Degrees with Desai

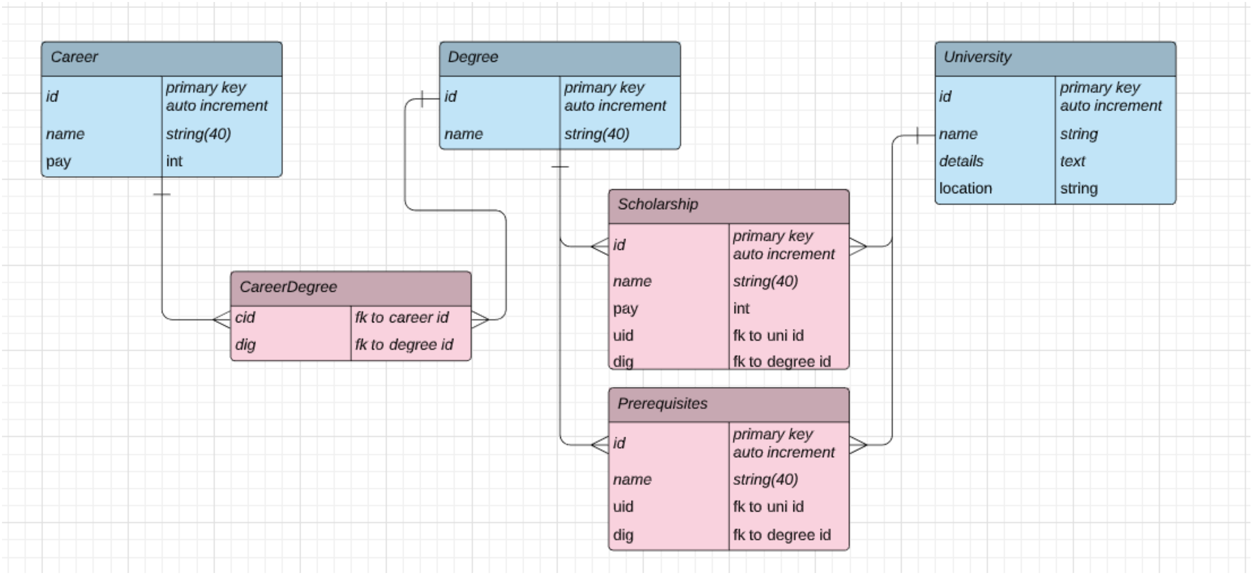
*Get your degree Desai-ded NOW!*

## Idea:

The idea for my project is to create a website for high school students to inform them about possible degrees they can take at university and also scholarships and prerequisites for degrees. This is because lots of students can't decide on what to study at university, but also lots of people cannot take the degree they wanted because they haven't taken a pre-required subject. The website will give them information about different degrees such as possible careers, and scholarships, as well as information about different universities such as world rankings and "best known for."

## Database:

*Scholarships table if I have time to implement



| Career | |
|---|---|
| id | primary key<br>auto increment |
| name | string(40) |
| pay | int |

| Degree | |
|---|---|
| id | primary key<br>auto increment |
| name | string(40) |

| University | |
|---|---|
| id | primary key<br>auto increment |
| name | string |
| details | text |
| location | string |

| Scholarship | |
|---|---|
| id | primary key<br>auto increment |
| name | string(40) |
| pay | int |
| uid | fk to uni id |
| dig | fk to degree id |

| CareerDegree | |
|---|---|
| cid | fk to career id |
| dig | fk to degree id |

| Prerequisites | |
|---|---|
| id | primary key<br>auto increment |
| name | string(40) |
| uid | fk to uni id |
| dig | fk to degree id |

-

## Website Layout:

Pages -

Home

Degrees

- All Degrees
  - Show all Degrees and add filtering system (filter by university and subjects)
- Individual Degree pages
  - Possible careers
  - Universities that offer this degree

        - recommended/required school subjects

Universities (individual pages for each university)

- Individual University pages
    - Details about university
    - Offered degree programmes
    - Location

Careers

- All Careers
    - Show all careers and add filtering system (filter by degree)
- Individual Career pages
    - Description of career
    - Salary
    - Job expectancy
    - Degrees that can lead to this career

**Routes and Functions:**

Home -

 /,  /home

home()

Careers -

 /careers

careers()

Individual careers -

/careers/<id>

career()

Degrees-

/degrees

degrees()

