COMP.6214 Project 2: Project Proposal
A future that is not yet clear or defined

Kore Tautuhi: UNDEFINED

See your potential, Define your tomorrow

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Executive Summary

Navigating the vast and diverse landscape of S.T.E.A.M (Science, Technology, Engineering, Arts, and Mathematics) fields, especially technology, can be daunting for today's youth. The lack of clear pathways, available resources, and guidance often leaves them unsure of where to start or how to plan for their future careers. To bridge this crucial gap between school education and career aspirations, we present our innovative platform, designed to empower youth to define their own S.T.E.A.M journey.

Our website aims to provide a comprehensive and user-friendly solution, offering guidance on career aspirations and specific skills required to achieve their goals. We understand that each child's interests are unique, so our pathway builder system allows them to personalize their learning experience. Through this intuitive system, they can explore their passions, access learning resources, and gain a clear understanding of the steps needed to reach their desired career title or skill level.

By leveraging our platform, youth can define their own future and shape their learning journey with ease. We ensure that the process is manageable, navigable, and tailored to their interests, preventing overwhelm or confusion.

Our mission is to empower them to make informed decisions, stay motivated, and focus on acquiring the knowledge and skills that will lead them towards their desired end target.

By facilitating a seamless connection between their passions and relevant learning resources, we foster a generation of confident, informed, and successful individuals ready to make their mark in the dynamic world of S.T.E.A.M

Background

Many young individuals believe that pursuing a career in technology is too difficult, uninteresting, or financially out of reach, further contributing to a lack of enthusiasm. For those who show an interest, the overwhelming variety of paths available often adds stress and anxiety when deciding on a future career.

In response to these challenges, we have taken a proactive approach to promote S.T.E.A.M (Science, Technology, Engineering, Arts, and Mathematics) as a viable and exciting career option. Through community-focused career events, we have endeavoured to inspire and engage young minds by showcasing the endless opportunities in the world of S.T.E.A.M. Additionally, we have actively collaborated with schools, meeting with students to answer their questions, provide insights into S.T.E.A.M fields, and involve them in real-world scenario projects.

While these events serve as catalysts for sparking interest, there remains a critical need to assess their long-term impact and offer ongoing support to interested participants.

Project Team

Team members	Name	Email	Telephone
	Abby Crimlis	abby@ii.coop	

Project Objectives

Objective	Description	Measure of Success
Develop an interactive learning platform	Create a hub of learning resources for S.T.E.A.M	User feedback Is positive that they gained enjoyment and clarity whilst using the site
Provide Mechanisms for bespoke pathways	Assisting with guidance on how to achieve their career goals with steps to take and curated learning resources to help them with their journey	Users are actively engaging with the pathway models
Provide premade pathways	Users can pick a pre-built pathway model for each career title	Users are actively engaging with the pathway models
Supply Context	Context on S.T.E.A.M and why it is important to learn and contribute	The context provided is clear, concise and easily understandable
Provide guidance	How to stay safe online and encourage mindfulness when consuming technology	The guides given are extensive, understandable
Deliver content that is accessible by all	Ensuring the website is accessible to all and caters to various learning styles	Feedback given by users with accessibility needs is positive
Outreach	Use the website at various events across New Zealand and in schools	Interactions lead to users on the site

Project Scope

Objectives and features in scope:

- Interactive pathway modelling
    - The users will be able to create their own pathway using drag and drop interactive elements from a curated list of possible steps / learning fundamentals to achieve their current goals in S.T.E.A.M with ability to download the pathways
    - Users can choose premade pathways for a variety of career titles
- Curated learning resources
    - Learning resources will be generated for the steps they have chosen for their pathway model with the ability to download this as a list
- Digital safety
    - The site will have a section dedicated to digital awareness, the power of social media's influence and the process that is triggered when you visit websites online
- Accessible content
    - All learning resources generated will have a few options on how to learn the same thing, text based, video based, interactive experiences, podcasts
    - The site will have accessibility options to customize font size, colour of the page, screen readers
- Context
    - The site will supply brief history snippets of how technology has evolved and influenced our societies and culture and how they can benefit from a career in S.T.E.A.M
- Community contributions
    - The site will hold events that are happening in New Zealand and Globally as well as supply support via various channels to reach out and get more guidance (github, slack, dedicated email)
- Research
    - Find the gaps in the educational system, research what teachers need and what the children see as barriers as well as general questions they have about the industry and how they can be involved in.
- Ensuring site is bi-cultural
    - Māori and European theme, language and user stories

Out of scope

- Will only focus on S.T.E.A.M careers
- Will not have user accounts
- Will not track users process of their learning journey
- Only focusing on New Zealand

Assumptions:

- There is a need for this resource
- Willing participation from experts in the field to provide guidance and feedback on content

Constraints and potential problems:

- This project at this stage is timebound to 16 weeks
- There is no funding / budget for this project
- Constrained by my own knowledge and experience in the field

MOSCOW table

The table below clearly defines the features and the possibility of growth in the future to add more flexibility into the project and in hopes to make this project more S.M.A.R.T

The could and won't have sections are out of scope for this iteration of development but could be implemented in the next iteration of features

Feature	Must Have	Should Have	Could Have	Won't Have
Interactive Pathway Modelling	x			
Curated learning resources for Technology	x			
Curated learning resources for science		x		
Curated learning resources for Engineering		x		
Curated learning resource for Art		x		
Curated learning resource for Maths		x		
Digital safety awareness	x			
Accessibility controls	x			
Historical context		x		
Events	x			
Reach out support		x		
User Accounts				x
Various types of learning resources	x			
Gamified learning				x
Downloadable content	x			
Multi language support (Te-reo)	x			

Webinars				x
Where to next page			x	

Problem Statement

Technology-related careers are not popular among the youth, ranking 45th in job aspirations due to perceptions of difficulty, boredom, and financial constraints, the path to success in this career is varied and often overwhelming to anyone trying to start their journey in this space.

Project Objectives and Relevance:

The project aims to address these issues by creating an interactive learning platform that engages and empowers youth with technology. By offering a user-designed pathway system with curated content, the project seeks to remove the stigma associated with S.T.E.A.M fields and encourage learners to explore and embrace technology. The platform's focus on providing productive technology skills equips the youth for future careers and opportunities whilst helping to guide them to the resources that will help them achieve it and to define their own career path.

The project's purpose is to bridge gaps in the current education system and inspire youth to pursue S.T.E.A.M fields with confidence and enthusiasm. It specifically aims to provide guidance in their career journey, allowing them to set their own goals and aspirations, as well as give them resources to achieve it.

Required Team Knowledge and Skills:

To successfully complete the project, the team needs extensive knowledge and expertise in various areas, including:

Web-Based Platform Development: The team must possess in-depth knowledge of web technologies and best practices to create a robust and user-friendly interactive learning platform.

User Experience (UX) Design and Branding: Expertise in UX design is essential to ensure the platform's fluidity and ease of use, while effective branding will create an engaging and appealing user interface.

Content Curation and Learning Resources: The team should have access to a wide range of high-quality learning resources catering to diverse learning styles, ensuring comprehensive coverage of S.T.E.A.M topics.

