



Exchangelicious

Savor the Flavor of Global Exchange!

Team 8: Lise, Tien, Hari, Seoyoung

The background is a solid light blue color. It is decorated with several white, stylized clouds of various sizes scattered across the top and bottom edges. Additionally, there are white dashed lines that form curved, wavy patterns on the left and right sides of the slide.

Presentation content

Motivation

Project Idea

Project Architecture

Implementation Status

Project discussion

Demonstration

Team Member Roles

Frontend:

Hari and Tien

Backend:

Lise and Seoyoung

Introduction motivation

Where should I exchange to?

01

Heavy Research

Places, courses, visa, time, accommodation...
lots to look for to do study abroad

02

Inefficiency

All the information is scattered around

What if everything everywhere all at once?

Create an all-in-one website

**Where all the information for study abroad exist and share
opinions among people who are interested**



Idea

- The user is a SKKU student
- We gather and display information about partner universities of SKKU.
- We provide filtering search to find appropriate university to study abroad according to one's needs
- The information needs to be helpful.
- Previous exchange students can write about their experience in the review section.
 - Upvote functionality

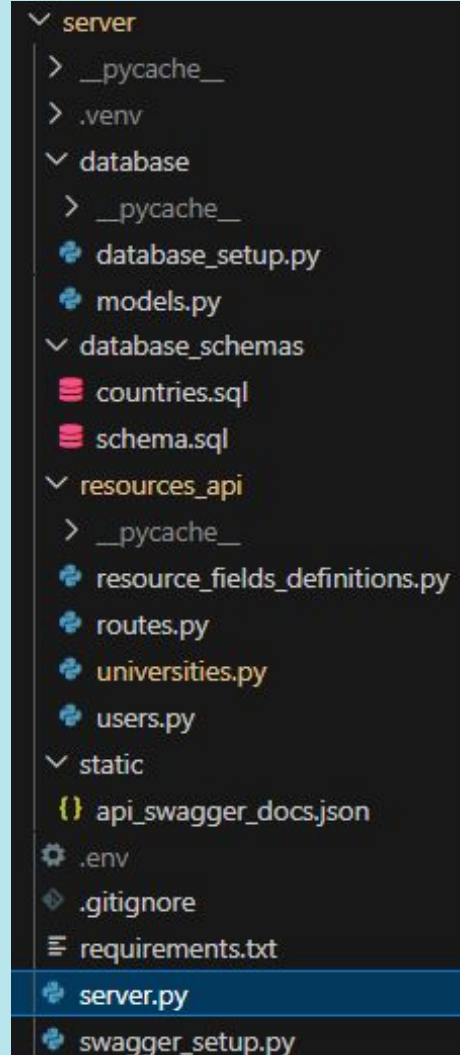
Project Architecture

- **MySQL**
 - **SQLalchemy**
- **Flask**
 - **Swagger**
- **Next.js**

Implementation details

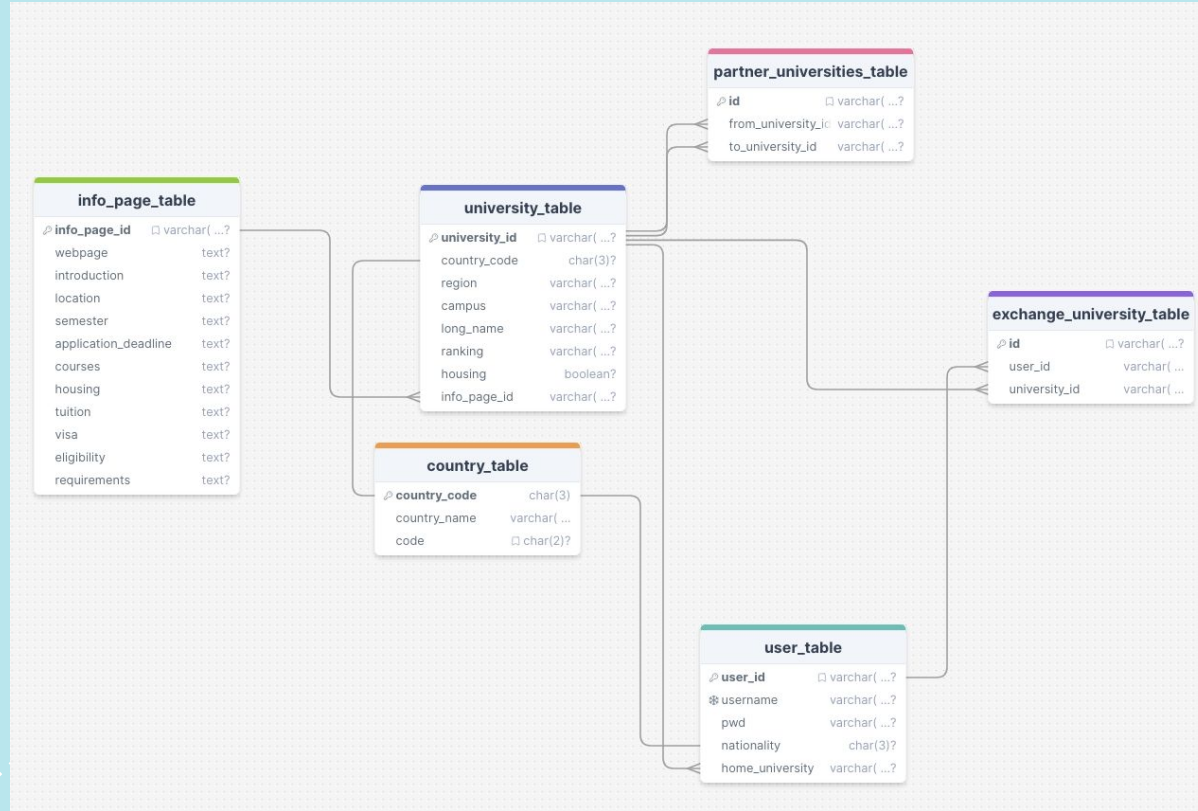
Implementation - Backend

- Database_schema
 - Schema definition
- Database
 - Connection to the database
 - Reflect the tables in the database
- Resource_api
 - The University/User resources
 - The routes - urls
 - Define the fields - marshall - serialization/deserialization
- Swagger setup and documentation
- Requirements.txt - Keep track of the venv



```
server
├── __pycache__
├── .env
├── database
