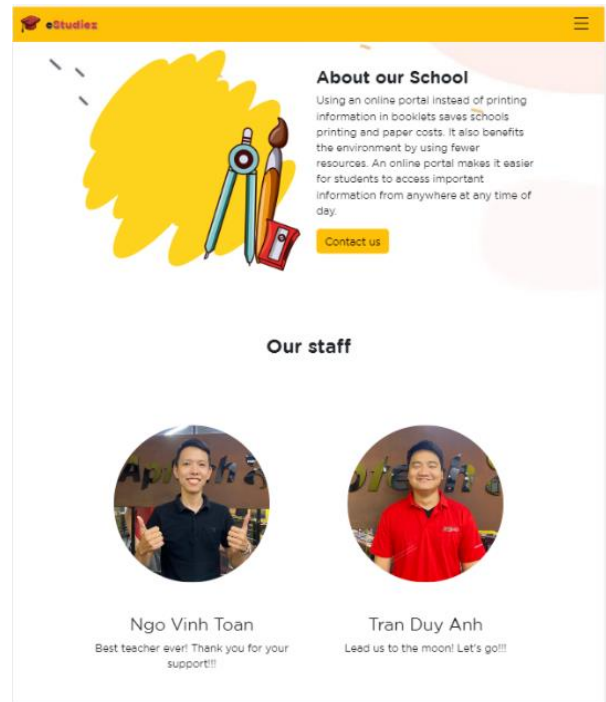
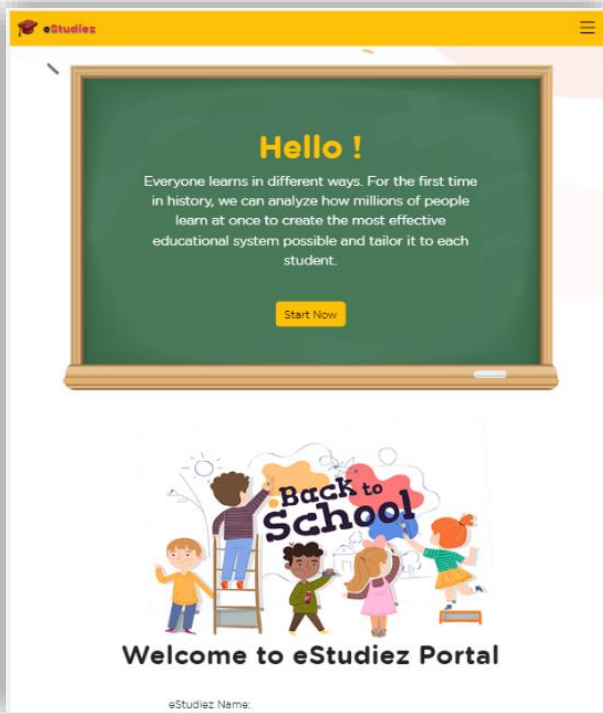
# RESPONSIVE DESIGN

1. iPhone 12 Pro (width – height: 399px – 844px):





## 2. iPad Air (width – height: 820px – 1180px):





Student: Nguyen Hoang Nam

Log out

Your mark

Subject	Mark
MATH	10
PHYSIC	7
CHEMIST	6

Your Progress

60%

Revision class

Teacher: Le Kim Tung

Student in class:

1. Nguyen Hoang Nam

2. Nguyen Toan

Time class :

2022-08-10 08:00:00

2022-08-10 15:00:00

Your Resource

Subject	Resource
Math	<a href="#">Exercise 2</a>
Physic	<a href="#">Exercise 5</a>
Chemist	<a href="#">Task 4</a>
Practice	<a href="#">Document 1</a>

Also teacher

12434536456

Feedback

To	Title	Content
Le Kim Tung	Ngu da	dell ngu
Le Kim Tung	Please	Nguyen Hoang Nam

Feedback to teacher:

Le Kim Tung

Hello: Tran Duy Anh

Parent of: Nguyen Hoang Nam

Log out

View mark

Subject	Mark
MATH	10
PHYSIC	7
CHEMIST	6

Academic Progress

60%

Feedback

To	Title	Content
Le Kim Tung	test bootstrap	550pi-w
Le Kim Tung		

Feedback

Title

Message

Send

Hello: Le Kim Tung

Log out

Marks

Name	Math	Physic	Chemist	Update	Delete
Nguyen Hoang Nam	10	7	6	<a href="#">✎</a>	<a href="#">✖</a>
Nguyen Hoang A	5	7	8	<a href="#">✎</a>	<a href="#">✖</a>

Name

Mark

Mark

Mark

Progress

✎

Academic Progress

Nguyen Hoang Nam

60%

Nguyen Hoang A

80%

Revision class

Student list:

1. Nguyen Hoang Nam

2. Nguyen Hoang A

Schedule:

1. 2022-08-10 08:00:00

2. 2022-08-10 15:00:00

Add next Schedule

YYYY/mm/DD

00:00:00

Add schedule

Your Resource

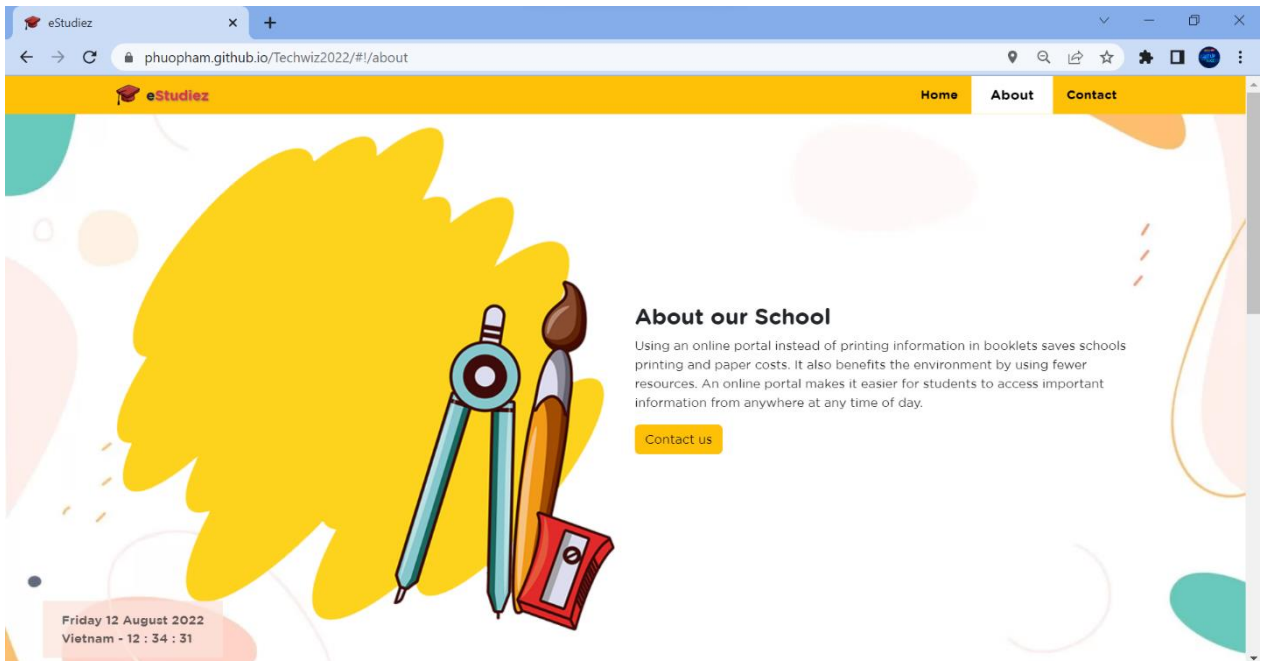
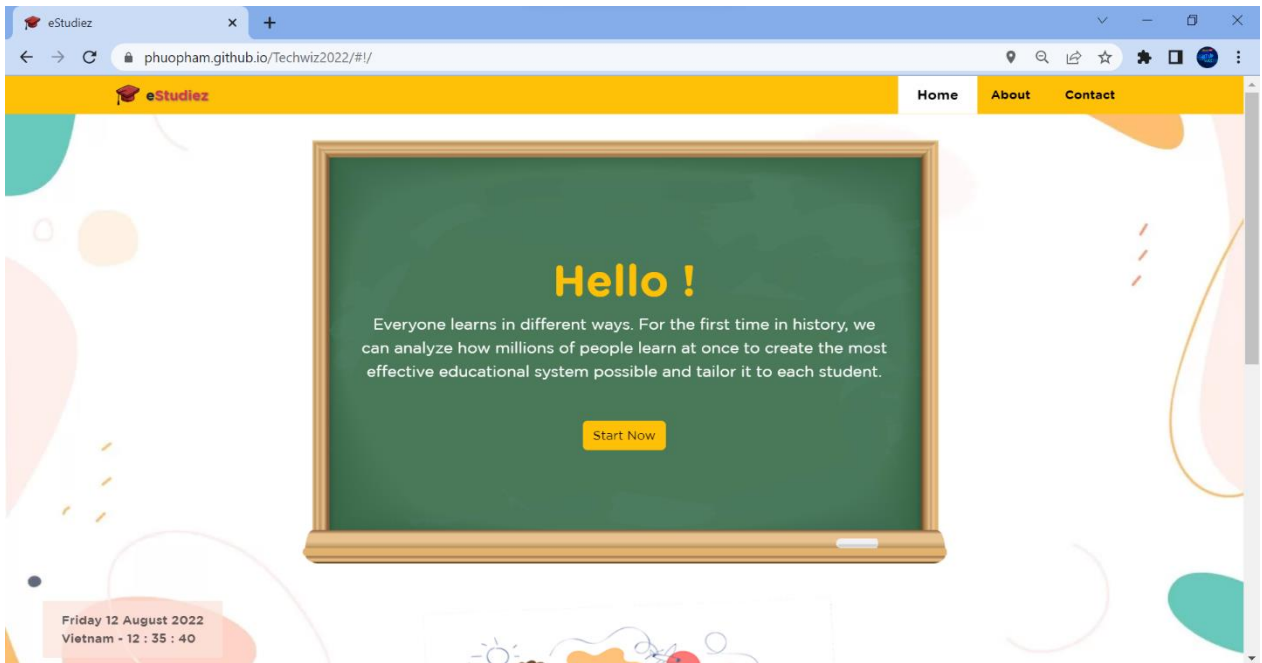
Subject	Resource
Math	<a href="#">Exercise 2</a>
Physic	<a href="#">Exercise 5</a>
Chemist	<a href="#">Task 4</a>
Practice	<a href="#">Document 1</a>

