

St. Francis Xavier University
Computer Science Department
CSCI 483/Interactive Programming with Java

Instructor: Prof. Othman Soufan

ShareFx

JSF || HTML || XHTML || MySQL || BootStrap

<https://github.com/NagarjunPrem/Proj-ShareFx>

Project by

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X2019ftr

SHAREFX

Sharing is an act of love towards the whole of humanity that makes a better society. ShareFx is a unique platform for the members of StFx Society to share their knowledge, skills, hobbies, rides and food. This application website acts as an interface between students and other members who are willing to share a resource or a skill. By this platform, this project aims to bring the StFx society closer and develop better human relationships, breaking the cultural and communication barrier.

Motivation & Analysis

The idea for this application comes from my experiences and stay in Antigonish for the past 2 years:

ShareFx Rides

While many of students in this town do own a car, but there are still students in large number who do not own a car. And there are households having more than a car. This is an ideal circumstance for car-pooling. By having more people using one vehicle, carpooling reduces each person's travel costs such as: fuel costs and the stress of driving. Carpooling is also a more environmentally friendly and sustainable way to travel as sharing journeys reduces air pollution, carbon emissions, traffic congestion on the roads, and the need for parking spaces.

ShareFx Hobbies

With the town being densely populated by the university students, each student has his/her special hobbies. Channelising this common hobby into one single platform can be engaging. Some of the examples: Volunteering, community service or charity work, Travel, Hiking and other exercises, Cooking, Gardening, sharing of books amongst people having reading books as a hobby, etc. Members having come interest can share their and ideas and explore it.

ShareFx Knowledge

It would be great if there is a common platform for sharing of knowledge amongst students. For instance, it would be helpful for the school students if the graduate or under-graduate students serve as a Teaching Assistant in which ever subject help is needed. This would also be a great exposure for the graduate or under-grad students. By this, better academic performances can be achieved. Example: online tutoring, research work, blogging, etc

ShareFx Skills

Stfx has always been a pool of skills be it academics, sports or extracurricular activities. Sharing of skills results into better skill development in the Stfx society. Some of the skills that can be shared: Music skills or Musical instrumental skills, Sports skills, Photography and other Art skills,

ShareFx Food

Stfx is a diverse community with students from different parts of the world. Interested foodies can share different cuisines of food amongst themselves. Also, there can be instances where good food getting wasted because of excess in quantity. This application can be used as a platform to eliminate good food wastage or good food give away.

Background - Market Research

Considering the current scenario, there is no such common platform for sharing rides, hobbies, knowledge, or skills at StFx. While there are some Facebook pages for sharing accommodation but there aren't any Facebook pages or groups or platforms for sharing knowledge, skills, or hobbies. Hence, there is a need for this project – 'ShareFx', providing a common platform.

Here are few portals existing:

- Facebook: Antigonish Buy, Sell, Trade, or Giveaway!
<https://www.facebook.com/groups/122821851065771/>
- Facebook: Antigonish Area Buy/Sell/Giveaway
<https://www.facebook.com/groups/1542053809397765/>
- Facebook: StFX Carpool
<https://www.facebook.com/groups/1641800969377119/>
- Facebook: StFX Buy & Sell
<https://www.facebook.com/groups/359116737444250>

As per research, it is found that there are no online portals or social media groups for Sharing Hobbies, Sharing Skills and Sharing Food in our town, Antigonish. 'ShareFx' is first of its kind to implement one common platform for the above listed ideas and also providing functionalities more than what is above listed.

Stakeholders

Stakeholders of a project could be anyone who is in need of the project and implements or makes use of the projects. The general stakeholders are Project Manager, Project Investor, End-users etc. In this project the stake holders it would be:

- Stfx University
 - Stfx Students,
 - Stfx Lecturers,
 - And other Stfx staffs
 - Stfx Alumni
- Residents of the town, Antigonish
- Antigonish Town Visitors