│   ├── __pycache__
│   ├── database_setup.py
│   ├── models.py
│   └── database_schemas
│       ├── countries.sql
│       └── schema.sql
├── resources_api
│   ├── __pycache__
│   ├── resource_fields_definitions.py
│   ├── routes.py
│   ├── universities.py
│   └── users.py
├── static
│   └── api_swagger_docs.json
├── .env
├── .gitignore
├── requirements.txt
├── server.py
└── swagger_setup.py
```

Database diagram



Database connection

```
# loads the variables in the .env file so we can access them
load_dotenv()

def get_database_uri():
    uri = URL.create(
        "mysql+mysqlconnector",
        username=os.getenv("DB_USERNAME"),
        password=os.getenv("DB_PASSWORD"), # plain (unescaped) text
        host=os.getenv("DB_SERVER"),
        port= os.getenv("DB_PORT"),
        database=os.getenv("DB_NAME"),
    )
    return uri

db = SQLAlchemy()
```

```
create table university_table (
    university_id varchar(36) default (uuid()) primary key,
    country_code char(3),
    region varchar(40),
    campus varchar(255),
    long_name varchar(255),
    ranking int unsigned,
    housing boolean,
    info_page_id varchar(36),
    constraint country_code_fk_con
        foreign key (country_code) references country_table (country_code)
        on delete set null on update cascade,
    constraint info_page_id_fk_con
        foreign key (info_page_id) references info_page_table (info_page_id)
);
```

```
university_resource_fields = {
    "university_id": fields.String,
    "country_code": fields.String,
    "region": fields.String,
    "long_name": fields.String,
    "info_page_id": fields.String,
}
```

```
university_with_info_resource_fields = {
    "university_id": fields.String,
    "country_code": fields.String,
    "region": fields.String,
    "long_name": fields.String,
    "info_page_id": fields.String,
    "info_page_id": fields.String,
    "intro_text": fields.String,
    "intro_source": fields.String,
}
```