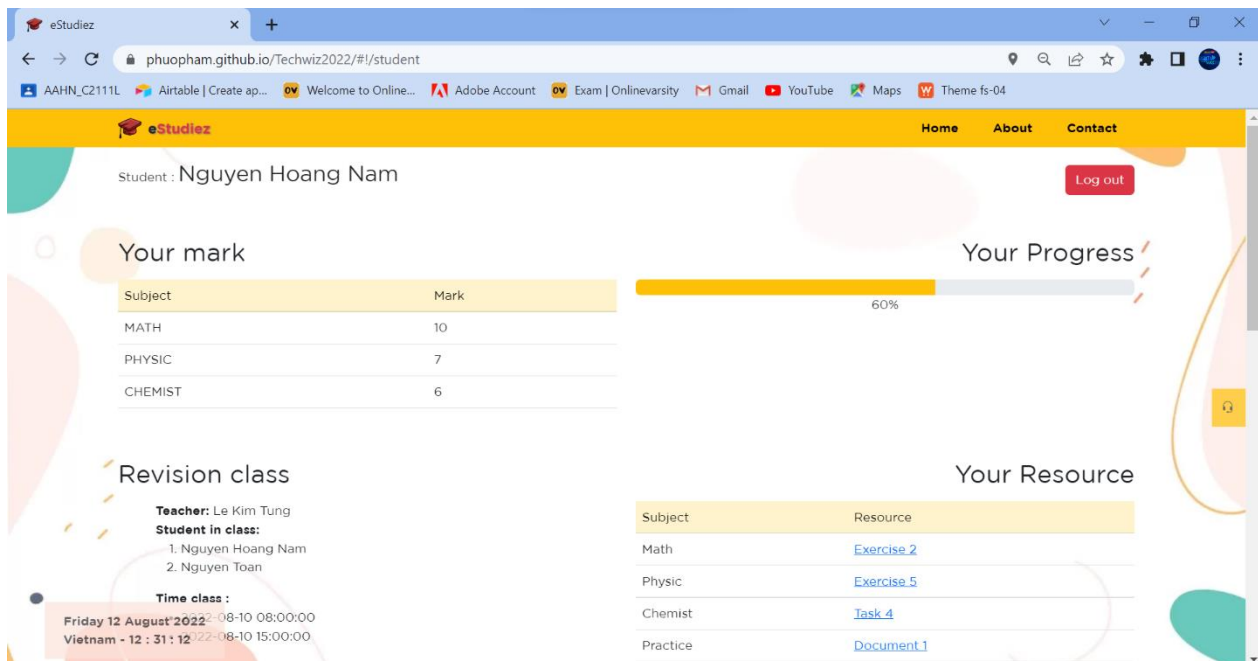
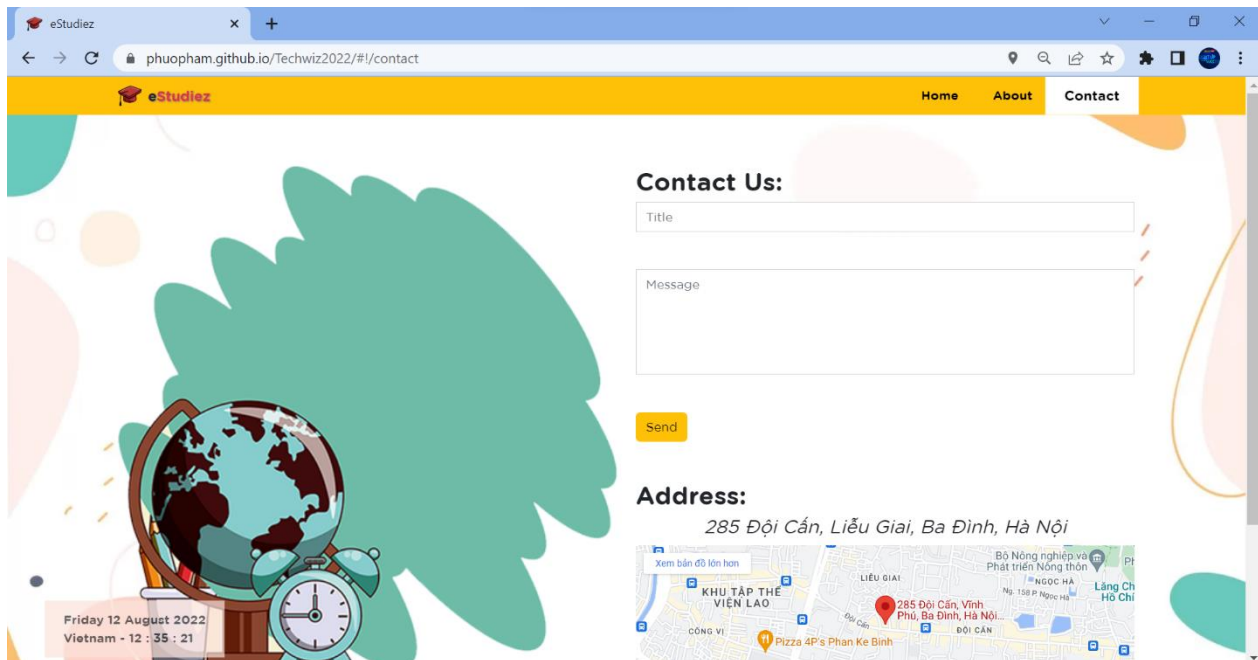
Subject