Individual degrees-

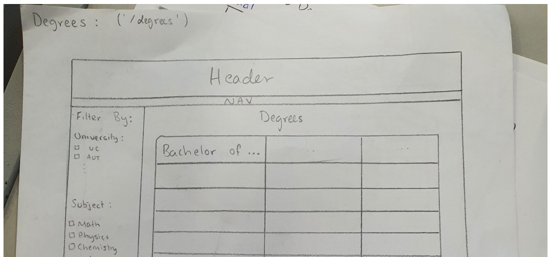
/degrees/<id>

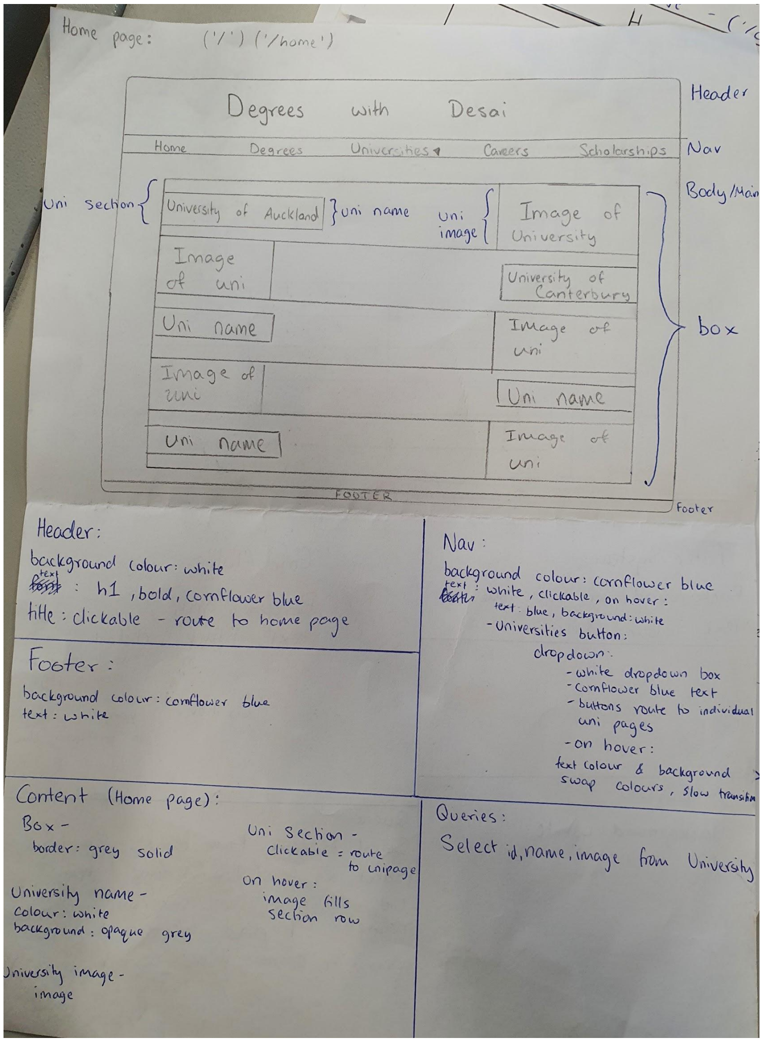
degree()

Individual Universities -

 /university/<id>

university()





Header:

background colour: white

~~font~~ text : h1, bold, cornflower blue

title : clickable - route to home page

Footer:

background colour: cornflower blue

text: white

Nav:

background colour: cornflower blue

text : white, clickable, on hover: text: blue, background: white

- Universities button:
  dropdown:
  - white dropdown box
  - cornflower blue text
  - buttons route to individual uni pages
  - on hover: text colour & background swap colours, slow transition

Content (Home page):

Box -
border: grey solid

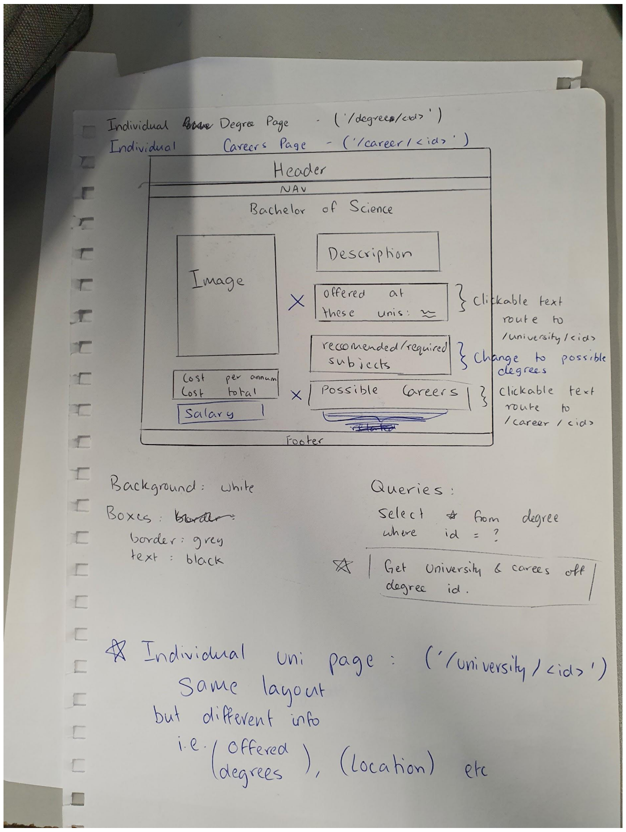
University name -
colour: white
background: opaque grey

University image -
image

Uni Section -
Clickable = route to unipage
on hover:
image fills section row

Queries:

Select id, name, image from University



Individual Degree Page - ('/degree~~s~~/<id>')

Individual Careers Page - ('/career/<id>')

Header
NAV
Bachelor of Science
Image
Description
offered at these unis:
reccomended/required subjects
Cost per annum
Cost total
Salary
Possible Careers
~~related~~
Footer
Clickable text route to /university/<id>
Change to possible degrees
Clickable text route to /career/<id>

Background: white

Boxes: ~~border~~
border: grey
text : black

Queries:

Select ☆ from degree where id = ?

☆ | Get University & carees off degree id.

☆ Individual Uni page : ('/university/<id>')
Same layout
but different info
i.e. (offered degrees), (location) etc

## Development:

### Changes made:

- Removed Scholarships Table

The reason I removed the scholarships table was because I did not have enough time to implement it

- Removed Careers Table

The reason I removed the careers table was because there were too many career options, which meant that I would not have enough time to enter in all of the careers for each degree, and entering only one or two would not be ideal as it may mislead the users.

- Added Likes Column to Degree Table

I added the likes column to the degrees table because it allowed users to like and see which degrees are popular among themselves. This gives insight into how much competition they will face when applying for that degree. The popularity of a degree may also be useful for social people as it shows that there are many others with similar interests.

- Changed color theme

The reason I changed the colour scheme was because of user feedback. The old color scheme only utilised two colours which caused two issues: The website felt boring, which was the first issue, and the second issue was that as the two colors did not allow for contrast within the website, which prevented me from highlighting important information. The new colour scheme is monochromatic, and I have kept using blue as the base colour, but I now have a variety of blues and whites, which solve my issue.

Feedback from: Kelso du Mez , Liam Ceelen-Thomas , Damien Leung

- Changed Home Page

The initial plan of the home page was very bleak and was essentially useless. It did not provide any information and it's only use was to navigate to university pages, which can be done using the nav bar. The home page still allows users to navigate through to university pages, but now also provides tips on selecting degrees, which is the purpose of the website.