The endpoints

```
You, 5 days ago | 1 author (You)
23 class UniversityAllRes(Resource):
24     @marshal_with(university_resource_fields)
25     def get(self):
26         unis = UniversityTable.query.order_by(UniversityTable.long_name).all()
27         return [uni for uni in unis], 200
28
```

```
You, 2 hours ago | 1 author (You)
29 class UniversityPagination(Resource):
30     def __init__(self) -> None:
31         super().__init__()
32         self.reqparse = reqparse.RequestParser()
33         self.reqparse.add_argument('page_number', type = int, default=1, location = "args", required=True)
34         self.reqparse.add_argument('search_word', type = str, default="", location = "args", required=True)
35
36     # pagination: https://www.youtube.com/watch?v=hkL9pgCJPNk
37     @marshal_with(search_universities_resource_fields)
38     def get(self):
39         args = self.reqparse.parse_args()
40         page_number = args["page_number"]
41         search_word = args["search_word"]
42
43         if search_word == "":
44             res = db.paginate(select(UniversityTable), per_page=100, page=page_number)
45         else:
46             res = db.paginate(select(UniversityTable).where(UniversityTable.search_word == search_word), per_page=100, page=page_number)
47         return {"hasMore": res.has_next, "items": [r for r in res]}, 200
48
```

```

4 def initialize_routes(api):
5     # register the resource at a certain route
6     # beware. The address should not end with a slash
7     api.add_resource(UserRes, "/api/users/<string:user_id>")
8     api.add_resource(UsersAllRes, "/api/users")
9     api.add_resource(UniversityRes, "/api/universities/<string:university_id>")
10    api.add_resource(UniversityWithInfoRes, "/api/universities/<string:university_id>/info")
11    api.add_resource(UniversityAllRes, "/api/universities")
12    api.add_resource(UserWithUniversityRes, "/api/users/<string:user_id>/uni")
13    api.add_resource(UniversityPagination, "/api/universities/search")
14
```

Swagger

```
20 + SWAGGER_URL = '' # URL for exposing Swagger UI (without trailing '/')
21 + API_URL = '/static/api_swagger_docs.json' # Our API url (can of course be a local resource)
22 +
23 + # Call factory function to create our blueprint
24 + swaggerui_blueprint = get_swaggerui_blueprint(
25 +     SWAGGER_URL, # Swagger UI static files will be mapped to '{SWAGGER_URL}/dist/'
26 +     API_URL,
27 +     config={ # Swagger UI config overrides
28 +         'app_name': "EduVenture Api Docs"
29 +     }
30 + )
31 + app.register_blueprint(swaggerui_blueprint)
```

You, 2 weeks ago | 1 author (You)

```
1 {
2   "openapi": "3.0.3",
3   "info": {
4     "title": "EduVenture API Documentation",
5     "description": "Some useful links:\n- [Swagger Editor](https://editor.swagger.io/)\n- ",
6     "version": "1.0.0"
7   },
8   "tags": [
9     {
10      "name": "University",
11      "description": "Everything about the universities"
12    },
13    {
14      "name": "User",
15      "description": "Operations about user"
16    }
17  ],
18  "paths": {
19    "/api/universities": {
20      "get": {
21        "tags": [
22          "University"
23        ],
```