Title

Link to resource

### 3. Desktop (width – height: 1920px – 1080px):





eStudiez

phuopham.github.io/Techwiz2022/#/teacher

Home About Contact

Hello: Le Kim Tung Log out

### Marks

Name	Math	Physic	Chemist	Update	Delete
Nguyen Hoang Nam	10	7	6	<a href="#">✎</a>	<a href="#">✖</a>
Nguyen Hoang A	5	7	8	<a href="#">✎</a>	<a href="#">✖</a>

Name
  Mark
  Mark
  Mark

### Academic Progress

Nguyen Hoang Nam 60 %

Nguyen Hoang A 80 %

### Revision class

Student list:

- Nguyen Hoang Nam
- Nguyen Hoang A

Friday 12 August 2022  
 Vietnam - 12:31:38  
 2022-08-10 15:00:00

### Your Resource

Subject	Resource
Math	<a href="#">Exercise 2</a>
Physic	<a href="#">Exercise 5</a>
Chemist	<a href="#">Task 4</a>
Practise	<a href="#">Document 1</a>

eStudiez

phuopham.github.io/Techwiz2022/#/parent

Home About Contact

Hello: Tran Duy Anh

Parent of: Nguyen Hoang Nam Log out

### View mark

Subject	Mark
MATH	10
PHYSIC	7
CHEMIST	6

### Academic Progress

60%

### Feedback

To	Title	Content
Le Kim Tung	test bootstrap	550px-w
Le Kim Tung	Please contact me	I have some issues to discuss about my son Nguyen Hoang Nam.

Friday 12 August 2022  
 Vietnam - 12:34:02

Feedback

## FEATURE DESCRIPTION

### 1. Home page

The diagram illustrates the user flow on the eStudiez Portal home page. It consists of two main screens. The first screen, a green chalkboard, displays a 'Hello!' message and a paragraph about personalized learning. A yellow 'Start Now' button is highlighted with a red circle. A callout bubble explains that clicking this button scrolls the page to the login form. The second screen, a white login page, features a 'Back to School' illustration, a 'Welcome to eStudiez Portal' heading, and a login form. The form includes a text input for the 'eStudiez Name' (pre-filled with 'Nguyen Hoang Nam'), three radio buttons for role selection ('You are Student?', 'You are Teacher?', 'You are Parent?'), and an 'Access' button. A red circle highlights the entire login form area. A callout bubble states that if the input data is correct, the login is successful and the page will be replaced. Another callout bubble explains that the user enters their name, selects their role, and clicks the 'Access' box to sign in.

**Screen 1: Welcome Message**

Hello !

Everyone learns in different ways. For the first time in history, we can analyze how millions of people learn at once to create the most effective educational system possible and tailor it to each student.

**Start Now**

Users click on the Start Now box to have the computer screen scroll down to log in form.

If the input data is correct, the login is successful, and corresponding page will be replaced.

**Screen 2: Login Form**

Back to School


Welcome to eStudiez Portal

eStudiez Name:  
Nguyen Hoang Nam

☒ You are Student ?  
☐ You are Teacher ?  
☐ You are Parent ?

**Access**

The user enters their name and selects their role, and clicks on the Access box to sign in.



# Welcome to eStudiez Portal


Estudiez Name:  
Le Kim Tung

☐ You are Student ?  
☒ You are Teacher ?  
☐ You are Parent ?

Access

The user enters their name and selects their role, and clicks on the Access box to sign in.

If the input data is correct, the login is successful, and corresponding page will be replaced.



