

IT5007

Solution Architecture



Assignment:	Solution Architecture
Group:	Team 13
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1. Problem statement

Pain Point:

Since the mid 2000s, there has been an increased focus in Singapore on life-long, continual learning. This is predicted to continue in the priorities of the next-generation of Singaporean leaders, with Lawrence Wong in May 2023 recently [stating that](#) “Lifelong learning a ‘key pillar’ of Forward S’pore exercise to refresh compact with workers”.

This is a good initiative, as jobs are expected to change and evolve over time, making existing roles obsolete with new technologies. Major initiatives like SkillsFuture have been expanded and enhanced to give every person in Singapore a good opportunity to upskill. However, the team believes that courses are not the only way for someone to learn new skills. **Each learner has the power to share their knowledge, and in turn, learn from their peers as well.**

This should not be difficult, after all, Carousell enables peers to buy and sell used items from each other. Is the sharing of skills that different? The evolution of digital platforms has democratized learning, offering myriad ways to acquire new skills. However, there’s a void in the digital realm: a space exclusively devoted to peer-to-peer skill exchange.

Solution:

SkillSync is our endeavor to bridge this gap. It’s not just a platform, but a community where users come together to share and seek skills. Unlike other educational platforms, SkillSync focuses on personal connections, allowing users to forge their own learning partnerships based on their unique requirements.

2. Detailed Functions

Admin Functions

1. Skill Management:
 - a. View a list of all skills.
 - b. View details of a skill, including picture, name, and description.
 - c. Edit existing skills.
 - d. Delete skills.
2. User Management:
 - a. View a list of all users.
 - b. View user profiles.
 - c. Edit user profiles, including username, password, gender, age, avatar picture, and neighborhood.
 - d. Reset user passwords.
 - e. Delete user accounts.
3. Verify user certifications.

Normal User Functions

1. Authentication:
 - a. User registration and login.
 - b. User logout functionality.
2. User Profile:
 - a. View and edit user profiles.
 - b. Profile information includes username, password, gender, age, avatar picture, neighborhood (captured by Postal Code), and skills.
 - c. Users can self-rate their proficiency in individual skills.
 - d. Upload certificates (if available).
 - e. Specify skills they want to learn.
 - f. View and edit their ratings.
 - g. Track successful SkillSync matches.
 - h. View and submit reviews.
3. User Discovery:
 - a. View a list of all users.
 - b. Filter users by location and skills to share.
 - c. Search for users by username.
 - d. Sort users based on various metrics.
 - e. View recommended users based on location and skills.
4. Skill Discovery:
 - a. View a list of all skills.
 - b. Search for skills by name.
 - c. View details of a skill, including skill profile, users with the skill, courses relevant to the skill, and jobs relevant to the skill.
5. Interactions:
 - a. Send invitations to interested users.
 - b. View a list of sent invitations.
 - c. View a list of received invitations.
 - d. Accept or reject users' invitations.
 - e. Initiate and engage in chat conversations with other users.
 - f. Start SkillSync with other users.
 - g. Provide ratings and comments for skill exchanges.

Integration

API Integration:

- a. Integration with SkillsFuture for viewing job or course matches.
- b. Integration with Google Maps API for locating exchange partners for in-person meetups.

3. Wireframes

The following section shows the wireframes our group design in Figma as a prototype.

- Log in page: Users are directed to the login page when entering the website users can
 - enter username and password to login
 - Click sign-up link to register

SkillSync Login/Signup

Welcome to SkillSync!






UserName Enter user name here

Password Enter password here

Log in

[Doesn't have an account? Sign up here](#)

- Register Page: Users are required to enter the following required fields to register for an account, including
 - UserName
 - Password(at least 6 characters)
 - Gender(a dropdown box to select)
 - Age(number less than 120)
 - Avatar
 - Confident Skills(click “+” button to add another skill)
 - Skills interested
 - Neighborhood(enter postal code to be shown on the map)

-  Talents ▾
-  Users ▾
-  Chats ▾
-  Invitations ▾
-  Schedule ▾

Welcome to SkillSync!

Registration

UserName

Password

Gender ▾

Age

Avatar








Confident Skills +

Talents interested +

Neighborhood



- View Profile page: all detailed with reviews are displayed
 - “Edit” button will be displayed when it is user himself
 - “Invite” button will be displayed when it is other user

-  Talents ▾
-  Users ▾
-  Chats ▾
-  Invitations ▾
-  Schedule ▾

Hi Meet David!