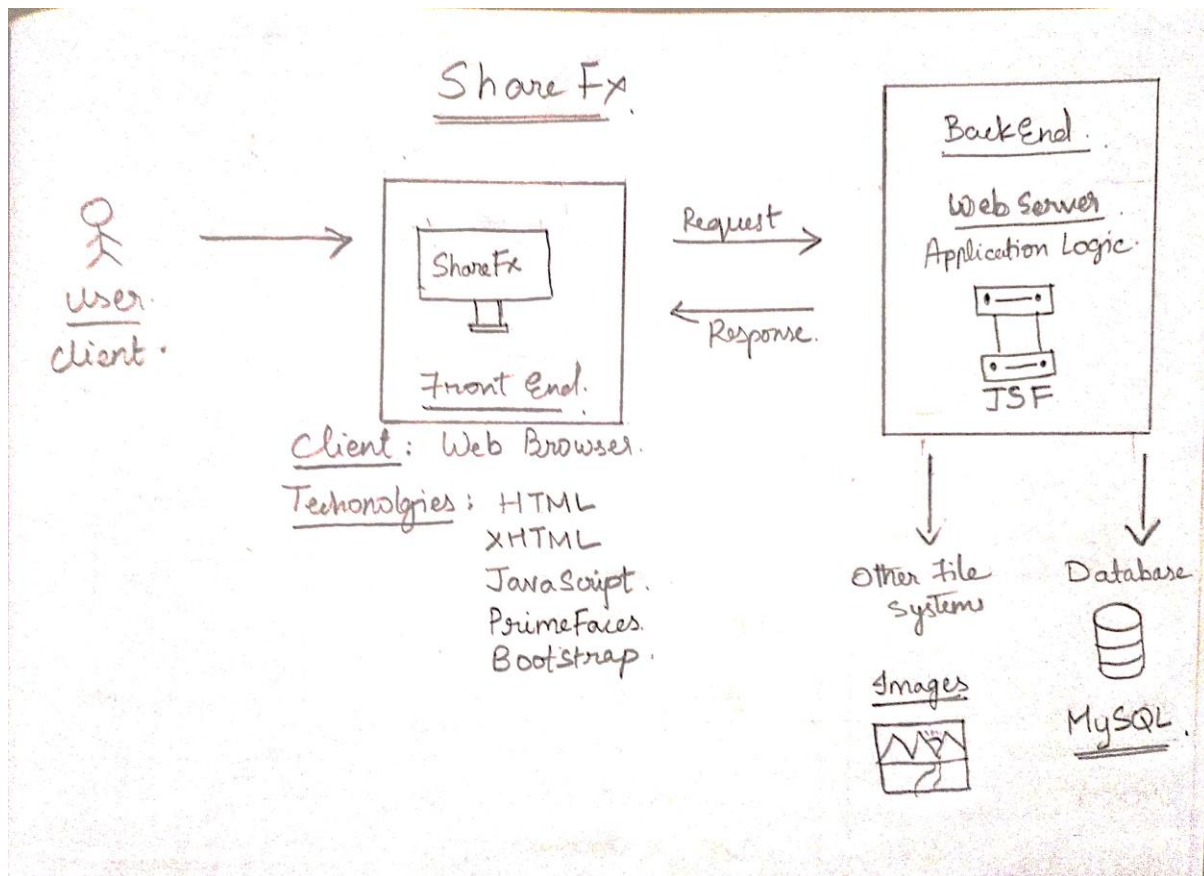
Application Specifications

The proposed application should be able to load and display the entries of the registered users. The application should allow the registered user to post an update and allow other users to comment on the post. Here are few details on the application developed:

Development Platform:

- Operating System: Microsoft Windows 10
- Development Framework: JSF 2.3
- Programming Language: Java
- JDK version: JDK 11
- Java EE Version: Java EE 7 Web
- Server: Glassfish Server 4.1.2
- Database: MySQL Workbench 8.0
- Dependencies:
 - mysql-connector-java 8.0.22
 - primefaces 10.0.0
 - javaee-web-api 7.0
- Integrated Development Environment: Apache Netbeans IDE 12.0
- Build Automation Tool: Apache Maven