# Welcome to eStudiez Portal

Estudiez Name:  
Tren Duy Anh

☐ You are Student ?  
☐ You are Teacher ?  
☒ You are Parent ?

Access





# Welcome to eStudiez Portal

eStudiez Name:  
Nguyen Hoang Nam

- ☐ You are Student ?  
☒ You are Teacher ?  
☐ You are Parent ?

Access

If the user is logged in with only their name or role, there is an error and message to the user.

## Notification

eStudiez's Name and Role can not empty !!!

Close



# Welcome to eStudiez Portal

eStudiez Name:

- ☒ You are Student ?  
☐ You are Teacher ?  
☐ You are Parent ?

Access



# Welcome to eStudiez Portal

eStudiez Name:  
Le Kim Tung

- ☒ You are Student ?  
☐ You are Teacher ?  
☐ You are Parent ?

Access

## Notification

Access Failure... Can not find your eStudiez's User

Close

If the user is logged in with the correct name, the wrong role, or vice versa, there is an error and notify the user.



# Welcome to eStudiez Portal

eStudiez Name:  
Nguyen Hoang Nam

- ☐ You are Student ?  
☒ You are Teacher ?  
☐ You are Parent ?

Access



## 2. Student page

The screenshot displays the 'Student page' interface. At the top left, the text 'Student : Nguyen Hoang Nam' is circled in red. To its right is a 'Log out' button, also circled in red. Below the student name is a 'Teacher's announcement' section featuring a green chalkboard. The 'Your mark' section contains a table with the following data:

Subject	Mark
MATH	10
PHYSIC	7
CHEMIST	6

To the right of the table is a 'Your Progress' bar showing 60% completion. Below the progress bar is a blue cloud-shaped callout box containing the text: 'Display student information: full name, grades, learning progress, class information, and learning materials.' Red arrows point from this callout box to the student name, the 'Log out' button, the 'Your mark' table, and the 'Your Progress' bar. At the bottom left, the 'Revision class' section lists the teacher as 'Le Kim Tung' and the students as '1. Nguyen Hoang Nam' and '2. Nguyen Toan'. It also lists two class times: '2022-08-10 08:00:00' and '2022-08-10 15:00:00'. To the right of this is the 'Your Resource' section with a table:

Subject	Resource
Math	<a href="#">Exercise 2</a>
Physic	<a href="#">Exercise 5</a>
Chemist	<a href="#">Task 4</a>
Practice	<a href="#">Document 1</a>

Feedback section provide communication channel for student to corresponding teacher.

### Feedback to teacher: Le Kim Tung

Assignment

Please help me do exercise 1

Send



### Feedback history

To	Title	Content
Le Kim Tung	Hi Mr.Tung	I really enjoy your math class!

When feedback is submitted, an entry will be create in local storage. If the student access to the portal, feedback will be shown.

### 3. Parents page

The screenshot shows the 'Parents page' interface. At the top left, it says 'Hello: Tran Duy Anh' and 'Parent of: Nguyen Hoang Nam'. A red circle highlights these two lines, with an arrow pointing to a blue box below that says 'Display the student's full name, parent-friendly greeting, grades, and academic progress.' To the right, there is a 'Log out' button, also circled in red, with an arrow pointing to a blue box that says 'Log out current session, clear local storage, and return to the home page.' Below the greeting, there is a 'View mark' section with a table of subjects and marks, and an 'Academic Progress' section with a progress bar.

Subject	Mark
MATH	10
PHYSIC	7
CHEMIST	6

Academic Progress: 60%

The screenshot shows the 'Feedback' section. At the top, there is a table with columns 'To', 'Title', and 'Content'. A red circle highlights the first row, with an arrow pointing to a blue box that says 'The feedback menu option will allow parents of students to provide their feedback or questions through the feedback form. There is a section showing feedback from teachers.' Below the table, there is a 'Feedback' form with a text input field, a 'Send' button, and a section showing feedback from teachers. At the bottom left, there is an illustration of a stack of books.

To	Title	Content
Le Kim Tung	Please contact me	I have some issues to discuss about my son Nguyen Hoang Nam

Feedback form:

Support my son do assignment

My son is having difficulty solving exercise 1. Hope the teacher can help him.

Send

#### 4. Teacher page

The screenshot displays the 'Teacher page' interface. At the top left, it says 'Hello : Le Kim Tung'. The main content is divided into two sections: 'Marks' and 'Academic Progress'.

**Marks Section:** It features a table with columns: Name, Math, Physic, Chemist, Update, and Delete. The table lists two students: Nguyen Hoang Nam (Math: 10, Physic: 7, Chemist: 6) and Nguyen Hoang A (Math: 5, Physic: 7, Chemist: 8). Each row has a blue pencil icon for 'Update' and a red trash icon for 'Delete'. To the right of the table is a section titled 'Academic Progress' showing progress bars for the same two students: 60% for Nguyen Hoang Nam and 80% for Nguyen Hoang A. Each progress bar has a blue plus icon to its right.