Industry Connections and Feedback: Knowledge of industry connections is crucial to obtain valuable feedback and insights during platform development, ensuring its relevance and effectiveness.

Target Audience Engagement: The team must have access to the target audience for user feedback and reviews throughout the development process, ensuring the platform meets their needs and preferences.

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Major Tasks and Milestones

Task: Research and design	Start Date	End date	Milestone	Completed
User Research	14th August	18th August	User Stories	Done: 19th August
			User Needs	Done: 19th August
Branding Document	21st August	8th September	Logo	Done
			Colour Scheme	Done: 19th August
			Fonts	
			Philosophy	Done 25th August
UI / UX Design	3rd September	17th September	Create the Nav map	Done 25th August
			Define the structure	Done
			Write the content	Done
Curate the learning resources	18th August	9th September	Curate learning resources for each career / discipline	
			Categorize the resources into steps to be generated by the pathway model	Done
			All career titles have been listed	
			Create a model of criteria for how learning resources are decided	Done

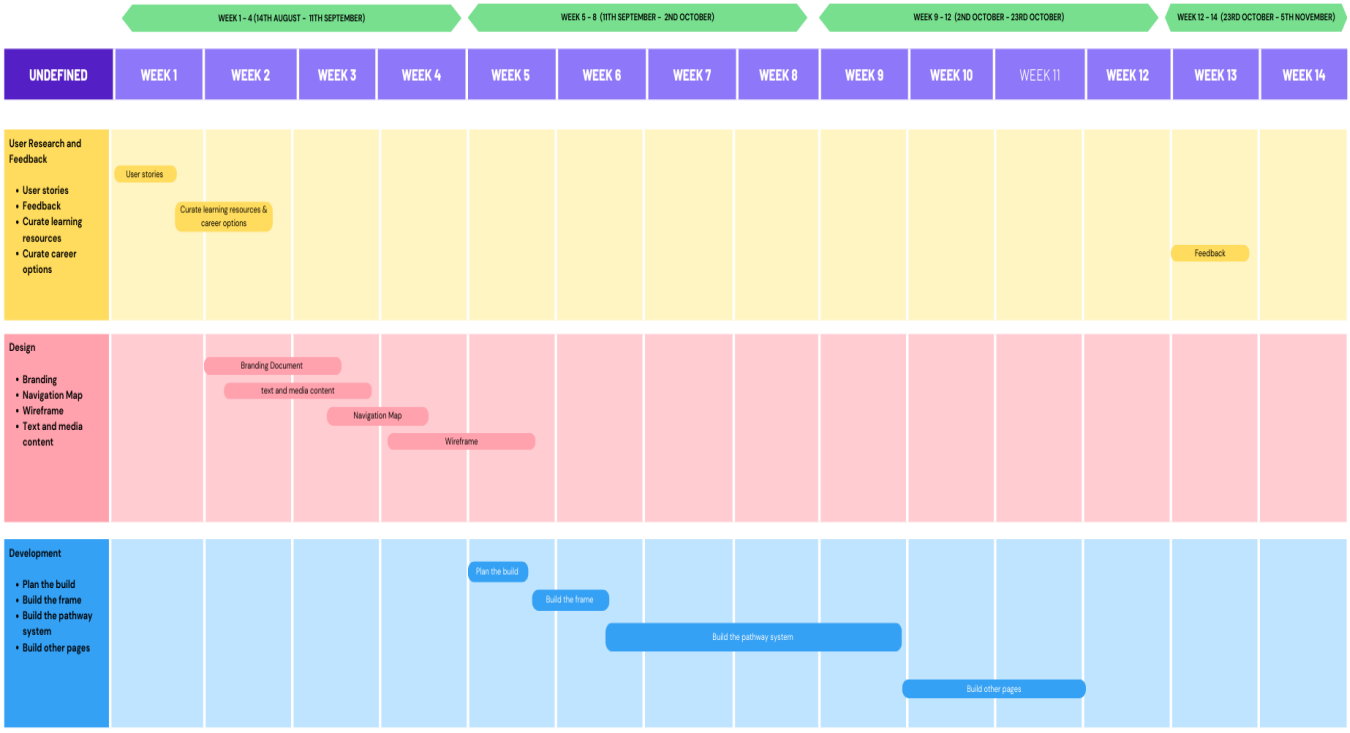
Task: Development	Start Date	End Date	Milestone	Completed
Plan the build	11th September	14th September	Language has been decided	Done 25th August

			Frameworks have been added to the project folder	Done 25th August
			Development tools have been chosen	Done 25th August
			Set up GitHub repo	Done
Build the frame	14th September	21st September	The layout has been implemented in accordance with the Navmap and other design documents	Done
Build the pathway system	22nd September	9th October	Elements for each discipline / step has been coded into a data structure	Done
			Drag and drop functionality works	Done 14th September
			Algorithm for generating learning resources for bespoke pathways is implemented	Done
			User can download the pathway they have created	Done
			Relevant career titles are given after completion of the pathway model to give further direction	Done
			Premade pathways chosen via career titles are available and output useful learning resources	Done / not done

Build the rest of the pages	9th October	23rd October	Digital safety page is active on the site	
			About page is active on the site	Done
			Events page is active on the site	

Task: User feedback	Start Date	End Date	Milestone	Completed
Conduct feedback	23rd October	5th November	Target audience is given access to the site to provide verbal and written feedback as part of a test-driven development protocol	

Gantt Chart



https://www.canva.com/design/DAFrHsYgZg8/rQREYCWs1svjXdWHmyG75Q/edit?utm_content=DAFrHsYgZg8&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton

Project Risks

Issue	**Probability**	**Impact**	**Schedule**	**Issue/Action**
[Issue]	[Select: High, Medium, Low]	[Select: High, Medium, Low]	[Days, Weeks, Month, Terminal]	[What could happen and what risk management strategies will you use to manage, avoid or respond to it?]
Unclear goals and Objectives	Low	High		Unclear goals and objectives can lead to wasting time working on tasks not detrimental to the success of the project and can lead to unclear operational methods. To allow this probability to stay low, this document will serve as a management plan for the goals and objectives, kept on track with grant charts and project management software like GitLab
Poorly defined project scope	Medium	High		Can lead to the project scope constantly been updated and changed and failure to adhere to the deadline schedules which can cause the project to overextend in budget and time, to manage this I will ensure that the project scope has been clearly defined and scheduled before the building stage commences
Poor time management	Medium	High		Due to the depth of this project, I will need to ensure that I manage my time effectively, as this is not the only project, I am working on I will need to ensure that time schedule is followed, and I prioritize according to deadlines
Bias in resources choice	High	High		Been the sole developer and designer for this application it is important that the various learning styles are incorporated into the learning resources and that they meet the requirements set in the learning model

Methodology

This project will adhere to an agile scrum methodology to allow for iterative changes due to the nature of involvement of user feedback from the target audience, the project is broken down into 4 sprints currently but will be broken down into sub sprints specifically for the development of the website.