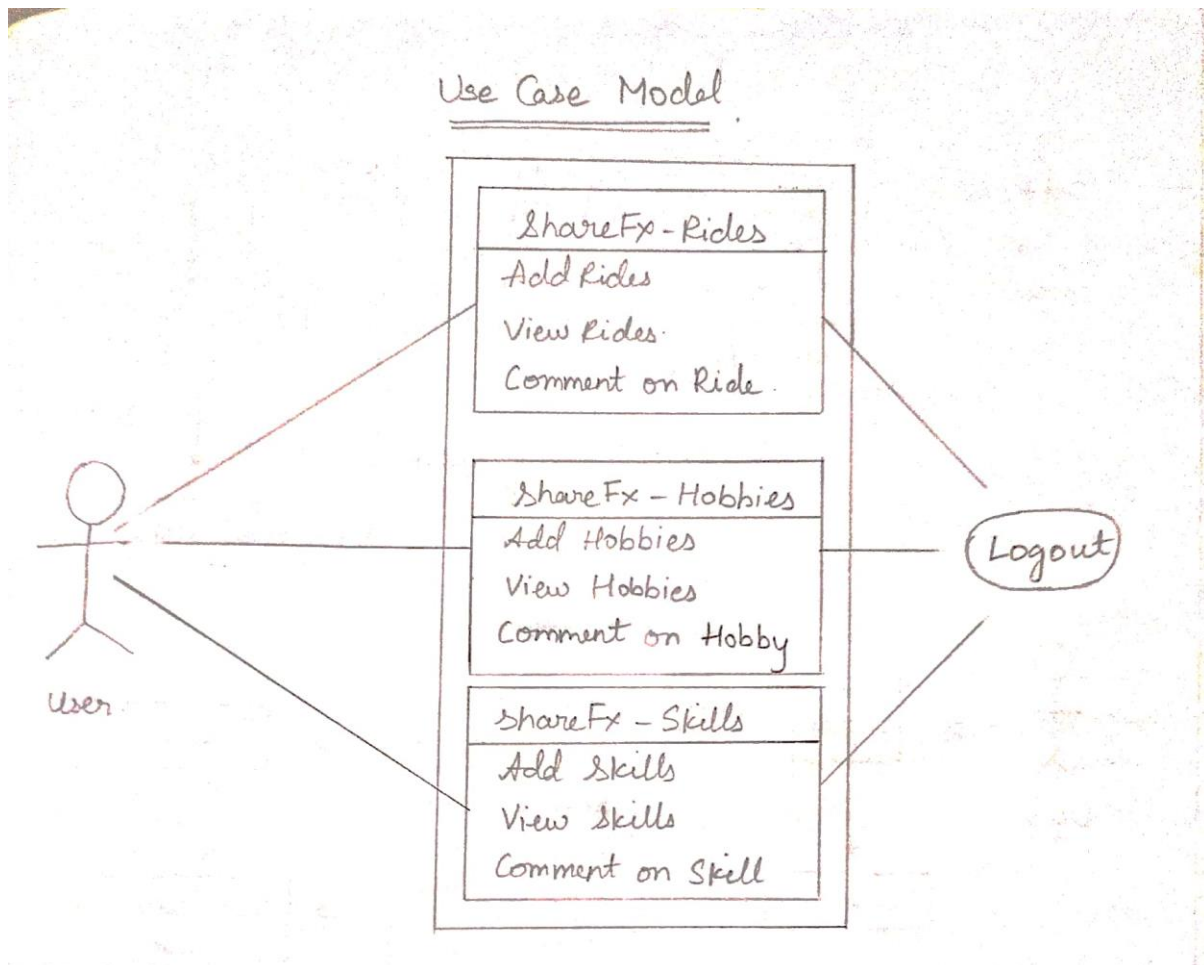
Application Architecture



The interface of this application has been designed with the help of HTML, XHTML, PrimeFaces, Bootstrap. The client-side actions are done on the front-end part. Like viewing a post, adding a post and commenting on a post. The Back-end Application logic is maintained by JSF (JavaServer Faces). MySQL has been used as the database to store and retrieve the posts updated by the users and also the comments of the post.

The application follows the MVC pattern i.e., Model-View-Controller pattern. The Bean Classes handles the request-response flow i.e., Hobby.java, Ride.java etc. This never handles the data logic. The Model part handles the data logic and interacts with the database. In our application – RideBean.java, HobbyBean.java etc. And the View handles the data representation. For security purpose and standard functionality of the application, Session scope has implemented.

Application Use Case



A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. A use case diagram contains four components.

- The boundary, which defines the system of interest in relation to the world around it.
- The actors, usually individuals involved with the system defined according to their roles.
- The use cases, which are the specific roles played by the actors within and around the system.
- The relationships between and among the actors and the use cases.

Use case description

1. **Use Case Name:** ShareFx Rides

Purpose: To display the share of rides, add a Ride post and comment on a Ride post. The user can give a title to the ride, departure location, destination location, ride date

and time, further information on the ride, count of persons can be accompanied and contact details.

Pre-conditions: The user must have logged in and the main window of the application has to be displayed.

Post-conditions: Share of Ride can be posted. Updated post is displayed. And also, users can comment on the post. The user can also log-out from the application.

2. **Use Case Name:** ShareFx Hobbies

Purpose: To display the share of hobbies, add a Hobby post and comment on a Hobby post. The user can give a title to the hobby he/she wishes to share, scheduled date and time, further information on the hobby, location of the person and contact details.

Pre-conditions: The user must have logged in and the main window of the application has to be displayed.

Post-conditions: Share of Hobby can be posted. Updated post is displayed. And also, users can comment on the post. The user can also log-out from the application.