**Annotations:**

- A blue cloud-shaped callout points to the 'Update' and 'Delete' icons, stating: 'On the left is where teachers add, edit and delete students and their grades. On the right is where to edit the learning progress.'
- A red circle highlights the 'Log out' button in the top right corner.
- A light blue box with a red arrow pointing to the 'Log out' button contains the text: 'Log out current session, clear local storage, and return to the home page.'

**Your Resource Section:** Below the 'Marks' section, there is a 'Your Resource' section. It includes a table with columns 'Subject' and 'Resource'. The table lists: Math (Exercise 2), Physic (Exercise 5), Chemist (Task 4), and Practice (Document 1). Below this table is a form to 'Add next Schedule' with fields for 'YYYY/mm/DD' and '00:00:00', and an 'Add schedule' button. To the right of the form is another table with columns 'Subject' and 'Title', and a 'Link to resource' field, with an 'Add document' button below it.

**Annotation:**

- A light blue box with a red arrow pointing to the 'Add schedule' and 'Add document' buttons contains the text: 'Where teachers add timetable and material for student.'

When feedback is submitted, an entry will be created in local storage. If the student access to the portal, feedback will be shown.

## Feedback

From	Title	Content
Nguyen Hoang Nam	Hi Mr.Tung	I really enjoy your math class!
Nguyen Hoang A	I have a question.	I don't understand today's lesson, please explain again!
Tran Duy Anh	Please contact me	I have some issues to discuss about my son Nguyen Hoang Nam.
Tran Toan	Hello Mr.Tung	Can i meet you tomorrow!

Send announcement to students in your class:

Homework 2022-08-12

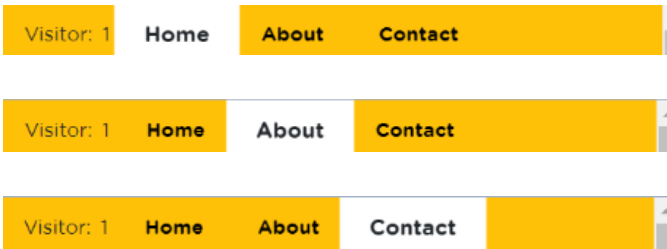
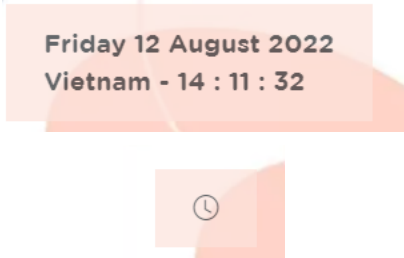
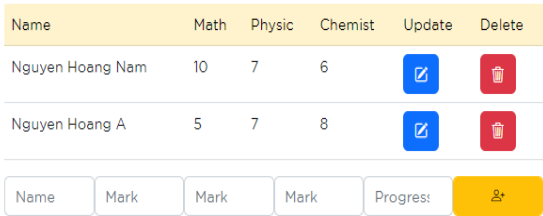
Exercise 1:  
Exercise 2:  
Exercise 3:

Send

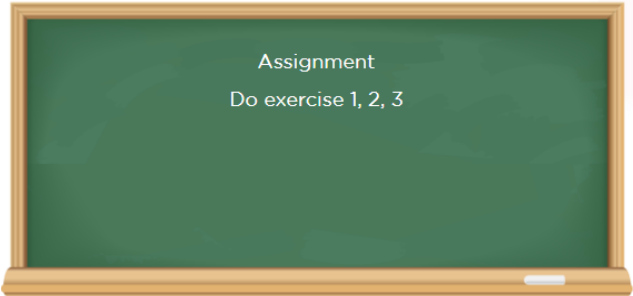


This is a section teachers write notices to send to student in class.

## EXTRA FEATURE

	<ul style="list-style-type: none"> <li>❖ Display a visitor count at the top right corner of the page beside a logo image. <b>(because of the limit of technology, we use local storage to store visitor count)</b></li> <li>❖ Menu options change color on hover and also after clicking.</li> </ul>
	<ul style="list-style-type: none"> <li>❖ Display a continuous scrolling ticker at the bottom of the page with the current date, time, and location.</li> </ul>
	<ul style="list-style-type: none"> <li>❖ Create add, update and delete student by using databinding.</li> <li>❖ Form update is displayed when teacher update information of student.</li> </ul>

<div data-bbox="269 178 935 978"> <div>Update Student Information: <span>✕</span></div> <div> <div>Name</div> <div>Nguyen Hoang Nam</div> </div> <div> <div>Mark-Math</div> <div>10</div> </div> <div> <div>Mark-Physic</div> <div>7</div> </div> <div> <div>Mark-Chemist</div> <div>6</div> </div> <div> <div>Parents</div> <div>Tran Duy Anh</div> </div> <div> <div>Progress</div> <div>60</div> </div> <div> <div>Teacher Name</div> <div>Le Kim Tung</div> </div> <div> <div>Close</div> <div>Save changes</div> </div> </div>	
<div data-bbox="250 1041 855 1083">Feedback to teacher: Le Kim Tung</div> <div data-bbox="250 1089 956 1432"> <div>Title</div> <div>Message</div> <div>Send</div> </div> <div data-bbox="250 1520 423 1558">Feedback</div> <div data-bbox="250 1577 956 1839"> <div>Title</div> <div>Message</div> <div>Send</div> </div>	<div data-bbox="992 1396 1453 1478">❖ Student and parents can send feedback to teacher.</div>