I have chosen this methodology as it is quite a large project and the ability to manage small chunks at a time will be helpful in ensuring the minimal viable product is produced within the time frame.

Each stage will be given the appropriate amount of time to complete with the fluidity to back step through the stages.

Sprint 1: User research and planning

- 2 weeks has been allocated to this stage of the project

Sprint 2: Design

- 4 weeks has been allocated to this stage of the project

Sprint 3: Development

- 7 weeks has been allocated to this stage of the project

Sprint 4: User feedback

- 2 weeks has been allocated to this stage of the project

Deliverables

[Deliverable]	[Description of the deliverable…]	Achieved
User stories and needs	Well thought out and documented user stories to ensure the development of the project is useful to the target audience	Done
Branding	The site will need a logo, colour scheme and general theme running throughout, the theme will be depicted in the user stories, philosophy and the general colour scheme	Working on it
Navigation Map	A navigation map is needed to show the journey the user can take throughout the site and how the pages will connect to each other	Done
Define the wireframe	The wireframe will be used as a basis for design, how the content will be structured and how it will respond to various devices	Done
Curate the learning resources	The learning resources need to be categorized and sorted based on teaching style, topic and career	Working on it
Curate the career options	career opportunities to be displayed on completion of the pathway builder, this will be weighted by the specific steps the user has added to the bespoke path	Done and working on it
Create the text and media content	Decide on tone and wording of the site aswell as gather needed media.	Done
Plan the build	Language and framework need to be decided based on the needs of the site, GitHub repo needs to be created.	Done
Build the frame	Build the frame for navigation, content layout and needed pages	Done
Build the pathway system	The core component of the site, will need to programmatically output learning resources depending on the individual elements that have been added to the pathway, users can also choose pre-built pathways for specific career titles	Done
Build the history context page	This page will contain the history of technology and how it has evolved and how they can benefit from a career in S.T.E.A.M	Done
Build the about page	How to use the site	Done
Conduct user feedback	User feedback will be gathered when the build is complete, any feedback can be implemented as an iteration in the agile methodology	
Learning Model	A model to use as a checklist to ensure the learning resources match the needs of the users	Done

Philosophy

"Kei Te Ao Whakamāramatanga: UNDEFINED" embodies a philosophy deeply rooted in breaking down barriers for the youth in S.T.E.A.M careers. Our purpose is to illuminate the transformative potential of upskilling in Science, Technology, Engineering, Arts, and Mathematics (S.T.E.A.M), all while fostering a diverse and inclusive online landscape that resonates with the richness of cultures in Aotearoa

At "Kei Te Ao Whakamāramatanga: UNDEFINED," we firmly believe in removing obstacles to empower young minds to pursue their S.T.E.A.M aspirations with confidence. Our mission extends beyond career prospects; it is about personal growth, development, and collaboration.

Our approach is guided by the understanding that S.T.E.A.M education has the power to catalyze holistic transformation. By providing accessible resources, interactive learning experiences, and personalized pathways, we enable learners to chart their course with clarity and purpose.

As our name suggests, "Kei Te Ao Whakamāramatanga: UNDEFINED," we embrace the concept of an undefined future – a future shaped by the aspirations and determination of our learners. By fostering a space where pathways are tailored, growth is facilitated, and inclusivity is celebrated, we propel learners towards their goals.

"Kei Te Ao Whakamāramatanga: UNDEFINED" stands as a testament to the belief that growth knows no bounds, pathways are illuminated, and a brighter S.T.E.A.M future is attainable for all. We invite learners to join us in this journey of empowerment, exploration, and unlimited potential.

User Stories

User Story 1

Pathway Designer As a young learner, I want to build a personalized learning pathway in S.T.E.A.M, using interactive elements to plan my educational journey. I aim to download this pathway for future reference and guidance.

User Story 2

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Ready-to-Go Pathways Being uncertain about my S.T.E.A.M career, I seek established pathways that align with specific career titles. I intend to select from premade pathways that provide clear steps towards my desired career.

User Story 3

Resource Access As an eager learner, I wish to access curated learning resources relevant to my chosen pathway steps. I aim to download a comprehensive list of resources that will aid my learning.

User Story 4

Digital Safety Learner Being conscious of my online presence, I want to understand digital safety and its implications. I aim to learn about online security, the influence of social media, and how websites function.

User Story 5

Varied Learning Formats As a diverse learner, I seek learning resources in multiple formats, including text, videos, interactive experiences, and podcasts. I aim to customize my learning experience based on my preferences.

User Story 6

Inclusive Access With specific accessibility needs, I desire customization options to adjust font sizes, page colors, and compatibility with screen readers. I aim to access content in a way that suits my requirements.

User Story 7

Historical Insight Seeker Curious about the historical context of technology, I wish to explore how advancements have impacted societies and cultures. I aim to discover how pursuing a S.T.E.A.M career contributes to personal growth.

User Story 8

Engaging Community As a young enthusiast, I seek to engage with a community of peers who share my interests. I aim to participate in events, connect through platforms like GitHub and Slack, and seek guidance through a dedicated email address.

User Needs

User Need 1: Personalized Pathway Creation

Young learners need the ability to create tailored learning pathways in S.T.E.A.M using interactive tools. This empowers them to design their educational journey according to their goals, with the option to download their pathway for future reference.

User Need 2: Clear Pathway Selection

Students uncertain about their S.T.E.A.M career choices require access to predefined pathways aligned with specific career titles. This enables them to choose established routes that outline the necessary steps for their chosen careers.

User Need 3: Resource Access for Learning

Enthusiastic learners need easy access to curated and relevant learning resources corresponding to their chosen pathway steps. This provision allows them to acquire comprehensive resource lists that facilitate their learning process.

User Need 4: Digital Awareness and Safety

Users are seeking insights into digital safety, social media influence, and online browsing processes. They require a dedicated section to educate them about these aspects, enabling them to navigate the digital world responsibly.

User Need 5: Diverse Learning Formats

Diverse learners desire learning resources presented in various formats such as text, videos, interactive content, and podcasts. This flexibility accommodates individual learning preferences, ensuring an engaging educational experience.

User Need 6: Inclusive Accessibility

Users with specific accessibility needs require options to customize font size, page colors, and compatibility with screen readers. This feature ensures content accessibility, addressing the unique requirements of different learners.

User Need 7: Historical and Cultural Context

Curious learners seek historical insights on how technological advancements have shaped societies and cultures. They need a platform that highlights the impact of S.T.E.A.M careers on personal and societal growth.

User Need 8: Engaged Community Interaction

Young enthusiasts desire engagement with a supportive community. They seek involvement in events, networking through platforms like GitHub and Slack, and accessing guidance via a dedicated email channel.

Focus

Cultural Integration: By incorporating Māori language, the theme honors the Māori culture and its rich linguistic heritage. The choice of words reflects a harmonious blend of English and Māori, catering to both cultural communities.

Empowerment and Pathways: "Empowering Pathways" underscores the platform's objective of enabling learners to shape their educational journey according to their interests and goals, promoting a sense of ownership and direction.