University Everything about the universities

GET

/api/universities Returns a list of all universities

GET

/api/universities/{university_id} Find university by ID

GET

/api/universities/{university_id}/info Find university by ID with info page

GET

/api/universities/search Search and paginate universities

User Operations about user

GET

/api/users Get a list of users

PUT

/api/users Create a user

PATCH

/api/users Update a user

DELETE

/api/users Delete a user

GET

/api/users/{user_id} Get a single user by ID

GET

/api/users/{user_id}/uni Get a single user by ID with uni-info

Implementation - Frontend

Reusable components

```
const buttonVariants = cva(
  "inline-flex items-center justify-center whitespace-nowrap rounded-lg font-medium transition-colors focus-visible:outline focus-visible:outline-2 focus-visible:outline-offset-2",
  {
    variants: {
      variant: {
        default:
          "bg-primary text-primary-foreground shadow hover:bg-primary/90",
        destructive:
          "bg-destructive text-destructive-foreground shadow-sm hover:bg-destructive/90",
        outline:
          "border border-input bg-background shadow-sm hover:bg-accent hover:text-accent-foreground",
        secondary:
          "bg-foreground text-background shadow-sm hover:bg-foreground/90",
        ghost: "hover:bg-accent hover:text-accent-foreground",
        link: "text-primary underline-offset-4 hover:underline",
      },
      size: {
        // default: "h-9 px-4 py-2",
        default: "h-9 px-5",
        // sm: "h-8 rounded-md px-3 text-xs",
        lg: "h-10 px-8",
        icon: "h-9 w-9",
      },
    },
    defaultVariants: {
      variant: "default",
      size: "default",
    },
  },
)
```

```
const Button = React.forwardRef<HTMLButtonElement, ButtonProps>(
  ({ className, variant, size, asChild = false, ...props }, ref) => {
    const Comp = asChild ? Slot : "button"
    return (
      <Comp
        className={cn(buttonVariants({ variant, size, className }))}
        ref={ref}
        {...props}
      />
    )
  }
)
Button.displayName = "Button"

export { Button, buttonVariants }
```

Color abstraction

```
@layer base {  
  :root {  
    --background: 0 0% 100%;  
    --foreground: 222 19% 13%;  
    --card: 0 0% 100%;  
    --card-foreground: 222 19% 13%;  
    --popover: 0 0% 100%;  
    --popover-foreground: 222 19% 13%;  
    --primary: 220 93% 61%;  
    --primary-foreground: 210 40% 98%;  
    --secondary: 210 40% 96.1%;  
    --secondary-foreground: 215 19% 25%;  
    --muted: 210 40% 96.1%;  
    --muted-foreground: 215.4 16.3% 46.9%;  
    --accent: 210 40% 96.1%;  
    --accent-foreground: 213 5% 39%;  
    --destructive: 0 84.2% 60.2%;  
    --destructive-foreground: 210 40% 98%;  
    --border: 214.3 31.8% 91.4%;  
    --input: 214.3 31.8% 91.4%;  
    --ring: 221.2 83.2% 53.3%;  
    --radius: 0.75rem;  
  }  
}
```


- **Sidefilter**
- **Search Bar (done)**
- **Search Results (done)**
- **Uni name, ranking filter**

QS Ranking: 115
Dormitory: Available

Search Bar

Q Search universities by name, region, country, etc :)

```
<form className="mx-auto max-w-full">
  <label
    htmlFor="default-search"
    className="sr-only mb-2 text-sm font-medium text-muted-foreground dark:text-white"
  >
    Search
  </label>
  <div className="relative mb-5">
    <div className="pointer-events-none absolute inset-y-0 start-0 flex items-center ps-3">
      <MagnifyingGlassIcon className="h-5 w-5 text-[#b9c1ca]" />
    </div>
    <input
      type="search"
      id="default-search"
      className="focus:border-b-3 block w-full rounded-t-lg border-b-2 border-secondary bg-ba
      placeholder="Search universities by name, region, country, etc :)"
      value={query}
      onChange={handleSearch}
      style={{ textOverflow: 'ellipsis' }}
      required
    />
  </div>
</form>
```

Search Result (display)