<p>🎓 localhost/123/Techwiz2022/#!/student</p> <p>🎓 localhost/123/Techwiz2022/#!/teacher </p> <p>🎓 localhost/123/Techwiz2022/#!/parent </p>	<ul style="list-style-type: none"> <li>❖ Route is protected when user not log in (<b>using local storage for author</b>).</li> </ul>
<p>Teacher's announcement</p>  <p>Send announcement to students in your class:</p> <p>Title <input type="text"/></p> <p>Message <input type="text"/></p> <p><input type="button" value="Send"/></p>	<ul style="list-style-type: none"> <li>❖ Teacher's announcement will display on each student site when student log in.</li> <li>❖ Teacher can send announcement to all student in teacher's class.</li> </ul>



## ***ENTITY RELATIONSHIP***

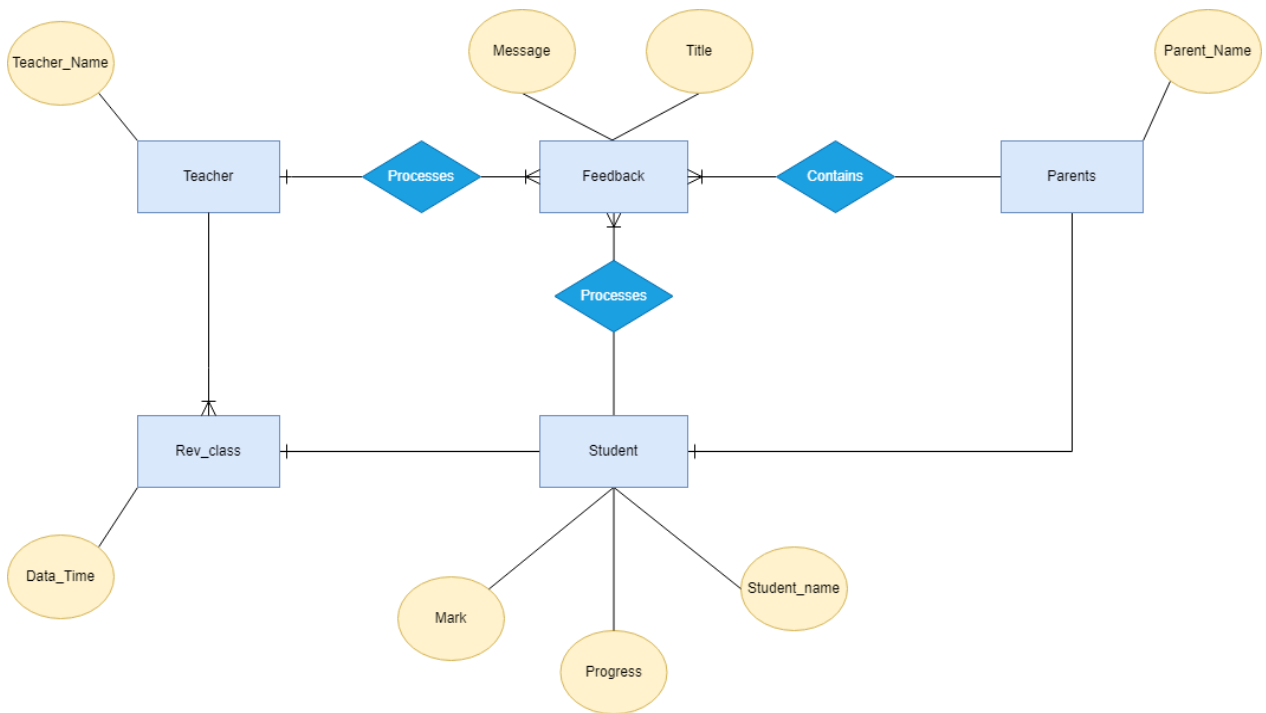


Diagram showing the relationship of data between JSON files

## ***DATABASE DESIGN***

According to the requirement specification, we decided to manipulate the JSON file with a structure of 3 JSON files as follows:

### 1. feedback.json

Contain a list of feedback. Each feedback has the following entry:

- Recipient name
- Sender name
- Title of the feedback
- Main content of the feedback