Feedback from: Kelso du Mez , Liam Ceelen-Thomas , Damien Leung , Dafydd Spratt , Damian Fraser

**Tools Used:**

I used Visual Studio Code. The alternatives to this were atom and repl.it. The reason I used VS Code was because it is a widely used IDE including in real-world programming environments. VS Code comes with many IDE benefits such as code completion and github integration, which speed up development, and also allow me to “push” and “pull” with ease, which means I can easily update my code using cloud services without having to download my code when I want to work from another device.

I also used SQLAlchemy to connect to my database, as it has very good integration with Python, which is my backend programming language for my website. An alternative to this would be SQLite3, which I have previously used, however SQLAlchemy allows for easier query and relationship setup within Python. It also prevents SQL Injection attacks, securing my project more efficiently, compared to SQLite 3. Another advantage of SQLAlchemy is that it allows me to set up relationships between tables which I can easily access without having to write queries.

Another tool I used was Github. I used github to keep track of my modifications throughout the development process of my project. The reason for this is that Git also has a large community, and is well established. Using Git/Github, I can ‘roll back’ to previous working commits I have made if something goes horribly wrong during development. It also allows me to store my project in a cloud environment and access it easily from different devices securely.

I also used the chrome inspector. This tool allows me to test css properties without changing my actual code, as well as use the console for Javascript. This allows me to speed up my workflow as I can see the css changes I make in the inspector immediately without having to refresh the page every time I change my code. The inspector also allows me to use the console which is useful for Javascript. I can use it to debug and print messages that allow me to identify what my javascript code is doing.

### Advanced Techniques:

- modifying data stored in collections (e.g. lists, arrays, dictionaries)

- Not Used

- storing multidimensional data in collections

- Storing query results (in a list of tuples)

- creating methods, functions, or procedures that use parameters and/or return values

- Routes and function to connect and execute queries

- responding to events generated by a graphical user interface (GUI)
- Website...

- using additional non-core libraries.
- Flask, WT Forms, SQL Alchemy

- CSS3 - Explained in code
- HTML - Used built-in tags like <nav></nav>, <header></header> etc

### Relevant Implications:

Intellectual property -

Intellectual property has to do with legal ownership of creations. This is about making sure that the information on my website is not stolen or illegal to use. This is important as if I did not have consent to use the given information, I could be fined or imprisoned as this would be illegal. To address this in my website, I have made sure to use images that are free and not copyrighted and also ensured that the written information is free to use. As the information about the universities are not mine, I have ensured that I am allowed to use such information from the respective University websites about degrees and other related data. This ensures I have addressed intellectual property as I have made sure that I have not stolen any data from anywhere, and have permission to use everything in my project. My website also does not store information about the user, and the only data the user can change is the likes on the degrees, however it is not possible to tell who liked the degree, and therefore the users intellectual property is secured. To ensure I was allowed to use the information, I went on the university websites and searched up the legal disclaimers that related to the information I used; and found that I can use the information in my website as it is not commercial and is for a school project.

Sustainability and Future Proofing

Sustainability and Future Proofing is about ensuring that my database works and displays the correct information at any time in the future. This is important because after a few years, universities may introduce new degrees or remove old ones. These changes need to be reflected in my database to ensure that the users are not shown incorrect information. My database can easily be updated at any time and these changes will be automatically implemented in my website due to the way the program is constructed (meaning no changes have to be made to the code) . This makes my project sustainable and future proof.

Functionality

Functionality is about making sure the product works as intended and doesn't break. This is important as without functionality, I would not be able to fulfil the intended purpose of my website as users will not be able to navigate to the information or the website may not even work at all. To address this in my website, I made sure to work on functionality in the first iteration so that I could have a minimum viable product. Then to ensure that everything works as intended and doesn't break, I did a lot of testing and fixed any bugs that I found. So now, my final product is robust and works as intended meaning my website can fulfil its requirements and purpose.

Accessibility
Accessibility is about ensuring that the project can be used by a wide range of people, including people with disabilities. This is important for my project because it needs to be accessible to everybody that needs information about university degrees, such as students, parents/caregivers, etc. This includes people with disabilities. To ensure accessibility, I have made sure that the website color scheme is monochromatic, thus enabling accessibility for colour blind people, I have also made sure to add alt text to all of my images, thus allowing the narrator to be used, enabling accessibility for people with weak eyesight.

Usability
Usability is about ensuring that the website is easy to use and not error prone. This is important as misclicks and typos are very common, however if something as simple as that were to cause my website to crash, it would be problematic. Usability ensures that users cannot accidentally 'break' the website, so they can easily find the information they are looking for. To ensure usability in my website, I have made sure to be consistent with my design, followed HCI heuristics, and made my website not error prone. Consistency can be seen with things like fonts, buttons, and colours. The website only has buttons as inputs, which are all controlled by the backend, which leaves no room for user error. The website also has a personalised 404 error page in case the user makes a mistake with the url, which helps redirect them to the home page.

## HCI:

User control and freedom

> Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process. This is reflected in the website through my 404 page. The page clearly tells them that there was a mistake somewhere, gives them a suggestion to a possible solution (tells them to check url) and has a button that takes them back to the home page. Another example is with the likes button. The button allows users to unlike a degree if they choose to. This may be if they change their mind about the degree, or if they accidentally clicked on the like button.

Consistency and standards

> Users should not have to wonder whether different words, situations, or actions mean the same thing. To ensure consistency and standards, I have followed common conventions throughout my website. For example, the navigation bar and header are

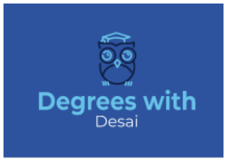
always at the very top of the page, which is common for a vast majority of websites, making it easy for users to follow. Another example of this is the layout for my pages is consistent as well. The buttons for my degrees are the same on the all degrees page, as well as individual university pages, and similarly, my university buttons are also consistent.