Norwegian University of Science and Technology

Trondheim, Gjøvik, Ålesund | Ålesund Campus

QS Ranking: 292


Dormitory: Not Available

```
export function UniCard(props: { university: University }) {
  return (
    <Link href={` /exchange/${props.university.university_id}`} >
      <div className="block text-left">
        <div className="max-w-full mx-auto p-4 bg-white flex flex-col lg:flex-row justify-between items-start lg:items-center hover:bg-gray-100 transition-colors duration-150" >
          { /* Combined Section for Mobile, split into Left and Right for Desktop */ }
          <div className="flex flex-col flex-grow sm:text-left">
            <h2 className="text-xl-plus text-secondary-foreground font-bold mb-1.5">{props.university.long_name}</h2>
            <p className="text-muted font-medium mb-1.5">{props.university.region} | {props.university.campus}</p>
          </div>


          <div className="flex flex-col sm:flex-row sm:w-full text-left lg:w-fit lg:flex-col sm:justify-between lg:justify-normal lg:text-right pl-0 lg:pl-4 sm:flex-grow">
            <p className="text-muted font-medium mb-1.5">QS Ranking: {props.university.ranking}</p>
            <p className="text-muted font-medium">Dormitory: {props.university.housing ? "Available" : "Not Available"}</p>
          </div>
        </div>
      </div>
    </Link>
  );
}
```

Information page

- Webpage
- Location
- Semester
- Application deadline
- Courses
- Housing
- Tuition
- Eligibility
- Requirements

 Exchangeelicious

HomeExchangeMy PageSign up



University of Oslo

Oslo
QS Ranking #117

InformationReviews

Webpage: <https://www.uio.no/english/>

I. Introduction

Founded in 1811, UiO is the country's largest and oldest university, renowned for its world-class research and commitment to scholarly advancement. At UiO, students have access to a wide range of programs across disciplines, including humanities, social sciences, natural sciences, law, and medicine.

II. Location

Oslo, the capital of Norway, is a vibrant city where modernity meets rich cultural heritage. Set against the backdrop of the Oslofjord and surrounded by lush forests, Oslo offers a perfect blend of urban excitement and natural tranquility. Explore its bustling streets lined with trendy cafes, boutiques, and museums, including the iconic Viking Ship Museum and the striking Opera House. Immerse yourself in the city's diverse culinary scene, from traditional Norwegian delicacies to international flavors. Whether you're strolling through the historic streets of Karl Johans gate or hiking in the nearby forests, Oslo captivates with its beauty, charm, and endless opportunities for adventure.

III. Semester

The academic year starts in August and ends in June.

Autumn semester: early/mid August - 19-22 December

I. Introduction

II. Location

III. Semester

IV. Application deadline

V. Courses

VI. Housing

VII. Tuition

VIII. Visa

IX. Eligibility

X. Requirements

↑ Back to top

Rendering Markdown

```
<Markdown
  remarkPlugins=[[remarkGfm]]
  className="prose font-medium text-secondary-foreground"
  components={{
    a: ({ node, href, ...props }) => (
      <Link
        {...props}
        href={href as Url}
        target="_blank"
        className="text-primary underline underline-offset-4 hover:text-primary/80"
      />
    ),
  }}
  >
  {value}
</Markdown>
```

The academic year begins in August (Fall Semester) and ends in May (Spring Semester)

- Spring Semester: mid January - mid May
- Fall Semester: mid August - mid December

