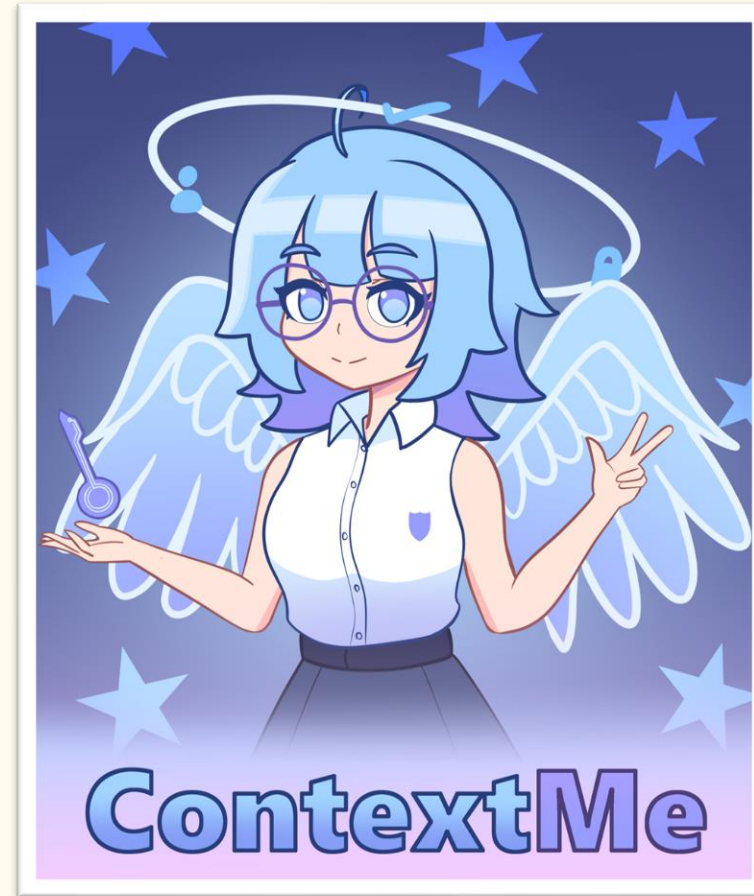# Identity and profile management API: ContextMe

Final Project Pitch
Student No: **230668566**

Agenda of Project Pitch

Today I would be touching on the following items:

- I would be discussing the template used in my project.

- I would be also discussing my motivation of the project that I would be doing.

- I would also provide 2 similar projects and evaluate them and share what is done by the projects and what is currently lacking in them that I wish to address using my project.

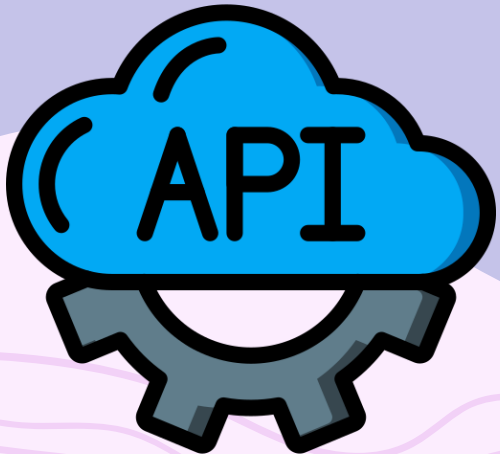- Possible Technologies that would be used in my Project.

1 Template Used & Motivations for Project

I have chosen— **Template 7.1**

Advanced Web Design Project Idea 1: Identity and profile management API.
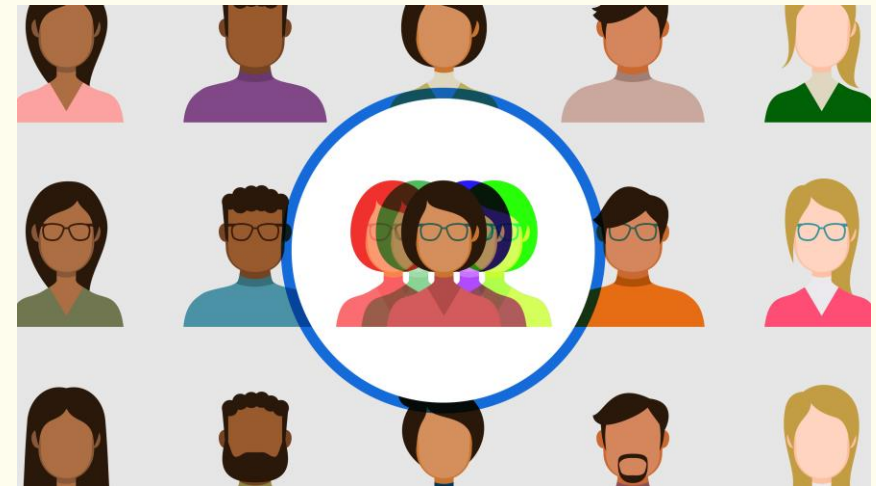
Project Idea

Motivation of the Project

In today's hyperconnected world, constantly shifting between identities can be exhausting, disorienting, and even damaging to one's well-being. Despite this complexity, most digital platforms still operate on a one-size-fits-all model — asking users to present a single, unified identity.