Profile

UserName

Gender

Age

Confident Skills

Talents interested

Neighborhood




Rating:


Successful matches:

Reviews

[View All Reviews](#)

 **Andrea** 65

Good Job! But she is too good to teach the basics! And the court needs to book in advance so it is not as flexible.

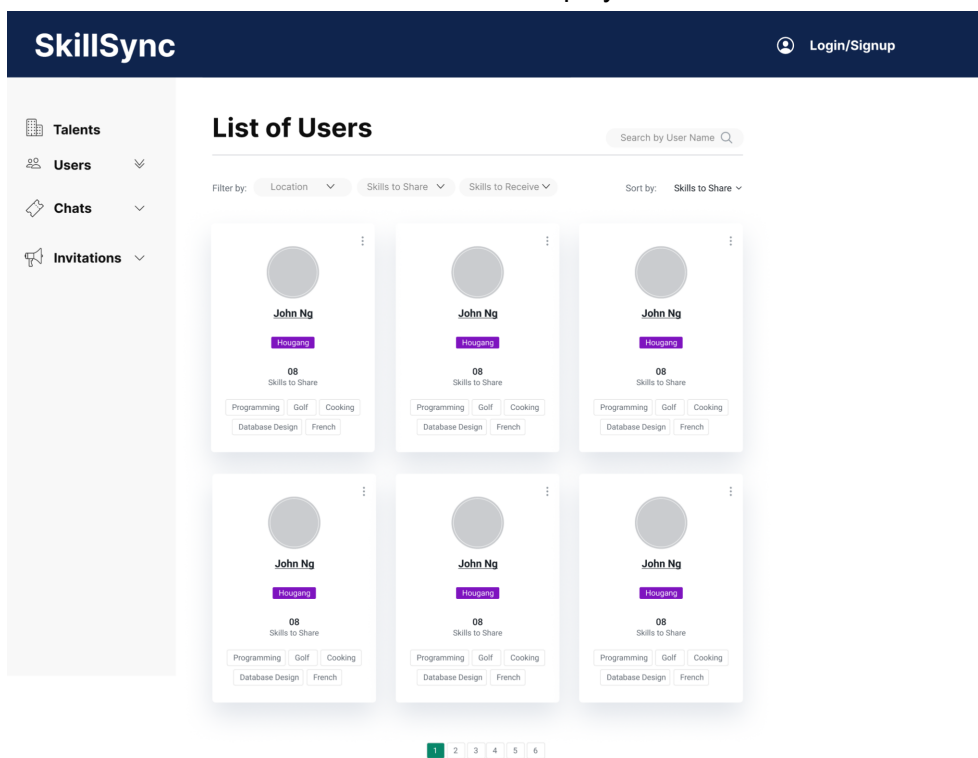
 **Bob** 40%

I learned a lot of basics from him! but he is not available mostly for my java classes. I feel bad!

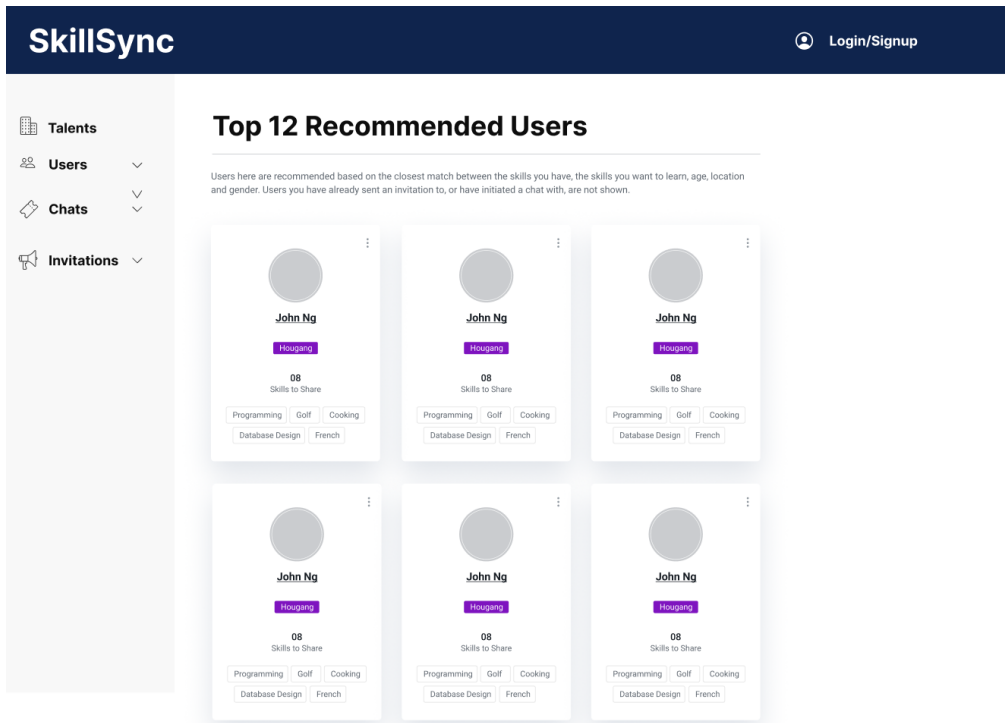
 **Leo** 80%

He is so good at teaching tennis! We always play tennis after my java classes so its a great match.