Cultural Identity: The theme respects and acknowledges the bicultural nature of New Zealand by integrating both Māori and European cultural elements. It conveys a message of unity and inclusivity, highlighting the significance of diverse backgrounds.

S.T.E.A.M Focus: The theme's emphasis on "S.T.E.A.M" aligns with the platform's primary focus on Science, Technology, Engineering, Arts, and Mathematics. It resonates with the educational and career-related goals of the users.

Logo Concepts

Navigation Map

1. Home Page:

- Welcome and Introduction

- Overview of the Platform's Mission

2. Explore Pathways:

- Browse Different S.T.E.A.M Fields (Science, Technology, Engineering, Arts, Mathematics)

- Search for Specific Careers or Interests

3. Build Your Pathway:

- Interactive Pathway Builder Tool
  - Choose S.T.E.A.M Field
  - Save or Share Your Custom Pathway

4. Learning Resources:

- Curated Learning Materials for Each Field and Career
- Online Courses, Tutorials, Books, Videos, Blogs, etc.

5. Skill Development:

- Practical Steps to Develop Specific Skills
- Skill-Building Projects or Challenges

6. Events and Workshops:

- Information about S.T.E.A.M Events, Workshops, and Conferences
- Opportunities for Networking and Learning

9. Community and Support:

- Ask Questions, Share Experiences, Seek Advice

10. About Us:

- Details About the Platform's Mission and Vision
- Team Members, Contact Information

11. FAQ and Help:

- Frequently Asked Questions
- User Support and Troubleshooting

12. Get Involved:

- Volunteer Opportunities

13. Privacy and Policies:

- Privacy Policy, Terms of Use, Data Handling

14. History:

- Timeline of Major S.T.E.A.M Discoveries, Innovations, and Milestones

- Key Figures and Their Contributions

Learning Model

To ensure learning materials meet a certain standard.

https://www.education.govt.nz/assets/Documents/Ministry/Procurement/Effective-Educational-Resources-Information-Sheet-Mar-2018.pdf

1	have a clear instructional purpose
2	make positive connections with learners' knowledge, experience, and identity
3	build knowledge about what is required for achieving particular tasks
4	are engaging
5	support the use of assessment to enhance learning
6	are ethical, just, inclusive, and fair

7	**are well crafted, structured, and appropriate for their purpose**

Pre-defined career pathways

This section is for users who are curious about specific careers they will be able to view at least 10 careers for each discipline.

For this the careers need to be categorized by discipline for example, Game development: career titles, Sofware Development: Career title, etc

Re-structure the pathway to get there

Output resources to learn more and get started with the specific skills

Process

1. View steps
2. Order steps
3. Click next
4. First page step 1, learn more about the step, make selective choices on parts to learn
5. Repeat for rest of steps
6. Generate path
7. Output learning resources in order to follow

Undefined pathway builder system

This section allows the user to create their own pathway with topics they are interested in learning, they can then follow the steps with the learning resources that are generated, various career and course options are calculated using an algorithm that counts how many topics from each discipline the user has added to their path.

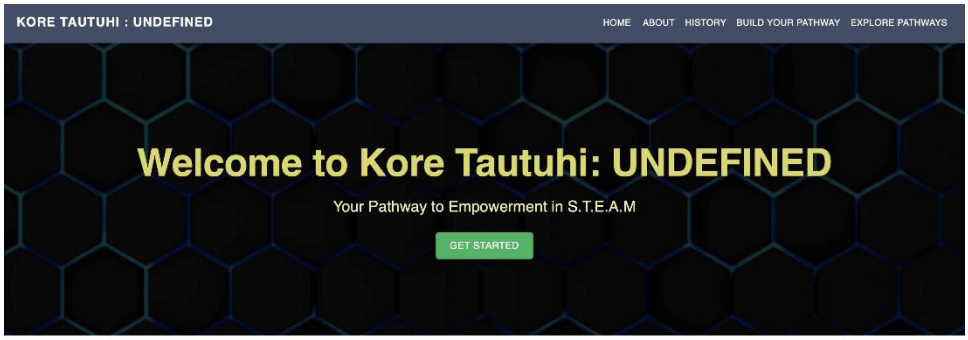
Process

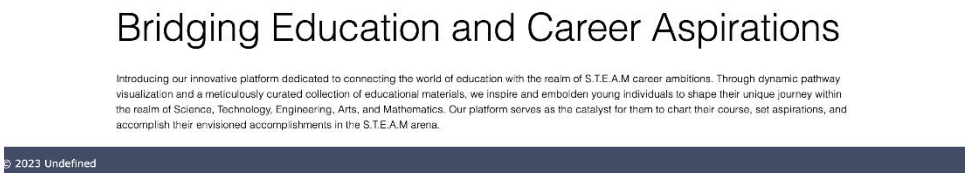
1. User browses through the various disciplines and topics available in S.T.E.A.M
2. They can click the info icon to learn more about a specific topic and the skills they will learn
3. The user can drag and drop into the designated area
4. They can remove the items
5. Once completed click the next button
6. View steps

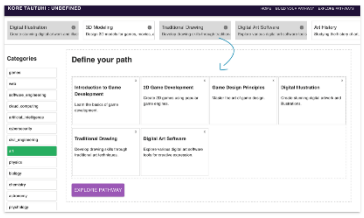
7. Order steps to their preference
8. Generate path
9. Output learning resources for each skill in the step
10. Download step as a PDF
11. Review possible career options and courses that may be of interest.

Design

Home page





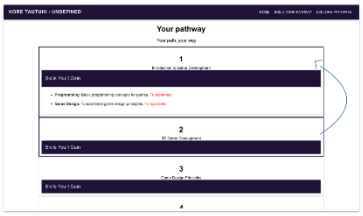


Step 1

- Browse through the various S.T.E.A.M categories.
- Use the info icon to learn more about specific modules.
- Drag the modules you are interested in learning into your pathway box.
- When ready, click the Explore Pathway button to move on to the next step.

Step 2

- You have the flexibility to prioritize and arrange the steps based on your preferences.
- Drag the boxes into the position that suits.
- You can also expand the "skills you'll gain" section to learn more about the skills and content you will be provided with.
- Click the Continue button to generate your bespoke pathway.