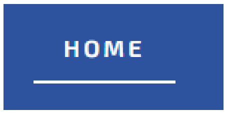
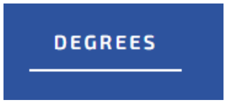
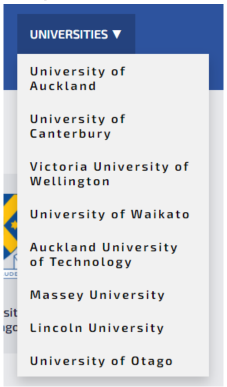
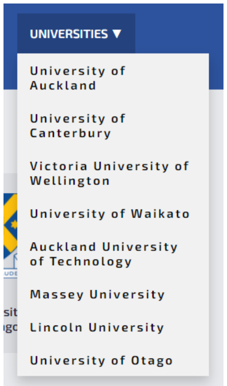
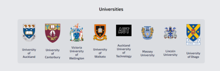
New HCI heuristics after feedback:

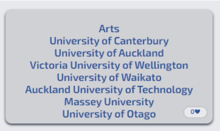
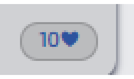
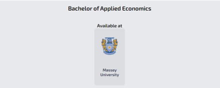
Aesthetic and minimalist design

Interfaces should not contain information which is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility. From my feedback, I found that the home page was very ‘texty’ and hard to read. The design was very minimalistic, however it lacked aesthetic which made it boring or difficult to read. To fix this, I added images/logos which provided colour and broke up the page into smaller sections. Another example is my filter system. Before feedback, my filter system was very condensed and hard to read as my filters for universities, degrees, and ordering were clumped together. By separating these, I made it easier for the users to read and understand the system.

## Testing

| What im testing | How im testing | Expected Output | Actual Output | Pass/Fail |
|---|---|---|---|---|
| **HEADER** | | | | |
| Logo<br> | Hover<br>Click | Hover: Cursor changes to pointer to show clickable<br>Click: Route to homepage | Hover: As expected<br>Click: As expected | Pass |
| **NAV BAR** | | | | |
| Home Button | Hover<br>Click | Hover: Cursor pointer and white underline effect | Hover: As expected<br>Click: As expected | Pass |

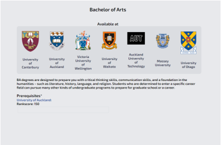
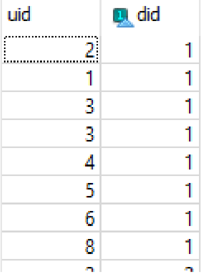
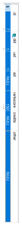
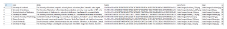
| | | | | |
|---|---|---|---|---|
| <br>HOME | | Click: Route to all home page | | |
| Degrees Button<br><br>DEGREES | Hover<br>Click | Hover: Cursor pointer and white underline effect<br>Click: Route to all degrees page | Hover: As expected<br>Click: As expected | Pass |
| Universities Dropdown<br><br>UNIVERSITIES ▼<br>University of Auckland<br>University of Canterbury<br>Victoria University of Wellington<br>University of Waikato<br>Auckland University of Technology<br>Massey University<br>Lincoln University<br>University of Otago | Hover | Hover: Displays dropdown box that shows all universities and box around it darkens | Hover: As Expected | Pass |
| Individual University Buttons<br><br>UNIVERSITIES ▼<br>University of Auckland<br>University of Canterbury<br>Victoria University of Wellington<br>University of Waikato<br>Auckland University of Technology<br>Massey University<br>Lincoln University<br>University of Otago | Hover<br>Click | Hover: Background darkens and white underline effect<br>Click: Route to respective university page | Hover: As expected<br>Click: As expected | Pass |
| **HOME PAGE** | | | | |
| Individual University Buttons<br><br>Universities | Hover<br>Click | Hover: White underline effect<br>Click: Route to respective university page | Hover: As expected<br>Click: As expected | Pass |
| Tips for choosing a degree | Hover<br>Click | Hover: White underline effect | Hover: As expected | Pass |

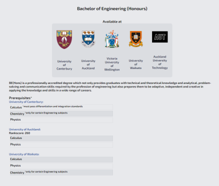
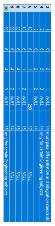
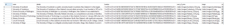
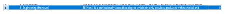
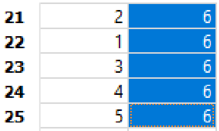
| | | | | |
|---|---|---|---|---|
| <br>What Are Your Biggest Priorities?<br>What Are You Interested In?<br>What Are You Good At?<br>How Rigorous Will the Coursework Be?<br>What Does Your Academic Advisor Say?<br>Understanding your natural skills and talents can go a long way in helping you make an informed and confident decision when choosing a major. One way of determining which academic fields best suit you is to take a close look at your class grades in high school. Doing this can highlight your strengths in specific academic areas. | | Click:<br>Displays respective tip text in adjacent box.<br>Darkens tip button to show it has been clicked.<br>Lightens other tip button if they are darkened<br>Removes text from other tips | Click: As expected | |
| **ALL DEGREES** | | | | |
| Individual Degree Buttons<br><br>Arts<br>University of Canterbury<br>University of Auckland<br>Victoria University of Wellington<br>University of Waikato<br>Auckland University of Technology<br>Massey University<br>University of Otago<br>0♥ | Hover<br>Click | Hover:<br>Text changes colour to blue<br>Box displays all the universities the degree is available at<br>Shadow around box sharpens<br>Click: Routes to respective degree page | Hover: As expected<br>Click: As expected | Pass |
| Like Button for degrees<br><br>10♥ | Hover<br>Click | Hover: Button Darkens<br>Click: Likes increases in database and is shown | Hover: As expected<br>Click: Number of likes only changes once the page is reloaded | Fail<br>(*Fixed) |
| **INDIVIDUAL DEGREES PAGE** | | | | |
| University Buttons<br><br>Bachelor of Applied Economics<br>Available at<br>Massey University | Hover<br>Click | Hover: White underline effect to show clickable<br>Click: Route to respective university page | Hover: As Expected<br>Click: As expected | Pass |