This oversimplification fails to reflect the fluid, multifaceted nature of who people truly are. As mentioned in the research done by Arfini et al. (2021), individuals naturally adapt different self-images to navigate the expectations and judgments of diverse social spheres.

However, this is hard in online spaces for three reasons:

- **Surveillance and Social Norms**
The fear of surveillance—whether from employers, authorities, or even relatives—leads to self-censorship and difficulty expressing alternate identities (e.g., gender, religion, or political views). This is worsened by unethical data practices and lack of legislation, which can cause personal data to be leaked or misconstrued (McKoy et al., 2024). Thus, it's crucial to share only appropriate and context-specific information to protect one's identity.

Project Idea (Continued)

Motivation of the Project

- **Cultural Expectations and Role Conflict**

In **collectivist cultures** like Singapore, youth are caught between **traditional values** (e.g., filial piety, academic success) and **globalized ideals** of self-expression and individuality. This creates a constant push-and-pull between **"who I should be"** and **"who I want to be."**

As a result, Singaporean youth often face **role conflict**, managing **multiple online personas**—one for family and professionals, another for personal or alternative expressions. A 2022 study by **Lianhe Zaobao** and the **Institute of Policy Studies** found that **59% of Singaporean Gen Zs** feel they can't fully express their true selves online.

This **identity fragmentation** leads to **emotional dissonance** and **anxiety**, making it difficult to navigate the digital world and manage multiple identities effectively.

Motivation of the Project

- **Lack of tool to manage multiple Identities**

In today's digital age, individuals—particularly **young adults**—are often forced to navigate multiple **digital personas**. Each persona may serve a different function, from professional representations on LinkedIn to personal expressions on Instagram, or even anonymous, experimental identities on platforms like Reddit or TikTok. However, there is **no central tool or system** to effectively manage these fragmented identities.

People need to adapt to the unique expectations of each platform. For instance, LinkedIn demands a polished professional image, while Instagram may allow more casual or creative self-expression. But these platforms don't **synchronize** with one another. As a result, **individuals must manually manage separate accounts**, leading to confusion, time management issues, and even risk of identity overlap (e.g., personal posts becoming accessible to professional networks).
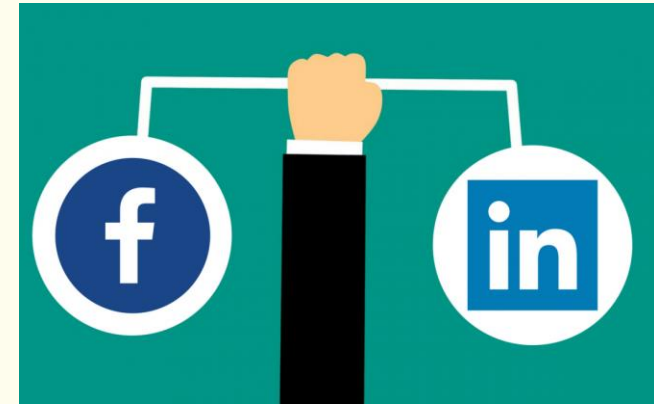
Hence, we come this point: How can we create a flexible, secure and user-friendly identity and online profile management system for young adults?

Project Idea (Continued)

- Aim: To develop a secure, context-aware, persona-based identity and profile management API for young adults to manage different online identities.

Objectives:
- Develop a system that intelligently adapts to different situations by providing users with the appropriate version of their identity based on context. This ensures that the user's identity is accurately represented according to the specific environment or requirement;

- Evaluation of current tools and methods that users employ to manage profiles and difficulties experienced when using such tools;

- Design an API architecture that adheres to the General Data Protection Regulation (GDPR).