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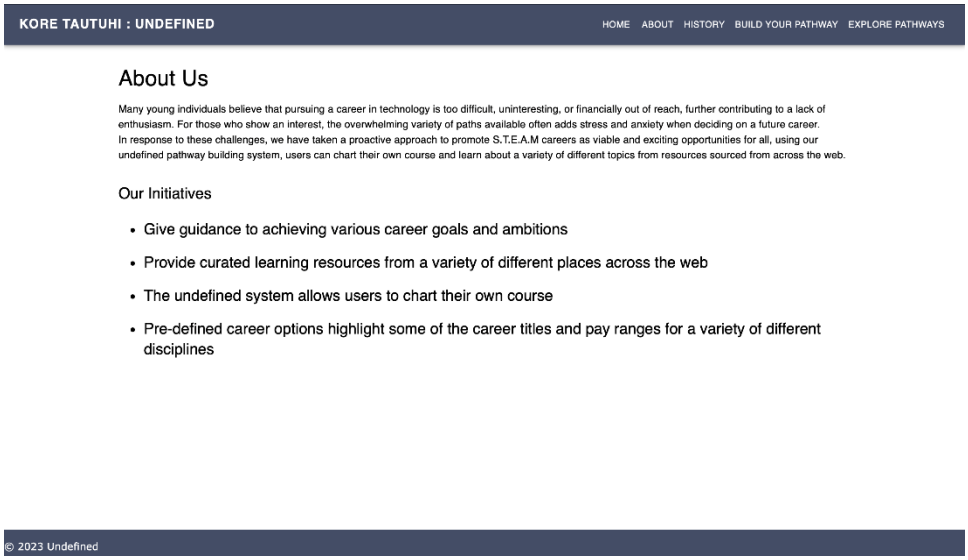
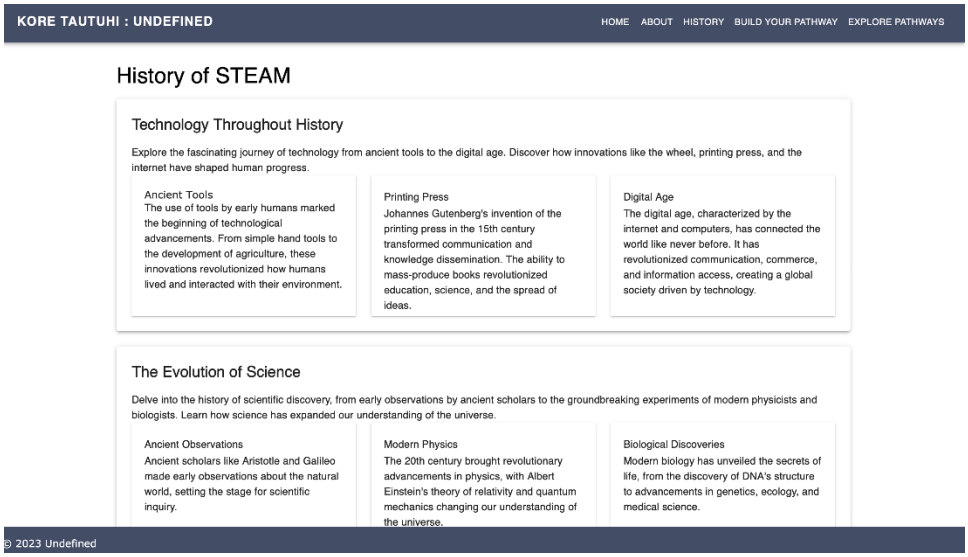
About page



History page:



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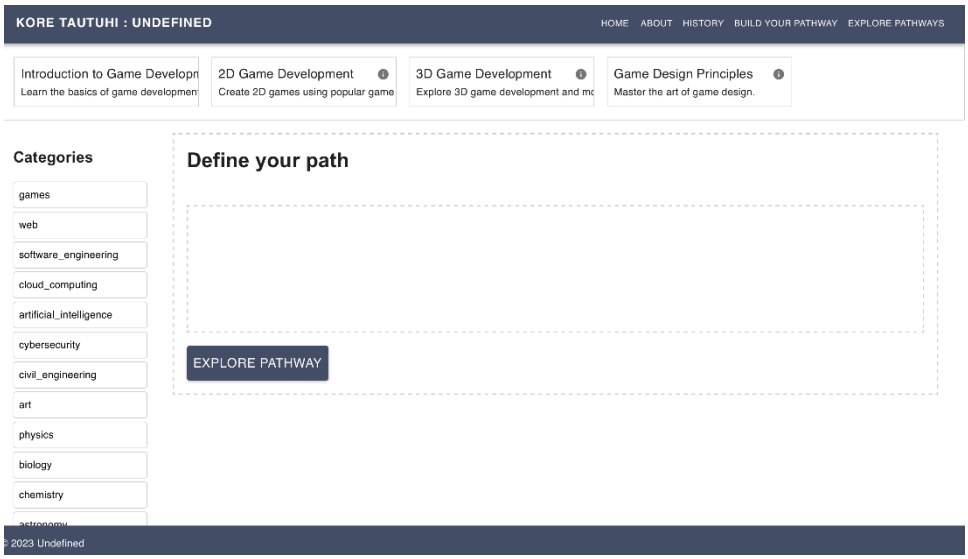
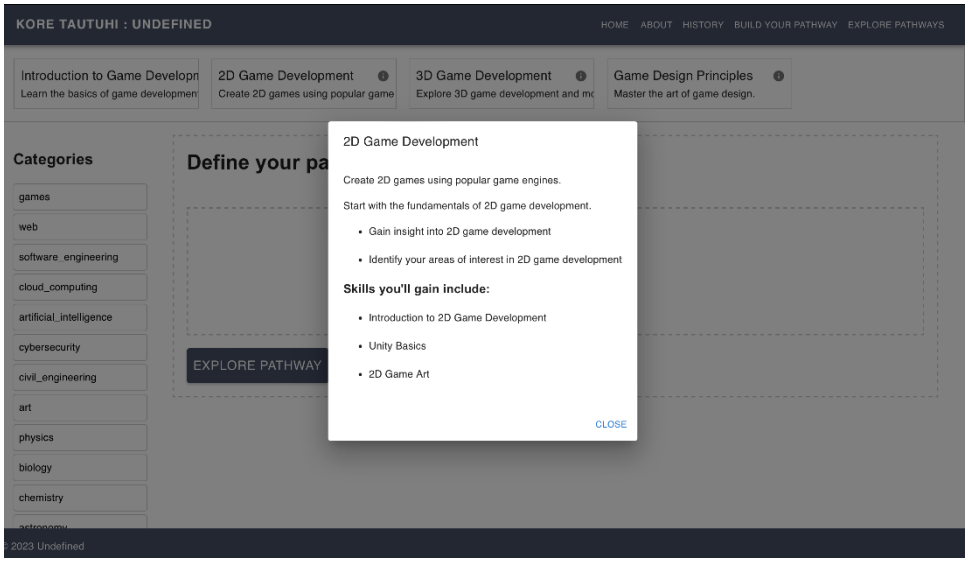
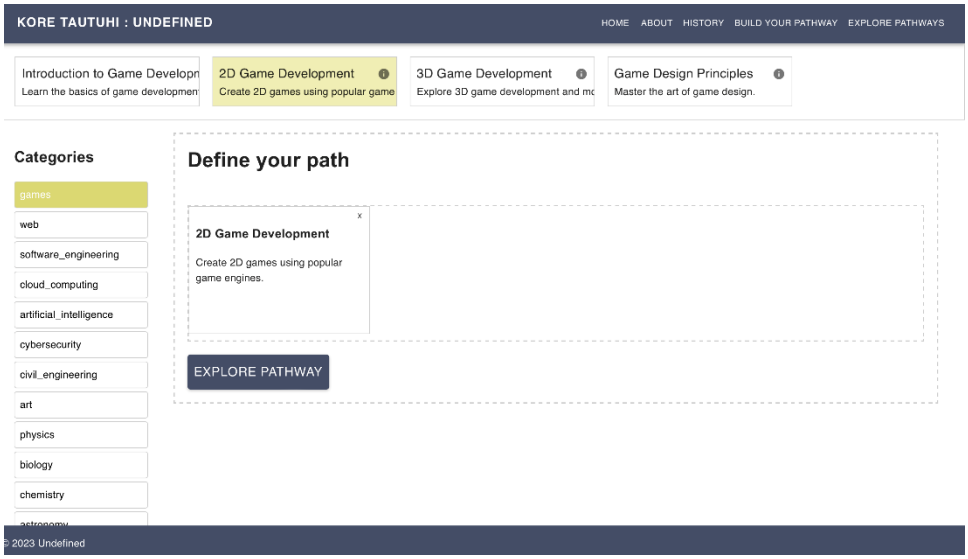
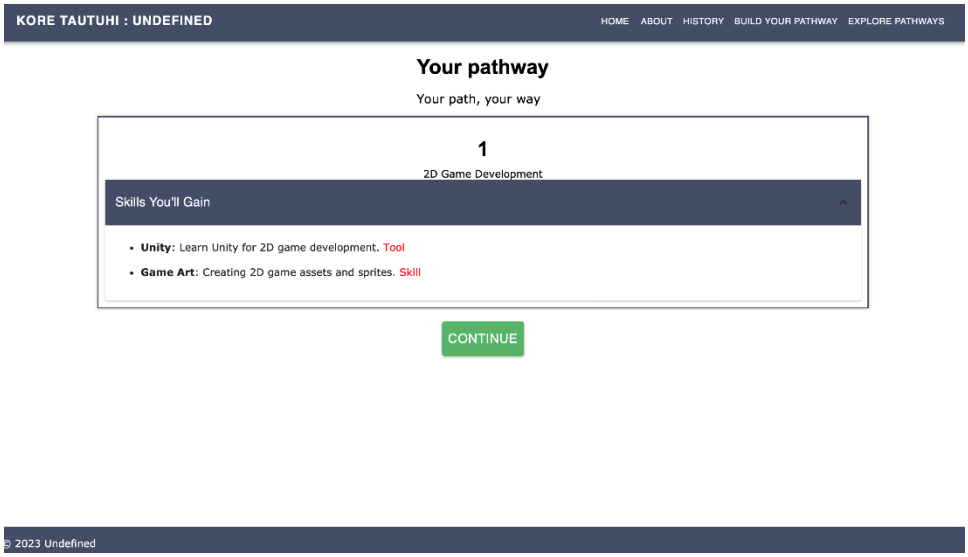
Undefined pathway builder