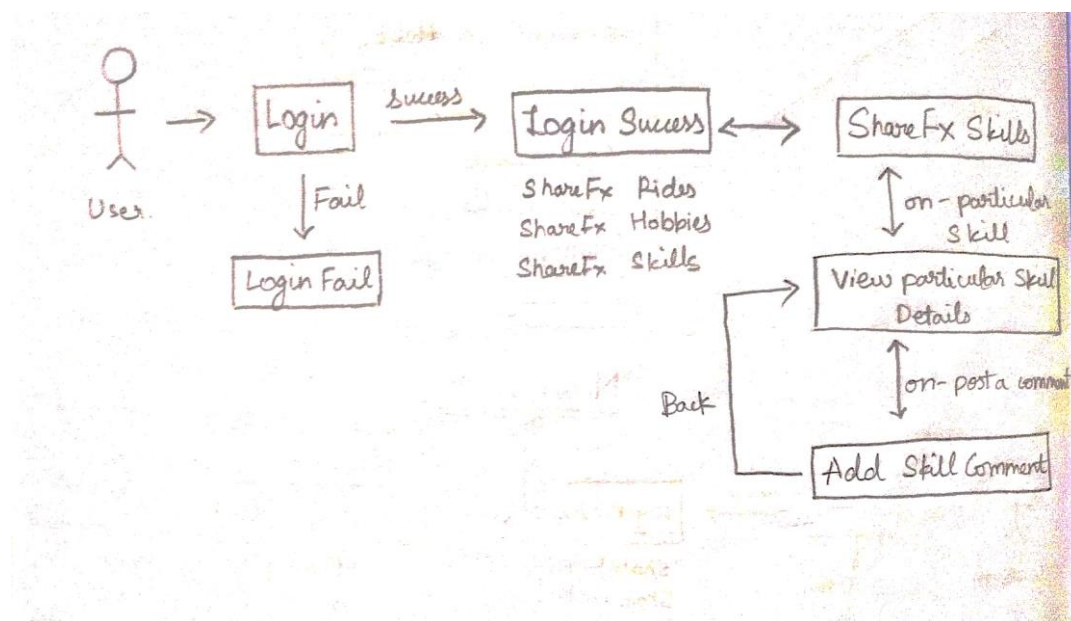
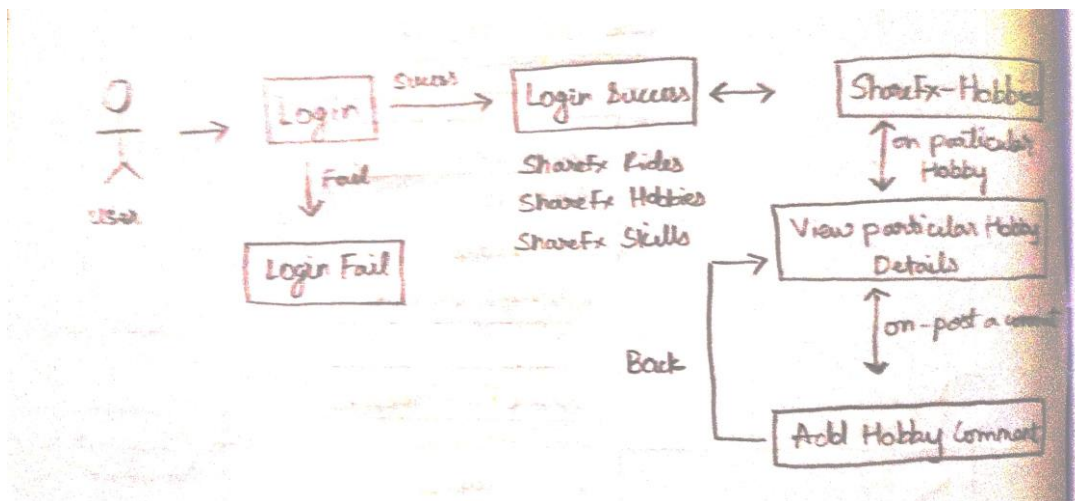
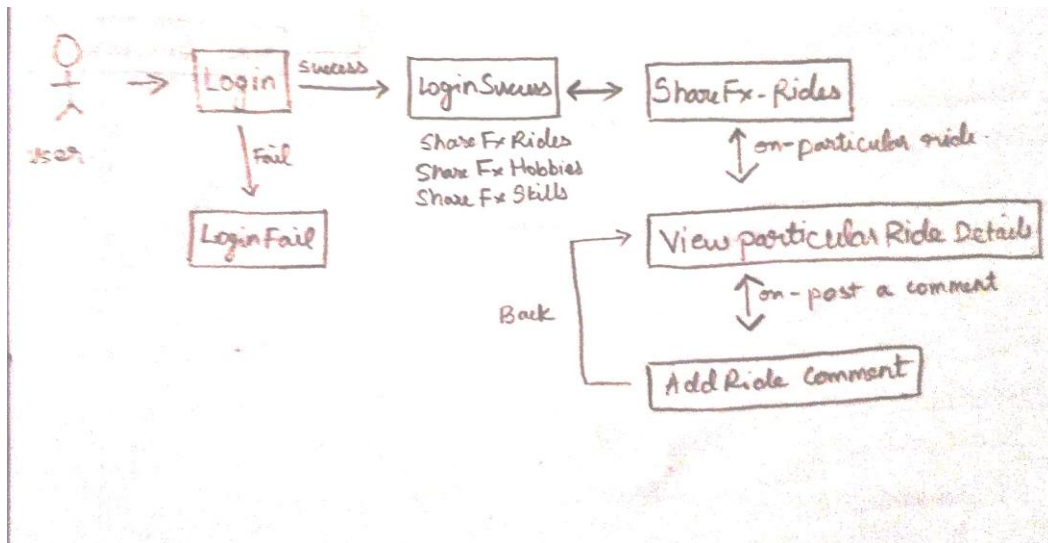
3. **Use Case Name:** ShareFx Skills