Data structure:

```
[
  {
    "from": "Tran Danh Tu",
    "to": "Tran Duy Anh",
    "title": "You are good at math",
    "message": "Please work hard on Physic"
  },
  {
    "from": "Le Kim Tung",
    "to": "Tran Duy Anh",
    "title": "You are so good at math",
    "message": "Help your friends"
  },
  {
    "from": "Tran Duy Anh",
    "to": "Le Kim Tung",
    "title": "You are not good at math",
    "message": "Please work hard"
  },
  {
    "from": "Nguyen Hoang Nam",
    "to": "Le Kim Tung",
    "title": "You are good at physic",
    "message": "Please help Nguyen Van A on exercise 5"
  }
]
```

## 2. revclass.json

Contain a list of teachers with their classes. Each of the items has the following entry:

- Name of responsible teacher
- Name of student
- Schedule for the next learning lesson

Data structure:

```
[
  {
    "studentname": "Nguyen Hoang Nam",
    "teacher": "Le Kim Tung",
    "time": "2022-08-10 08:00:00"
  },
  {
    "studentname": "Nguyen Toan",
    "teacher": "Le Kim Tung",
    "time": "2022-08-10 08:00:00"
  },
  {
    "studentname": "Nguyen Phuong",
    "teacher": "Nguyen Duy Anh",
    "time": "2022-08-10 14:00:00"
  },
  {
    "studentname": "Tran Nam",
    "teacher": "Nguyen Duy Anh",
    "time": "2022-08-10 14:00:00"
  }
]
```

### 3. students.json

Contain a list of students. Each student will have the following entry:

- Name of student
- Name of parent or guardian
- Name of responsible teacher
- Marks of 3 subjects
- Study the progress of the student, which is evaluated by the responsible teacher

Data structure:

```
[
  {
    "name": "Nguyen Hoang Nam",
    "mark": {
      "math": 10,
      "physic": 7,
      "chemist": 6
    },
    "parents": "Tran Duy Anh",
    "progress": "60",
    "teachername": "Le Kim Tung"
  },
  {
    "name": "Nguyen Hoang A",
    "mark": {
      "math": 5,
      "physic": 7,
      "chemist": 8
    },
    "parents": "Tran Toan",
    "progress": "80",
    "teachername": "Le Kim Tung"
  },
  {
    "name": "Nguyen Hoang V",
    "mark": {
      "math": 6,
      "physic": 8,
      "chemist": 8
    },
    "parents": "Le Kim Tung",
    "progress": "30",
    "teachername": "Tran Duy A"
  },
  {
    "name": "Nguyen Hoang S",
```

```
"mark": {  
  "math": 9,  
  "physic": 5,  
  "chemist": 7  
},  
"parents": "Tran Duc",  
"progress": "50",  
"teachername": "Tran Duy A"  
}  
]
```

#### 4. resources.json

Contain study resources. Each subject includes the following topics:

- Subject name
- Link
- Lesson title

Data structure:

```
[
  {
    "subject": "Math",
    "url": "http://esdudiez.edu.vn/asdsfgjsg",
    "title": "Exercise 2"
  },
  {
    "subject": "Physic",
    "url": "http://esdudiez.edu.vn/asdhjkjsg",
    "title": "Exercise 5"
  },
  {
    "subject": "Chemist",
    "url": "http://esdudiez.edu.vn/acvnfgjsg",
    "title": "Task 4"
  },
  {
    "subject": "Practice",
    "url": "http://esdudiez.edu.vn/xvbnvgjsg",
    "title": "Document 1"
  }
]
```

## STRESS TEST REQUEST

```
AkaDuc@DESKTOP-HOUADTQ c:\xampp
# "C:\xampp\apache\bin\abs.exe" -n 1000000 http://localhost/123/Techwiz2022/index.html?#!/
This is ApacheBench, Version 2.3 <$Revision: 1879490 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/
```

Benchmarking localhost (be patient)

```
Completed 100000 requests
Completed 200000 requests
Completed 300000 requests
Completed 400000 requests
Completed 500000 requests
Completed 600000 requests
Completed 700000 requests
Completed 800000 requests
Completed 900000 requests
Completed 1000000 requests
Finished 1000000 requests
```

```
Server Software:      Apache/2.4.53
Server Hostname:      localhost
Server Port:          80
```

```
Document Path:        /123/Techwiz2022/index.html?#!/
Document Length:       326 bytes
```

```
Concurrency Level:     1
Time taken for tests:   166.224 seconds
Complete requests:      1000000
Failed requests:         0
Non-2xx responses:      1000000
Total transferred:      533000000 bytes
HTML transferred:       326000000 bytes
Requests per second:    6015.97 [#/sec] (mean)
Time per request:       0.166 [ms] (mean)
Time per request:       0.166 [ms] (mean, across all concurrent requests)
Transfer rate:          3131.36 [Kbytes/sec] received
```

Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	0 0.3	0	3
Processing:	0	0 0.2	0	8
Waiting:	0	0 0.2	0	8
Total:	0	0 0.3	0	8

Percentage of the requests served within a certain time (ms)

50%	0
66%	0
75%	0
80%	0
90%	1
95%	1
98%	1
99%	1
100%	8 (longest request)