## Data Integrity:

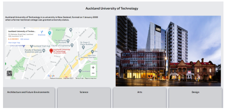
| What I’m testing | Website | Database | Source | Pass/Fail |
|---|---|---|---|---|
| **DEGREES** | | | Canterbury:<br>https://www.canterbury.ac.nz/study/qualifications-and-courses/bachelors-degrees/<br>Auckland:<br>https://www.auckland.ac.nz/en/study/study-options/find-a-study-option.html?programmeType=bachelors,certificate,undergraduate-diploma&_charset_=UTF-8#list<br>Otago:<br>https://www.otago.ac.nz/study/enrolment/general-bachelors.html<br>Massey:<br>https://www.massey.ac.nz/massey/about-massey/calendar/qualification-regulations/bachelors-degrees/bachelors-degrees_home.cfm<br>Victoria:<br>https://www.wgtn.ac.nz/study/programmes-courses/undergraduate<br>AUT:<br>https://www.aut.ac.nz/study/study-options<br>Lincoln:<br>https://www.lincoln.ac.nz/study/study-programmes/prog | |

| | | | | |
|---|---|---|---|---|
| | | | ramme-search<br>Waikato: https://www.waikato.ac.nz/study/qualifications - | |

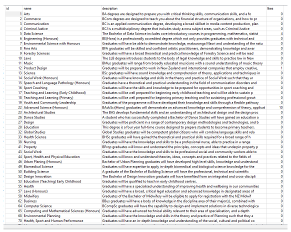
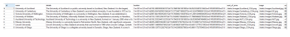
| | | | | |
|---|---|---|---|---|
| Arts |  Bachelor of Arts<br>Available at<br>University of Canterbury<br>University of Auckland<br>Victoria University of Wellington<br>University of Waikato<br>Auckland University of Technology<br>Massey University<br>University of Otago<br>BA degrees are designed to prepare you with critical thinking skills, communication skills, and a foundation in the humanities – such as literature, history, language, and religion. Students who are determined to enter a specific career field can pursue many other kinds of undergraduate programs to prepare for graduate school or a career.<br>Prerequisites*<br>University of Auckland:<br>Rankscore: 150 | id name description<br>1 Arts BA degrees are designed to prepare you with critical thinking skills, communication skills, and a fo<br> uid did<br>2 1<br>1 1<br>3 1<br>3 1<br>4 1<br>5 1<br>6 1<br>8 1<br> id did uid sid rankscore credits other<br>1 1 1 NULL 150 NULL NULL<br> | Canterbury: https://www.canterbury.ac.nz/study/qualifications-and-courses/bachelors-degrees/bachelor-of-arts/<br>Auckland: https://www.auckland.ac.nz/en/study/study-options/find-a-study-option/bachelor-of-arts-ba.html<br>Otago: https://www.otago.ac.nz/courses/qualifications/ba.html<br>Massey: https://www.massey.ac.nz/massey/about-massey/calendar/qualification-regulations/bachelors-degrees/bachelor-of-arts.cfm<br>Victoria: https://www.wgtn.ac.nz/explore/degrees/arts/overview<br>Waikato: https://www.waikato.ac.nz/study/qualifications/bachelor-of-arts<br>AUT: https://www.aut.ac.nz/courses/bache | Pass |

| | | | | |
|---|---|---|---|---|
| | | | lor-of-arts | |
| Commerce | | | | Pass |
| Communication | | | | Pass |
| Criminal Justice | | | | Pass |
| Data Science | | | | Pass |
| Engineering (Honours) | <br>Bachelor of Engineering (Honours)<br>Available at<br>University of Canterbury<br>University of Auckland<br>Victoria University of Wellington<br>University of Waikato<br>Auckland University of Technology<br>BE(Hons) is a professionally accredited degree which not only provides graduates with technical and theoretical knowledge and analytical, problem-solving and communication skills required by the profession of engineering but also prepares them to be adaptive, independent and creative in applying the knowledge and skills in a wide range of careers.<br>Prerequisites*<br>University of Canterbury:<br>Calculus *must pass differentiation and integration standards<br>Chemistry *only for certain Engineering subjects<br>Physics<br>University of Auckland:<br>Rankscore: 260<br>Calculus<br>Physics<br>University of Waikato:<br>Calculus<br>Physics<br>Chemistry *only for certain Engineering subjects | <br>3 1 6 2 1 NULL 14 must pass differentiation and integration standards<br>4 2 6 2 3 NULL 14 only for certain Engineering subjects<br>5 3 6 2 2 NULL 14<br>6 12 6 1 1 260 17 NULL<br>7 13 6 1 2 NULL 16 NULL<br>8 28 6 4 1 NULL 16 NULL<br>9 29 6 4 2 NULL 14 NULL<br>10 30 6 4 3 NULL 16 only for certain Engineering subjects<br><br><br>6 6 Engineering (Honours) BE(Hons) is a professionally accredited degree which not only provides graduates with technical and 0<br><br>21 2 6<br>22 1 6<br>23 3 6<br>24 4 6<br>25 5 6<br>Available at Universities 1,2,3,4,5 (Auckland, UC, | | Pass |
| Environmental Science with Honours | | | | Pass |
| Fine Arts | | | | Pass |
| Forestry Sciences | | | | Pass |
| Laws | | | | Pass |
| Music | | | | Pass |
| Product Design | | | | Pass |
| Science | | | | Pass |
| Social Work (Honours) | | | | Pass |
| Speech and Language Pathology (Honours) | | | | Pass |

| | | | | |
|---|---|---|---|---|
| Sport Coaching | | | | Pass |
| Teaching and Learning (Early Childhood) | | | | Pass |
| Teaching and Learning (Primary) | | | | Pass |
| Youth and Community Leadership | | | | Pass |
| Advanced Science (Honours) | | | | Pass |
| Architectural Studies | | | | Pass |
| Dance Studies | | | | Pass |
| Design | | | | Pass |
| Education | | | | Pass |
| Global Studies | | | | Pass |
| Health Science | | | | Pass |
| Nursing | | | | Pass |
| Property | | | | Pass |
| Social Work | | | | Pass |
| Sport, Health and Physical Education | | | | Pass |
| Urban Planing (Honours) | | | | Pass |
| Biomedical Science | | | | Pass |
| Building Science | | | | Pass |
| Design Innovation | | | | Pass |
| Education (Teaching) Early Childhood | | | | Pass |
| Health | | | | Pass |
| Laws (Honours) | | | | Pass |