Purpose: To display the share of skill, add a Skill post and comment on a Skill post. The user can give a title to the skill he/she wishes to share, planned date and time, further information on the post, location of the person and contact details.

Pre-conditions: The user must have logged in and the main window of the application has to be displayed.

Post-conditions: Skill post can be updated. Updated post is displayed. And also, users can comment on the post. The user can also log-out from the application.

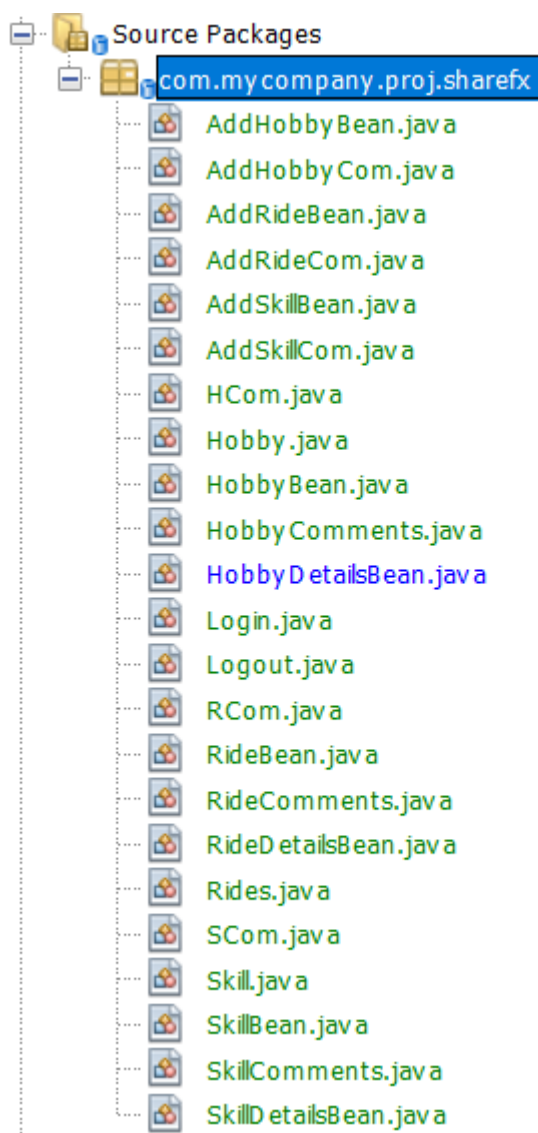
Navigations



Current Progress

So far ShareFx Rides, ShareFx Hobbies, ShareFx Skills have been implemented. The users can make use of these functionalities. ShareFx Food is under construction and would be soon implemented.

Back-end Pages created:



Front-end Pages created:



The Login.java page checks for the validation of the user. If he/she is an authenticated user, the login.xhtml moves forward to the loginSuccess.xhtml. If not, it re-directs the user to loginFail.xhtml page. The loginSuccess.xhtml page lists the various ShareFx services links:

- shareRides.xhtml
- shareSkills.xhtml
- shareHobbies.xhtml
- shareFood.xhtml

The Rides.java provides the blueprint of the functionality of ShareFx rides and also contains necessary members and member functions. The RideDetailsBean.java sets the data for the Rides.java. This RideDetailsBean.java and RideBean.java can be used as a database link and perform database functions. AddRideBean.java is used to add a Ride-post to the ShareFx Rides. AddRideCom.java is used to add comment on a particular Ride.