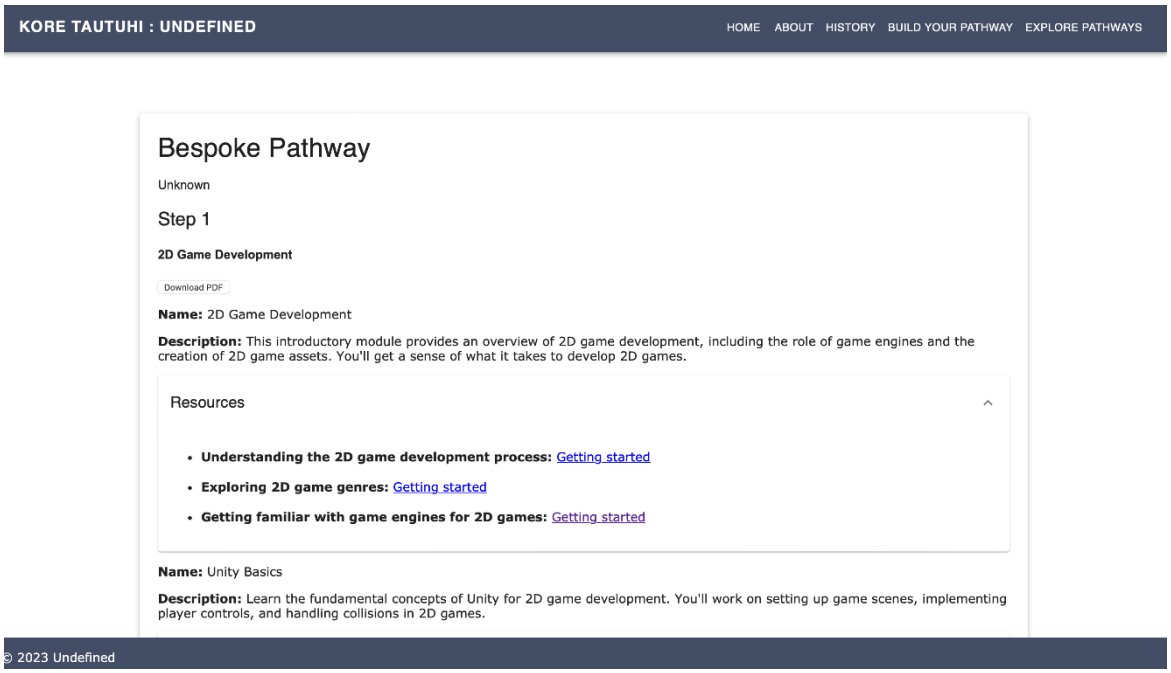




Step organisation:



Bespoke pathway:



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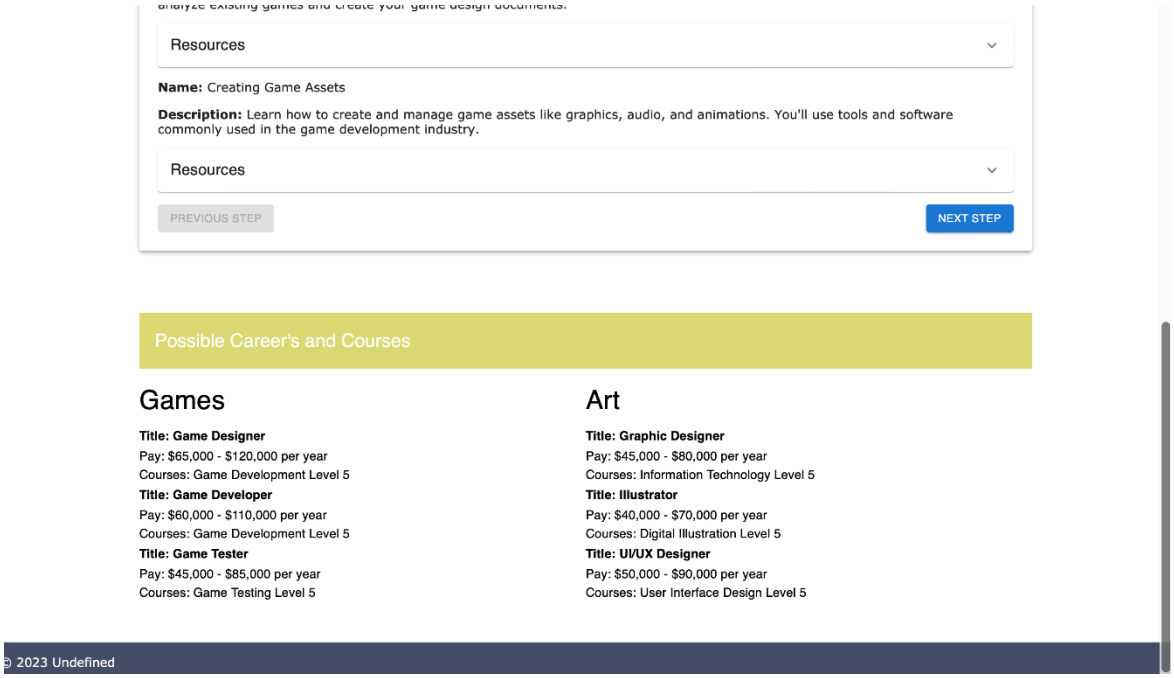
Career and course guidance:



PDF Download:

2D Game Development

Name: 2D Game Development

Description: This introductory module provides an overview of 2D game development, including the role of game engines and the creation of 2D game assets. You'll get a sense of what it takes to develop 2D games.