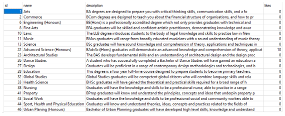
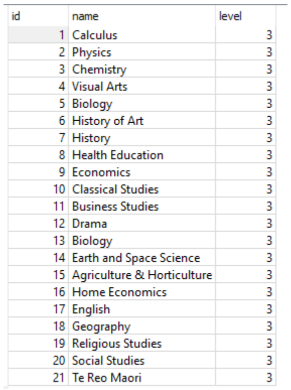
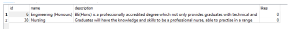
|  |  |  |  |  |
|---|---|---|---|---|
| Midwifery |  |  |  | Pass |
| Business |  |  |  | Pass |
| Computer Science |  |  |  | Pass |
| Computing and Mathematical Sciences (Honours) |  |  |  | Pass |
| **UNIVERSITIES** |  |  |  |  |
| University of Auckland |  |  | https://www.auckland.ac.nz/en.html | Pass |
| University of Canterbury |  |  | https://www.canterbury.ac.nz/ | Pass |
| Victoria University of Wellington |  |  | https://www.wgtn.ac.nz/ | Pass |
| University of Waikato |  |  | https://www.waikato.ac.nz/ | Pass |
| Auckland University of Technology | <br>Auckland University of Technology<br>Auckland University of Technology is a university in New Zealand, formed on 1 January 2000 when a former technical college was granted university status.<br>Architecture and Future Environments<br>Science<br>Arts<br>Design |  | https://www.aut.ac.nz/ | Pass |
| Massey University |  |  | https://www.massey.ac.nz/ | Pass |
| Lincoln University |  |  | https://www.lincoln.ac.nz/ | Pass |
| University of Otago |  |  | https://www.otago.ac.nz/ | Pass |

## Queries:

| Purpose | Query | Pass/Fail | Screenshot |
|---|---|---|---|
| All Degrees | SELECT * from Degree | Pass |  |
| All Universities | SELECT * from | Pass |  |

| id | name | description | likes |
|---|---|---|---|
| 1 | Arts | BA degrees are designed to prepare you with critical thinking skills, communication skills, and a fo | 0 |
| 2 | Commerce | BCom degrees are designed to teach you about the financial structure of organisations, and how to pr | 0 |
| 3 | Communication | BC is an applied communication degree, developing a broad skillset in media content production, plan | 0 |
| 4 | Criminal Justice | BCJ is a multidisciplinary degree that includes study across subject areas, such as Criminal Justice | 0 |
| 5 | Data Science | The Bachelor of Data Science includes core introductory courses in programming, mathematics, statist | 4 |
| 6 | Engineering (Honours) | BE(Hons) is a professionally accredited degree which not only provides graduates with technical and | 0 |
| 7 | Environmental Science with Honours | Graduates will have be able to demonstrate knowledge, matauranga Maori and understanding of the natu | 0 |
| 8 | Fine Arts | BFA graduates will be skilled and confident artistic practitioners, demonstrating knowledge and awar | 0 |
| 9 | Forestry Sciences | Graduates will have a broad theoretical and practical knowledge of Forestry Science and will be read | 0 |
| 10 | Laws | The LLB degree introduces students to the body of legal knowledge and skills to practise law in New | 0 |
| 11 | Music | BMus graduates will range from broadly educated musicians with a sound understanding of music theory | 0 |
| 12 | Product Design | Graduates will: be prepared to work in New Zealand and international companies that employ creative, | 1 |
| 13 | Science | BSc graduates will have sound knowledge and comprehension of theory, applications and techniques in | 0 |
| 14 | Social Work (Honours) | Graduates will have knowledge and skills in the theory and practice of Social Work such that they ar | 0 |
| 15 | Speech and Language Pathology (Honours) | Graduates have a theoretical and practical understanding in the field of communication disorders and | 0 |
| 16 | Sport Coaching | Graduates will have the skills and knowledge to be prepared for opportunities in sport coaching and | 0 |
| 17 | Teaching and Learning (Early Childhood) | Graduates will be well prepared for beginning early childhood teaching and will be able to sustain p | 0 |
| 18 | Teaching and Learning (Primary) | Graduates will be well prepared for beginning primary teaching and for sustaining professional growt | 0 |
| 19 | Youth and Community Leadership | Graduates of the programme will have developed their knowledge and skills through a flexible pathway | 0 |
| 22 | Advanced Science (Honours) | BAdvSci(Hons) graduates will demonstrate an advanced knowledge and comprehension of theory, applicat | 10 |
| 23 | Architectural Studies | The BAS develops fundamental skills and an understanding of architectural design and the design proc | 0 |
| 26 | Dance Studies | A student who has successfully completed a Bachelor of Dance Studies will have gained an education a | 0 |
| 27 | Design | Graduates will be proficient in a range of contemporary design methodologies and technologies, and b | 0 |
| 28 | Education | This degree is a four year full-time course designed to prepare students to become primary teachers. | 0 |
| 32 | Global Studies | Global Studies graduates will be competent global citizens who will combine language skills and rela | 0 |
| 33 | Health Science | BHSc graduates will have gained the theoretical and practical skills required for a broad range of h | 0 |
| 38 | Nursing | Graduates will have the knowledge and skills to be a professional nurse, able to practise in a range | 0 |
| 41 | Property | BProp graduates will know and understand the principles, concepts and ideas that underpin property p | 0 |
| 43 | Social Work | Graduates will have the knowledge and skills to be professional social and community workers able to | 0 |
| 44 | Sport, Health and Physical Education | Graduates will know and understand theories, ideas, concepts and practices related to the fields of | 0 |
| 46 | Urban Planing (Honours) | Bachelor of Urban Planning graduates will have developed high level skills, knowledge and understand | 0 |
| 49 | Biomedical Science | Graduates will have expertise to apply in-depth biomedical and biological science knowledge for the | 0 |
| 50 | Building Science | A graduate of the Bachelor of Building Science will have the professional, technical and scientific | 0 |
| 52 | Design Innovation | The Bachelor of Design Innovation graduate will have benefited from an integrated and cross-discipli | 0 |
| 53 | Education (Teaching) Early Childhood | Graduates will be qualified to teach in early childhood centres. | 0 |
| 55 | Health | Graduates will have a specialised understanding of improving health and wellbeing in our communities | 0 |
| 57 | Laws (Honours) | Graduates will have a broad, critical legal education and advanced knowledge in designated areas of | 0 |
| 58 | Midwifery | Graduates of the Bachelor of Midwifery will be eligible to apply for registration with the NZ Midwif | 0 |
| 62 | Business | BBus graduates will have a body of knowledge in the discipline area of their major(s), combined with | 0 |
| 64 | Computer Science | BCompSc graduates will have the capability to design and implement solutions in diverse technologica | 0 |
| 65 | Computing and Mathematical Sciences (Honours) | Graduates will have advanced technical ability relevant to their area of specialisation, and a depth | 0 |
| 68 | Environmental Planning | Graduates will have the knowledge and skills in the theory and practice of Planning such that they a | 0 |
| 70 | Health, Sport and Human Performance | Graduates will have an in-depth knowledge and understanding of the social, cultural and political co | 0 |