- View List of Users: With searching, filtering and sorting
 - “Edit” and “Delete” button will be displayed for admin



- View Recommended Users: Matching will be done by backend




- View List of Skills: With searching
 - “Edit” and “Delete” button will be displayed for admin

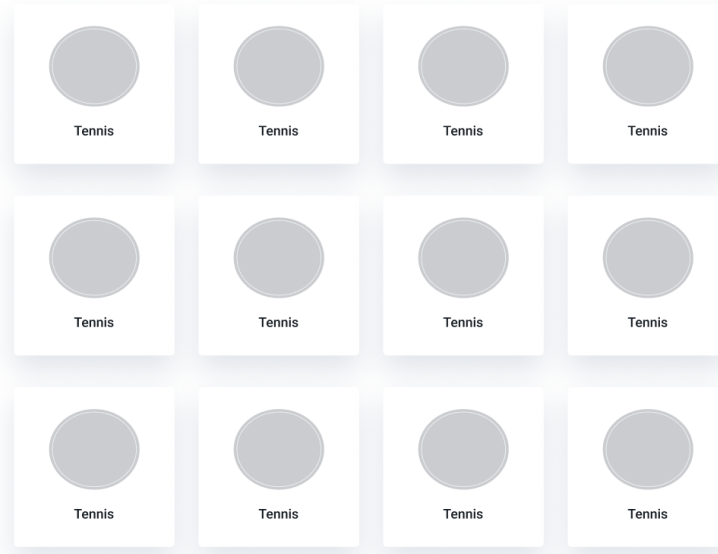
 Talents

 Users 

 Chats 

 Invitations 

Skills



- View Skill Details

Talents

Users

Chats

Invitations



Database Design



Database Design is a critical skill encompassing the methodical creation and management of databases to ensure that they effectively support the applications and services that utilize them. It involves constructing a structured framework to accurately store, manage, and retrieve data.

List of Users with the Skill

John Ng

Hougang

08 Skills to Share

Programming Golf Cooking

Database Design French

John Ng

Hougang

08 Skills to Share

Programming Golf Cooking

Database Design French

John Ng

Hougang

08 Skills to Share

Programming Golf Cooking

Database Design French

Courses to help you learn this skill

External data pulled from SkillsFuture.

Course Name: Database for Dummies

Course Provider: National University of Singapore

With the advent of digitalization of functions in organizations, increasingly more and more digital data are created and stored. Data is now the oil that drives organizational business intelligence for greater value. It is collected, stored, extracted, analysed and reported. Traditionally, database systems have been used to store them for these purposes. With the advancement in database technologies

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
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- View Invitations

-  Talents
-  Users 
-  Chats 
-  Invitations 



Invitations Sent

Invitations that has been accepted, and a chat has already started, will not appear on this page.

	John Ng	Hougang	Start Chat! Withdraw Invite
	John Ng	Hougang	Start Chat! Withdraw Invite
	John Ng	Hougang	Pending Response Withdraw Invite

Invitations Received

Only invitations that have not been accepted will be shown here. Only the sender can initiate a chat with you.

	John Ng	Hougang	Accept Invite Decline Invite
	John Ng	Hougang	Accept Invite Decline Invite

- Chat: Users can chat with the interested user to exchange skills with
 - Block/Unblock User
 - Start/Stop SkillSync
 - Rate User (After SkillSync Start)

- Talents
- Users
- Chats
- Invitations
- Schedule

Messages 12



search Search messages

Elmer Lavery 12m
Haha oh man 🤔

Florencio Dorrance 24m
woohoooo

Alfonzo Schuessler 1m
perfect!



Florencio Dorrance

Online

Start SkillSync

Block



Hi! This is Florencio here.



Yah, that's right!

I can teach you cooking!



aww

omg, this is amazing

woohooooo 🔥

Hi! I'm David! So you want to learn java?



woohooooo



Type a message