The Hobby.java provides the blueprint of the functionality of ShareFx Hobbies and also contains necessary members and member functions. The HobbyDetailsBean.java sets the data for the Hobby.java. This HobbyDetailsBean.java and HobbyBean.java can be used as a database link and perform database functions. AddHobbyBean.java is used to add a Hobby-post to the ShareFx Hobbies. AddHobbyCom.java is used to add comment on a particular Hobby.

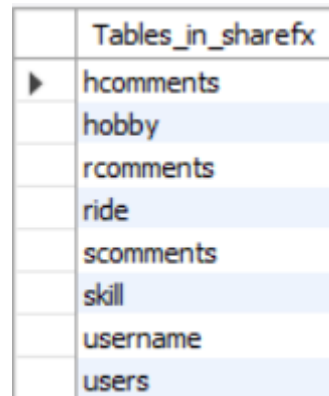
The Skill.java provides the blueprint of the functionality of ShareFx Skills and also contains necessary members and member functions. The SkillDetailsBean.java sets the data for the Skill.java. This SkillDetailsBean.java and SkillBean.java can be used as a database link and perform database functions. AddSkillBean.java is used to add a Skill-post to the ShareFx Skills. AddSkillCom.java is used to add comment on a particular Skill.

Back functionality has also been implemented. This just returns the user to the previous page.

Logout functionality for the user has been implemented in every page. Logout.java handles this function. It just invalidates the Http Session and returns the user to the Login Page.

Database

MySQL Workbench has been used for the application. Initially a database named 'sharefx' has been created and used for this project.



A screenshot of the MySQL Workbench interface showing a list of tables in the 'sharefx' database. The list is titled 'Tables_in_sharefx' and contains the following tables: hcomments, hobby, rcomments, ride, scomments, skill, username, and users. Each table name is on a separate line, and the entire list is enclosed in a light blue border.

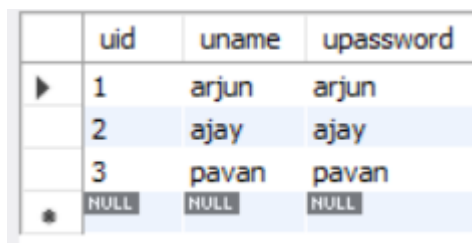
Tables_in_sharefx
hcomments
hobby
rcomments
ride
scomments
skill
username
users

Tables and its functionalities:

- hcomments – used for storing and retrieving comments for a particular ShareFx Hobby post.
- Hobby – used for storing and retrieving ShareFx Hobbies posts.
- rcomments – used for storing and retrieving comments for a particular ShareSx Ride post.
- Ride - used for storing and retrieving ShareFx Rides posts.
- scomments - used for storing and retrieving comments for a particular ShareFx Skill post.
- Skill - used for storing and retrieving ShareFx Skills posts.
- Users – for storing the userid and user password for authentication.
- Username – is to hold the username.

Some of the screenshots of the Database:

Users:



A screenshot of the MySQL Workbench interface showing the 'Users' table. The table has four columns: uid, uname, upassword, and a fourth column that is not explicitly named but contains NULL values. The table contains three rows of data: (1, arjun, arjun), (2, ajay, ajay), and (3, pavan, pavan). The fourth column contains NULL values for all three rows. The table is enclosed in a light blue border.

	uid	uname	upassword	
▶	1	arjun	arjun	
	2	ajay	ajay	
	3	pavan	pavan	
✱	NULL	NULL	NULL	

Schema of skill:

```
109 • create table skill(  
110     uid integer,  
111     sid integer auto_increment,  
112     sname varchar(50),  
113     sdate date,  
114     stime time,  
115     sinfo varchar(999),  
116     slocation varchar(50),  
117     scontact varchar(100),  
118     primary key (sid),  
119     foreign key (uid) references users (uid)  
120 );  
121  
122 • select * from skill;
```

ShareFx Rides Table:

	uid	rid	rname	rdeparture	rdestination	rdate	rtime	rinfo	rcount	rcontact
►	1	1	Halifax Trip	Antigonish	Halifax	2021-04-06	19:30:10	Short visit to Halifax with my friends. Anyone in...	1	Arjun - 9028709777
	2	3	Cape Breton Trip	Halifax	Cape Breton	2021-05-06	09:30:10	Short visit to Cape Breton with my friends. Inte...	3	Ajay - 9028709777
	1	4	To Antigonish	Halifax	Antigonish	2021-06-06	22:10:00	Pit Stop for Dinner- Truro	1	Arjun - 9028709777
	2	5	Looking for a ride	Antigonish	Halifax	2021-07-06	10:00:00	looking for a ride to Halifax Friday! Will pay \$\$	1	Ajay - 9028709777
	2	6	To Antigonish	Cape Breton	Antigonish	2021-07-06	12:00:00	Trip antigonish with friends	2	Arjun - 9028709777
	2	7	To Sydney	Antigonish	Sydney	2021-08-06	13:00:00	Antigonish - Sydney	3	Arjun - 9028709777
	2	8	To Halifax	Sydney	Halifax	2021-10-06	16:00:00	Pit Stop - Antigonish	1	Arjun - 9028709777
	2	9	Dinner at TRuro	Ant	Truro	2021-12-06	18:00:00	Travelling Alone	3	Arjun - 9028709777
	2	10	Breakfast Drive	Sydney	Antigonish	2021-12-13	08:30:00	Interested people can contact	2	Arjun - 9028709777
	1	11	Long drive	Antigonish	Pictou	2021-12-13	11:30:00	Note: I will be driving slow	1	Ajay - 9028709777
	2	12	Bangalore	Kaggadasa...	Shhivaji	2021-07-10	10:00:00	314-A -Bus.. illana Sangu	2	Arjun-9028709777
	2	26	Short Trip with F...	Antigonish	New Glasgow	2021-07-27	13:00:00	Planning to halt for a day at New Glasgow. Trav...	1	Arjun-9028709777

Skill Comments Table:

	uid	username	sid	comment
►	2	Ajay	1	Interested! Can I join?
	1	Arjun	2	Very helpful. Thank you. Have messaged you
	2	Ajay	3	Just adding to the above Post.. It would be on ...
	1	Arjun	3	Oh Cool! Have messaged you
	2	Ajay	4	Oh That's Great! I am interested.

Application Testing

So, to test the application we are going to add a post and add a comment on a post to check the behavioural of the application:

Login Testing

ShareFx

User name: arjun

Password: *****

Login

Stfx-ShareFx

Sharing is an act of love towards the whole of humanity that makes a better society. ShareFx is a unique platform for the members of StfX Society to share their knowledge, skills, hobbies, rides and food. This application website acts as an interface between students and other members who are willing to share a resource or a skill. Don't miss this great time to become SIFX members and make better home connections, building the school community in a better way.

On successful login

ShareFx Rides
Share free rides with Stfx
Find a carpool buddy for your daily commute at no cost
[Explore ShareFx Rides](#)

ShareFx Hobbies
Share your Hobbies with Stfx
Meet people who share your hobbies and discover plans and events at our Stfx
[Explore ShareFx Hobbies](#)

ShareFx Skills
Share your Skills and Knowledge with Stfx
Collaborate and build collective knowledge for a better tomorrow
[Explore ShareFx Skills](#)

ShareFx Food
Share Delicious Food with Stfx
Taste different cuisines and eliminate good food wastage
[Explore ShareFx Food](#)

ShareFx Skills

ShareFx Skills - ShareFx - Logged as User: User ID

arjun

1

Back

Logout

Share Skills

New Post

Skill ID	Post Skill	Scheduled Date	Details	
1	Guitarist	2021-04-18	Hey! I am cool Guitarist! Open to teach kids in Sfx	View more Details
2	Computer Programming	2021-04-18	I have done my Masters in Computer Science and have 6 years of work experience in Java Programming. Open to coach under-grad students at Sfx	View more Details
3	Free Style Dance	2021-04-18	Lets make use of this lock down. Interested to train kids on Free Style Dance over Zoom	View more Details
4	10th grade Math	2021-04-18	Available to teach Math to 10th grade Students	View more Details

Adding a post

Post a Skill

Please fill the below Skill Details:

Skill Title :

Football coaching

Scheduled Date (YYYY/MM/DD):

2021/04/18

Scheduled Time (HH:MM:SS):

10:00:00

Further Information :

Hello Folks! I have been a part of the Sfx Football team for the past 2 years and considered to be one of the key players in the team. Interested to train interested kids. As this is out of my passion, I do not charge for this. Interested folks can contact me.

Location :

80 Brookland Street

Contact Person:

Arjun-9028709777

Post

Post a Skill

Please fill the below Skill Details:

Skill Title :

Football coaching

Scheduled Date (YYYY/MM/DD):

2021/04/18

Scheduled Time (HH:MM:SS):

10:00:00

Further Information :

Hello Folks! I have been a part of the Sfx Football team for the past 2 years and considered to be one of the key players in the team. Interested to train interested kids. As this is out of my passion, I do not charge for this. Interested folks can contact me.