| id | name | details | location | coat_of_arms | image |
|---|---|---|---|---|---|
| 1 | University of Auckland | The University of Auckland is a public university based in Auckland, New Zealand. It is the largest, | [illegible] | /static/images/Auckland_COA.png | /static/images/Auckland.jpg |
| 2 | University of Canterbury | The University of Canterbury is New Zealand's second oldest university. It was founded in 1873 as Ca | [illegible] | /static/images/Canterbury_COA.png | /static/images/UC.jpg |
| 3 | Victoria University of Wellington | Victoria University of Wellington is a university in Wellington, New Zealand. It was established in | [illegible] | /static/images/Victoria_COA.png | /static/images/Victoria.jpg |
| 4 | University of Waikato | The University of Waikato, informally Waikato University, is a comprehensive university in Hamilton, | [illegible] | /static/images/Waikato_COA.png | /static/images/Waikato.jpg |
| 5 | Auckland University of Technology | Auckland University of Technology is a university in New Zealand, formed on 1 January 2000 when a fo | [illegible] | /static/images/AUT_COA.png | /static/images/AUT.jpg |
| 6 | Massey University | Massey University is a university based in Palmerston North, New Zealand, with significant campuses | [illegible] | /static/images/Massey_COA.png | /static/images/Massey.jpg |
| 7 | Lincoln University | Lincoln University is a New Zealand university that was formed in 1990 when Lincoln College, Canterb | [illegible] | /static/images/Lincoln_COA.png | /static/images/Lincoln.jpg |
| 8 | University of Otago | The University of Otago is a collegiate university based in Dunedin, Otago, New Zealand. It scores h | [illegible] | /static/images/Otago_COA.png | /static/images/Otago.jpg |

|  |  |  |  |
|---|---|---|---|
|  | University |  |  |
| Filtered Degrees by Universities | SELECT * FROM Degree WHERE Degree.id IN (SELECT UniversityDegree.did FROM UniversityDegree WHERE UniversityDegree.uid IN (SELECT University.id FROM University WHERE University.name = "Auckland")) | Failed<br>Fixed Query: SELECT * FROM Degree WHERE Degree.id IN (SELECT UniversityDegree.did FROM UniversityDegree WHERE UniversityDegree.uid IN (SELECT University.id FROM University WHERE University.name = 'University of Auckland')) |  |
| All Subjects | SELECT * from Subject | Pass |  |
| Filtered Degrees by Subjects | SELECT * FROM Degree WHERE Degree.id IN (SELECT Prerequisites.did FROM Prerequisites WHERE Prerequisites.sid IN (SELECT Subject.id FROM Subject WHERE Subject.name = "Calculus")) | Pass |  |