2 Similar applications or systems
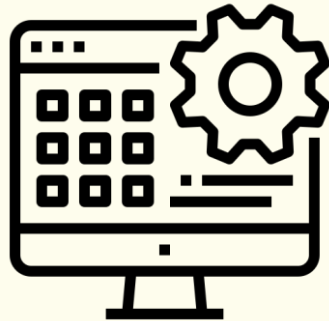
Similar applications or systems

Traditional Solution: Writing Down the Information

- Writing down passwords to online accounts in both physical and digital form.

Weakness:
- Shoulder surfing attacks when logging into sites (Gerber et. al., 2023)

- Changes to one profile (eg. phone) does not propagate to others.

- May lead to leaking information to others inner threat agents (such as co-workers, or rivals)

Google: John@gmail.com
pw: oA29NiNv123a

Similar applications or systems

Google's G Suite (formerly Google Apps for Work)

- Google offers users the ability to have multiple **email aliases** (e.g., firstname.lastname@example.com, firstname@example.com) within the same account.

Weaknesses

- While this offers flexibility in professional settings, **it is still constrained to email addresses** and lacks broader application in other areas such as profiles across apps or platforms.

- Despite having multiple email aliases, everything routes to a single account with shared settings, contacts, and data. There's no true separation b
your professional and personal contexts.

Discord Server Profiles

Discord's *Server Profiles* feature allows users to customize their display name, profile picture, and pronouns for each server they are part of. This supports identity flexibility by enabling individuals to present themselves differently across various communities, such as gaming, work, or hobby groups.

Weakness

- However, a key weakness of this function is its **limited control over deeper identity attributes**—users can only adjust a few surface-level elements. Elements such as Bio, Banner Images cannot be customized based on servers.
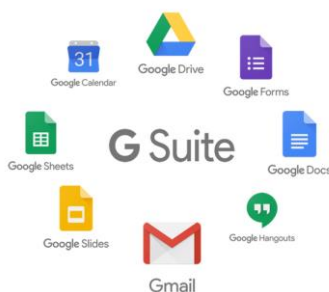
Similar applications or systems

Facebook's Preferred Name and Pronouns Feature

- Social platforms like Facebook have made strides in allowing users to input **preferred names** and **pronouns**. However, these features are often limited in scope and fail to address context. For example, Facebook allows users to display a "nickname" or "alternative name," but the user is still forced to maintain a primary, formal identity.

Weaknesses

- The flexibility is minimal, and these features often don't extend across the entire platform experience, leaving certain sections (like messaging or professional interactions) still tied to the legal name. This limitation is significant, especially for marginalized groups like transgender or non-binary individuals, who might require a different name or pronoun depending on the context.
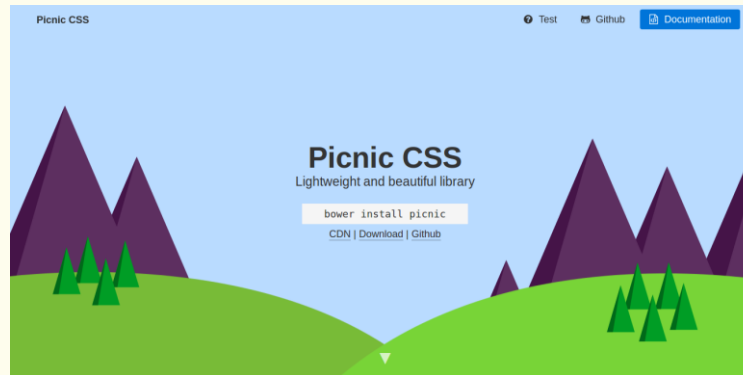
3 Possible Technologies Used

Possible Technologies to implement

In my Project, I would like to use the following Technologies:

- Mainly would use the **Django** and its related RESTful API Framework, **Django REST** for the main API Implementation.

- As for the Front-End Application, CSS Libraries such as **Picnic CSS** and **Bootstrap**!

- Front-end Framework would be using **plain Vanilla HTML framework.**

Possible Technologies to implement (continued)

In my Project, I would like to use the following Technologies:

- Leaky Bucket Algorithm

The Leaky Bucket algorithm is a rate-limiting strategy that helps manage the flow of incoming HTTP requests in a Django application. It works by visualizing a bucket that leaks water at a steady rate—each request is like a drop of water added to the bucket. If too many requests arrive in a short span and the bucket overflows, the system rejects excess requests. The Leaky Bucket algorithm can be implemented as middleware or a custom decorator to rate-limit requests per user, to smoothen out traffic.

And many more technologies....!

4 Key Features In my Prototype

Key Features

- **Flexibility**

Users can manage identities based on their needs.
(personal, professional, etc.)

- **Security**

Application is protected with various measures.