Location :

80 Brookland Street

Contact Person:

Arjun-9028709777

Post

Message from webpage

Posted! Go Back to View

OK

Skill Posted

Share Skills

New Post

Skill ID	Post Skill	Scheduled Date	Details	
1	Guitarist	2021-04-18	Hey! I am cool Guitarist! Open to teach kids in Stfx	View more Details
2	Computer Programming	2021-04-18	I have done my Masters in Computer Science and have 6 years of work experience in Java Programming. Open to coach undergrad students at Stfx	View more Details
3	Free Style Dance	2021-04-18	Lets make use of this lock down. Interested to train kids on Free Style Dance over Zoom	View more Details
4	10th grade Math	2021-04-18	Available to teach Math to 10th grade Students	View more Details
5	<u>Football coaching</u>	2021-04-18	Hello Folks! I have been a part of the Stfx Football team for the past 2 years and considered to be one of the key players in the team. Interested to train interested kids. As this is out of my passion, I do not charge for this. Interested folks can contact me.	View more Details

We can see that the Skill which the user likes to share has been posted.

Posted Skill Details

Skill Details

Post Title	Scheduled Date (YYYY/MM/DD)	Details	Location	Contact Person
Football coaching	2021-04-18	Hello Folks! I have been a part of the Stfx Football team for the past 2 years and considered to be one of the key players in the team. Interested to train interested kids. As this is out of my passion, I do not charge for this. Interested folks can contact me.	80 Brookland Street	Arjun-9028709777

Comments

User Id:	User Name:	Comments

Post a Comment

Now Let's add comment to the post

Add Comment

Enter your name:


Enter your Comments:

Add Comment

Enter your name:

Enter your Comments:

Message from webpage

 Comment Posted! Go Back to View

Checking if the comment has been posted

Post Title	Scheduled Date (YYYY/MM/DD)	Details	Location	Contact Person
Football coaching	2021-04-18	Hello Folks! I have been a part of the Stfx Football team for the past 2 years and considered to be one of the key players in the team. Interested to train interested kids. As this is out of my passion, I do not charge for this. Interested folks can contact me.	80 Brookland Street	Arjun- 9028709777

Comments

User Id:	User Name:	Comments
1	Arjun	Adding to the above post.. This would be on the weekends

We can see that the comment has been posted successfully

Conclusion

As explained above in the testing part, so similarly the users can post ShareFx Ride and view it and also can post ShareFx Hobbies and can view it. Also, the users can comment on a particular post. ShareFx Food functionality has not been added to the application as it is still under construction. Usage of technology JSF, which is the core of this subject CSCI -483, made it easier to build the project. Adding to it, Primefaces helped immensely in the UI of the application. Using Database further standardised the application.

This project gave me the idea on how to build a JSF web application from scratch and utilising maven.

Challenges faced:

- Database connectivity was a real challenge I faced in the initial faces.
- Conceptualising the idea and transforming it into members, member functions and class was another challenge.
- Session Maintenance and Session mapping was initially little hard to understand and implement.

Overall experience working on this application gave me immense knowledge and understanding of the concepts. Covering from the Back-end, Front-end and database, it was indeed a Full-Stack Web development experience.

This application would be of utmost use mainly to the Stfx society (mainly to the students) as the functionalities provided by the application is appealing to the youngsters, as this is first of its kind. Also considering the population and geographical conditions of Stfx Society and Antigonish, this would definitely be a successful venture.

Thus, ShareFx -providing the functionality of sharing resources in our StFx society and making it a better tomorrow.

Some common Questions

- **Who are the end users of this ShareFx?**

The end users are the Stfx students and other members of the Stfx society who would make use of the services provided in this project

- **What is the functionality of ShareFx?**

This application acts as an interface between the members who are interested in sharing the resource and the member who utilises the service.

- **How to contact the person who is interested in sharing a resource?**

A comment box would be provided for each post. The users can comment if they are interested. The contact information would also be displayed with the post.

Limitations

- The users cannot edit their post or comment.
- The users cannot delete their post or comment.
- ShareFx Food is still under construction
- Register new user – functionality has not been implemented.
- UI could be better in terms of handling errors and exceptions. Also, could have provided better UI for selecting date and time.

Future Plans

- Implementation of ShareFx Food
- Implementation of Database - MongoDB
- Implementation of comment box on posts with better UI
- Allowing users to upload pictures and videos
- Realtime Location Features
- Make it more Interactive and Realtime and provide Messaging Features
- Build better and attractive UI
- Make ShareFx- MobileApp
- Make it a Social Media kind application, exclusively for Stfx Society

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- JSF programming <https://www.youtube.com/watch?v=TifG-hPO8IU&list=PLEAQNNR8IIB4S8nNUIS0ArfgU1nXlhdRu>
- Database connectivity - <https://www.youtube.com/watch?v=7QpAVtNmZB0&t=1388s>
- JSF MySQL connectivity - <https://www.youtube.com/watch?v=tql4COiN5T0>
- BootStrap - <https://www.youtube.com/watch?v=cU6Vu0vzpLc&t=336s>

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