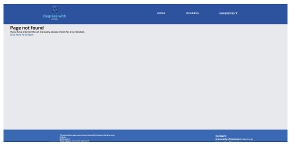
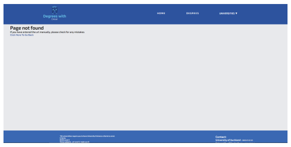
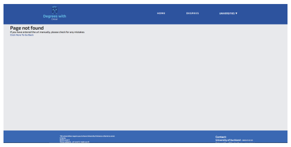
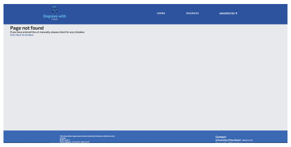
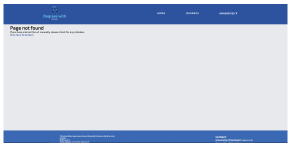
| id | name | description | likes |
|---|---|---|---|
| 1 | Arts | BA degrees are designed to prepare you with critical thinking skills, communication skills, and a fo | 0 |
| 2 | Commerce | BCom degrees are designed to teach you about the financial structure of organisations, and how to pr | 0 |
| 6 | Engineering (Honours) | BE(Hons) is a professionally accredited degree which not only provides graduates with technical and | 0 |
| 8 | Fine Arts | BFA graduates will be skilled and confident artistic practitioners, demonstrating knowledge and awar | 0 |
| 10 | Laws | The LLB degree introduces students to the body of legal knowledge and skills to practise law in New | 0 |
| 11 | Music | BMus graduates will range from broadly educated musicians with a sound understanding of music theory | 0 |
| 13 | Science | BSc graduates will have sound knowledge and comprehension of theory, applications and techniques in | 0 |
| 22 | Advanced Science (Honours) | BAdvSci(Hons) graduates will demonstrate an advanced knowledge and comprehension of theory, applicat | 10 |
| 23 | Architectural Studies | The BAS develops fundamental skills and an understanding of architectural design and the design proc | 0 |
| 26 | Dance Studies | A student who has successfully completed a Bachelor of Dance Studies will have gained an education a | 0 |
| 27 | Design | Graduates will be proficient in a range of contemporary design methodologies and technologies, and b | 0 |
| 28 | Education | This degree is a four year full-time course designed to prepare students to become primary teachers. | 0 |
| 32 | Global Studies | Global Studies graduates will be competent global citizens who will combine language skills and rela | 0 |
| 33 | Health Science | BHSc graduates will have gained the theoretical and practical skills required for a broad range of h | 0 |
| 38 | Nursing | Graduates will have the knowledge and skills to be a professional nurse, able to practise in a range | 0 |
| 41 | Property | BProp graduates will know and understand the principles, concepts and ideas that underpin property p | 0 |
| 43 | Social Work | Graduates will have the knowledge and skills to be professional social and community workers able to | 0 |
| 44 | Sport, Health and Physical Education | Graduates will know and understand theories, ideas, concepts and practices related to the fields of | 0 |
| 46 | Urban Planing (Honours) | Bachelor of Urban Planning graduates will have developed high level skills, knowledge and understand | 0 |

| id | name | level |
|---|---|---|
| 1 | Calculus | 3 |
| 2 | Physics | 3 |
| 3 | Chemistry | 3 |
| 4 | Visual Arts | 3 |
| 5 | Biology | 3 |
| 6 | History of Art | 3 |
| 7 | History | 3 |
| 8 | Health Education | 3 |
| 9 | Economics | 3 |
| 10 | Classical Studies | 3 |
| 11 | Business Studies | 3 |
| 12 | Drama | 3 |
| 13 | Biology | 3 |
| 14 | Earth and Space Science | 3 |
| 15 | Agriculture & Horticulture | 3 |
| 16 | Home Economics | 3 |
| 17 | English | 3 |
| 18 | Geography | 3 |
| 19 | Religious Studies | 3 |
| 20 | Social Studies | 3 |
| 21 | Te Reo Maori | 3 |

|  | id | name | description | likes |
|---|---|---|---|---|
| 1 | 6 | Engineering (Honours) | BE(Hons) is a professionally accredited degree which not only provides graduates with technical and | 0 |
| 2 | 38 | Nursing | Graduates will have the knowledge and skills to be a professional nurse, able to practise in a range | 0 |

## Boundary and Exception Tests:

| Route | Screenshot | Pass/Fail |
|---|---|---|

| | | |
|---|---|---|
| http://127.0.0.1:5000/degreestesting | <br> <br>Page not found<br>If you have entered the url manually, please check for any mistakes<br>Click Here To Go Back | Pass |
| http://127.0.0.1:5000/degree/0 | <br> <br>Page not found<br>If you have entered the url manually, please check for any mistakes<br>Click Here To Go Back | pass |
| http://127.0.0.1:5000/degree/-1 | <br> <br>Page not found<br>If you have entered the url manually, please check for any mistakes<br>Click Here To Go Back | Pass |
| http://127.0.0.1:5000/degree/testing | <br> <br>Page not found<br>If you have entered the url manually, please check for any mistakes<br>Click Here To Go Back | Pass |
| http://127.0.0.1:5000/degree/99999 | <br> <br>Page not found<br>If you have entered the url manually, please check for any mistakes<br>Click Here To Go Back | Pass |

### Iterative Improvements:

First stage: functionality
In the first stage, I focused on adding functionality. This included creating routes, html pages, creating and inserting information into my database, and making queries. At the end of this iteration, I had a working website with information about my topic but it was not presentable and very difficult to read

Second stage: aesthetics
Once my website had basic functionality, I made it look good enough to read. This involved changing some html, and adding some of css. At the end of this iteration, I had a working website with information about my topic, and it was readable.

Third stage: planned features
In this stage, I added the filter system and other planned features such as the grid for all degrees. This took a long time as I had to develop new queries and relationships and change my database a lot to get it working and look good. At the end of this iteration, I had a working

website with information about my topic, it looked as I had planned it to be, and had all the features that I had planned. At this point, my minimum viable product was ready.

Fourth stage: changes and new unplanned features
In this stage, I got feedback and worked on that feedback to change the website so it would look aesthetically pleasing and it would be easy to use. I also added other features such as the likes button for my degrees and the tips for choosing a degree. Finally, I made my website robust and added 404 handling. After this iteration, my project was almost complete. My website had correct information about all degrees/universities, had features such as filtering working and was robust.

Fifth Stage:
This last involved making the website look aesthetically pleasing and very easy to read/navigate. Prior to this, I had minimal images, and all of the information was on the page, and readable, however it did not look nice. This stage involved a lot of css and completed the website.

Final Stage:
After the pre-marking of my website, I found that there were several more improvements to be made. This included adding images, fixing some functionality to the website, and making it look slightly better (e.g. filter system was too clogged and needed to be spaced out nicely). After doing this, my project was completely finished and, after undergoing comprehensive testing, it was ready to submit.

### Future Planning:

Clicking on university buttons on the degree page should take you to a page where it gives you specific information about that degree for that specific university. This was feedback given from Mr Dunford, which I believe would be a very beneficial layer to my website. I however do not have enough time to implement this as of now, and so this will have to be delayed. Apart from this, I would like to add more information about degrees and universities to my website. This could include things like scholarships or maybe possible careers that the degrees can lead them to.