Skill: Understanding the 2D game development process

Resource: https://gamemaker.io/en/blog/how-to-make-a-2d-game

Skill: Exploring 2D game genres

Resource: https://gamemaker.io/en/blog/2d-game-genres

Skill: Getting familiar with game engines for 2D games

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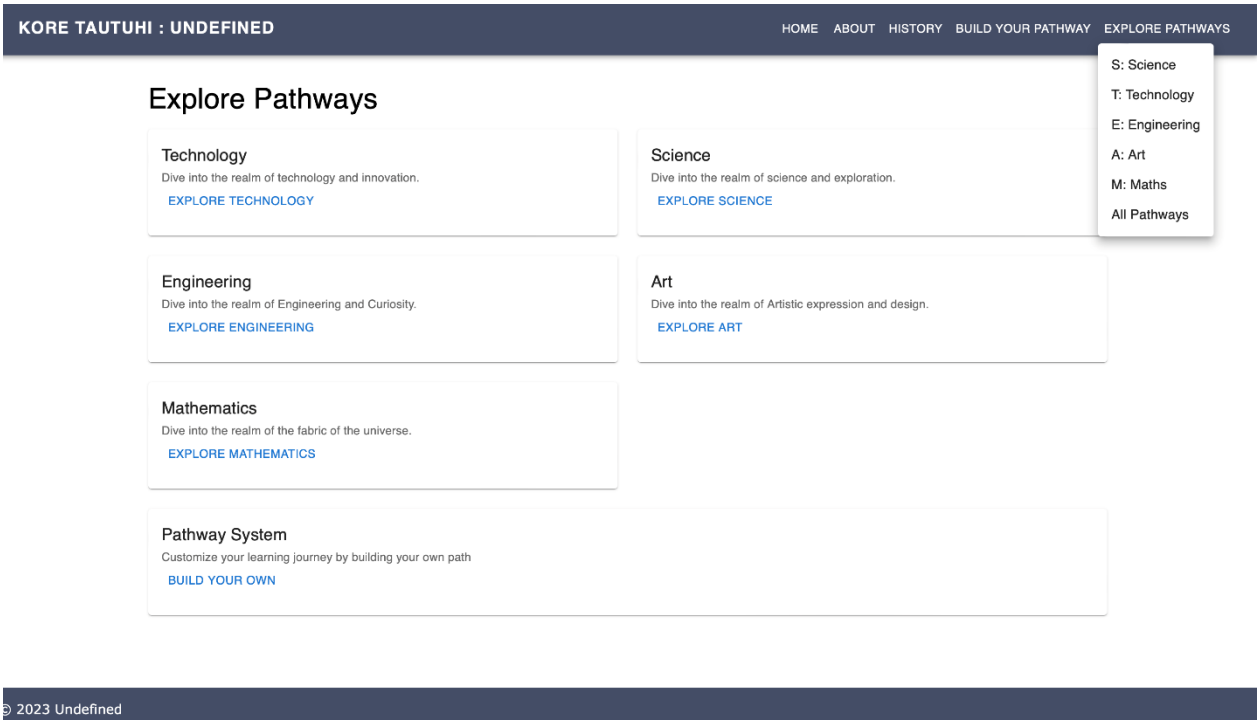
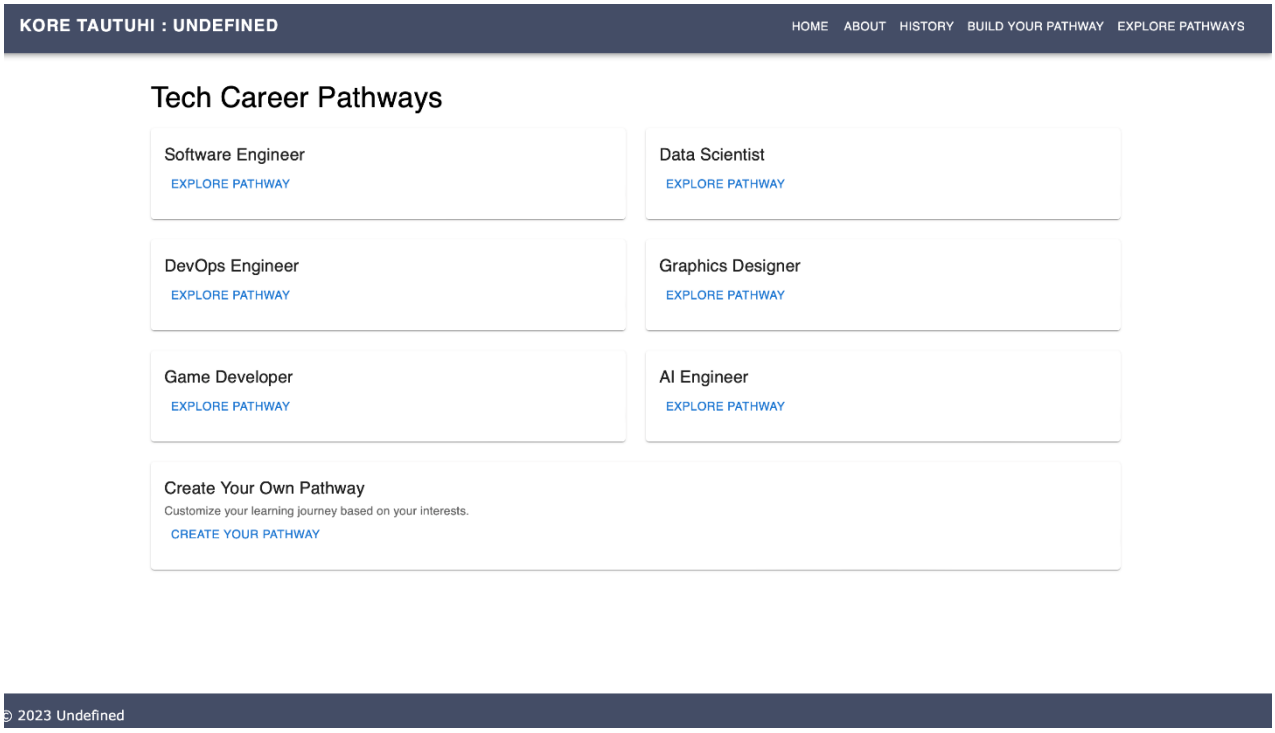
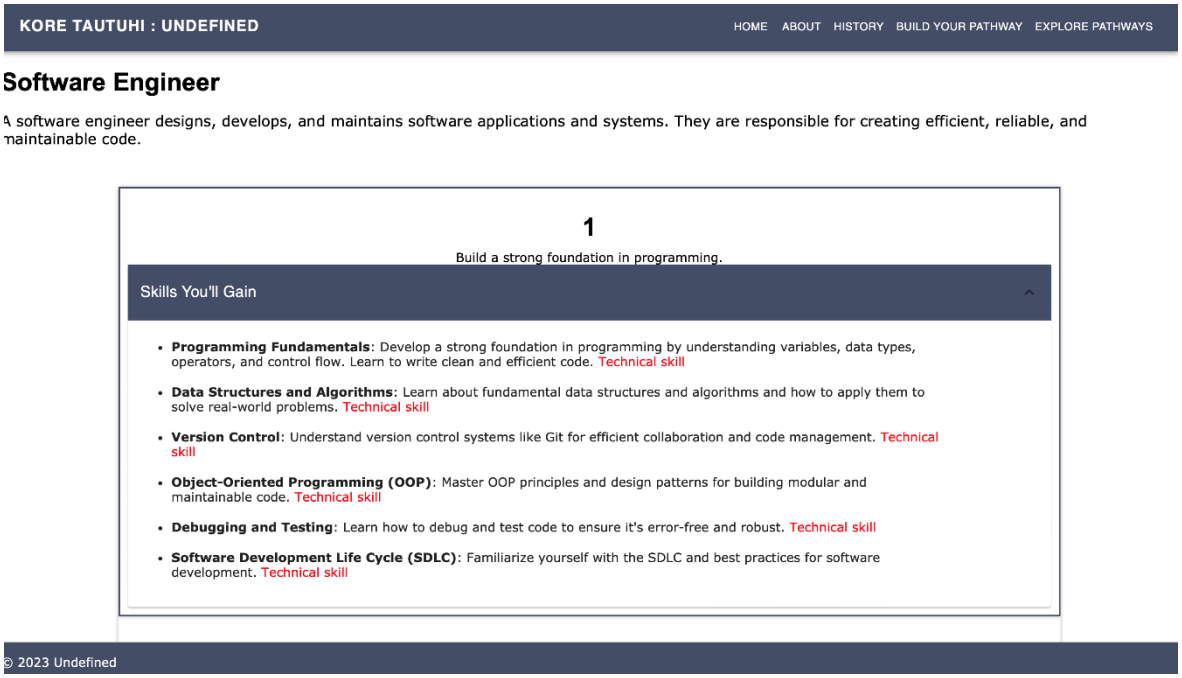
Explore pre-made pathways