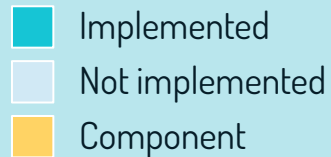
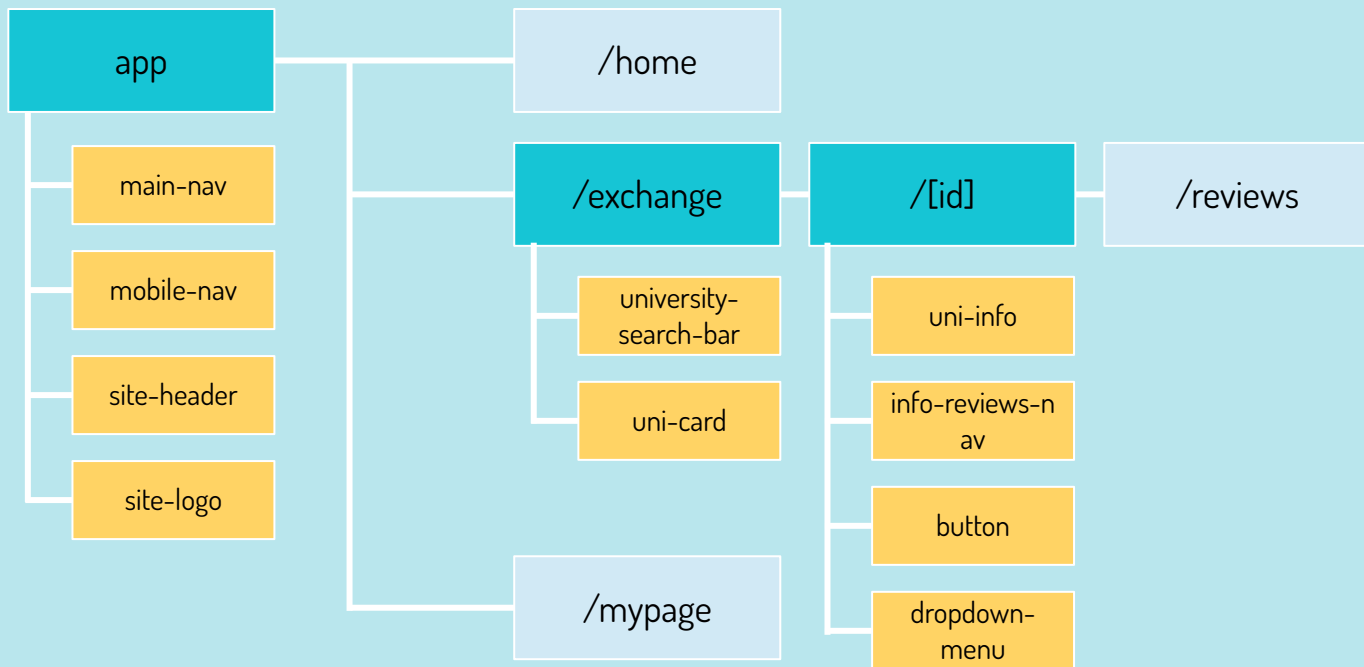
Source: <https://www.utdallas.edu/academics/calendar/>

The academic year begins in August (Fall Semester) and ends in May (Spring Semester)

- Spring Semester: mid January - mid May
- Fall Semester: mid August - mid December

Source: <https://www.utdallas.edu/academics/calendar/>

Frontend Components



Project Discussion

- We have made a MVP that mostly answers the goal
- Missing
 - User login and registration
 - The review/comment section functionality
 - Advanced filtering/ordering
- How to collect data? Manual vs. Scraping/crawling
 - Team restructuring

Demonstration

EduVenture Api Docs

ExchanGe

localhost:8080/#/

Swagger
Supported by SMARTBEAR

/static/api_swagger_docs.json

Explore

EduVenture API Documentation

1.0.0OAS3

/static/api_swagger_docs.json

Some useful links:

- [Swagger Editor](#)
- [Swagger Documentation](#)

University

Everything about the universities

GET

/api/universities

Returns a list of all universities

▼

GET

/api/universities/{university_id}

Find university by ID

▼

GET

/api/universities/{university_id}/info

Find university by ID with info page

▼

GET

/api/universities/search

Search and paginate universities

▼

User

Operations about user

GET

/api/users

Get a list of users

▼

PUT

/api/users

Create a user

▼

Thank you 🤪