Hosting and Deployment

The site can be viewed at undefined.co.nz

Its hosted using Kubernetes

The Kubernetes cluster contains.

- Ingress nginx controller
- Deployment via docker container image

Nginx is the web server that is responsible for displaying the files in the docker image.

The ingress controller handles incoming traffic from the domain name which is linked to my dynamic public Ip address through DNS server handlers.

Kubernetes configuration

deployment.yaml

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: undefined-deployment
spec:
  replicas: 1
  selector:
    matchLabels:
      app: undefined
  template:
    metadata:
      labels:
        app: undefined
    spec:
      containers:
        - name: undefined-container
          image: abdabthecreator/undefined:latest
          ports:
            - containerPort: 80
```

ingress.yaml

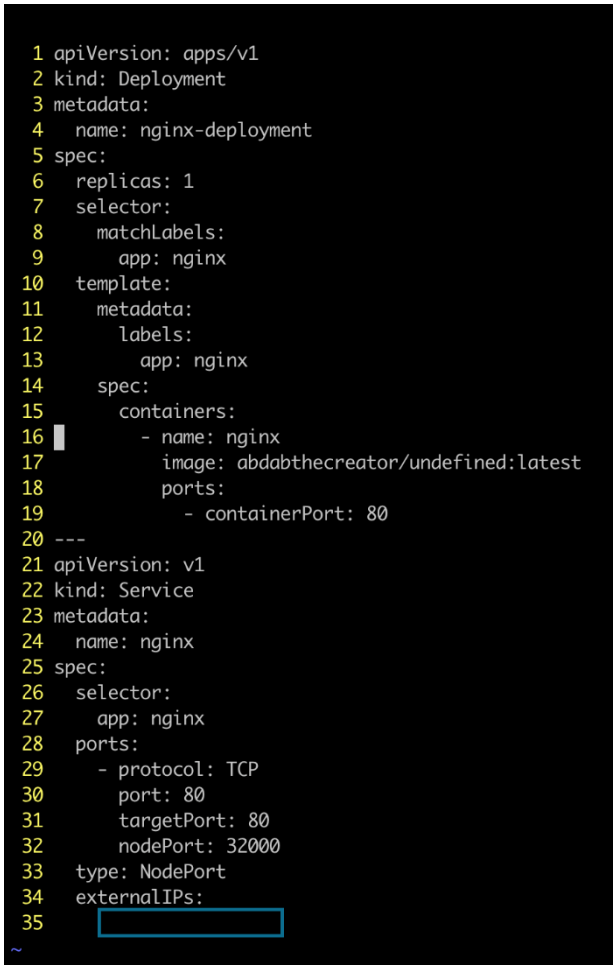
```yaml
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: undefined-ingress
 # annotations:
    # add an annotation indicating the issuer to use.
  #  cert-manager.io/cluster-issuer: letsencrypt-staging
   # kubernetes.io/ingress.class:z: "nginx"
spec:
#  tls: # < placing a host in the TLS config will determine what ends up in the cert's subjectAltNames
 #   - hosts:
  #    - www.undefined.co.nz
   #   - undefined.co.nz
    #  secretName:                  # < cert-manager will store the created certificate in this secret.
  rules:
    - host: www.undefined.co.nz
      http:
        paths:
          - path: /
            pathType: Prefix
            backend:
              service:
                name: undefined-service
                port:
                  number: 8080
    - host: undefined.co.nz
      http:
        paths:
          - path: /
            pathType: Prefix
            backend:
              service:
                name: undefined-service
                port:
                  number: 8080

```

service.yaml

```
 1 apiVersion: v1
 2 kind: Service
 3 metadata:
 4   name: undefined-service
 5 spec:
 6   selector:
 7     app: undefined
 8   ports:
 9     - protocol: TCP
10       port: 8080
11       targetPort: 80
12   type: ClusterIP
~
```

nginx.yaml



```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 1
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: abdabthecreator/undefined:latest
          ports:
            - containerPort: 80
---
apiVersion: v1
kind: Service
metadata:
  name: nginx
spec:
  selector:
    app: nginx
  ports:
    - protocol: TCP
      port: 80
      targetPort: 80
      nodePort: 32000
  type: NodePort
  externalIPs:
    
~
```