



BIRLA VISHVAKARMA MAHAVIDYALAYA
ENGINEERING COLLEGE
[An Autonomous Institution]

A
Project Report
On
Tiffin Service Web Application

Under the course of
DESIGN ENGINEERING -3CP08
B. E., Semester – VI
(Computer Engineering)

Submitted by:

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Prof. Kirti J Sharma
Prof. Mosin I Hasan

Academic year
(2020-2021)

CERTIFICATE

This is to certify that the students namely, **Ms. Zarana Solanki (180070107054), Ms. Kavya Jani (180070107018)** of ***B. E. (Computer Engineering) Semester VI*** have successfully completed the course work and related tasks for the course of **Design Engineering 3CP08** during the academic term ending in the month of May 2021.

Date: _____

Place: _____

Prof. Kirti J Sharma

Head of the Department

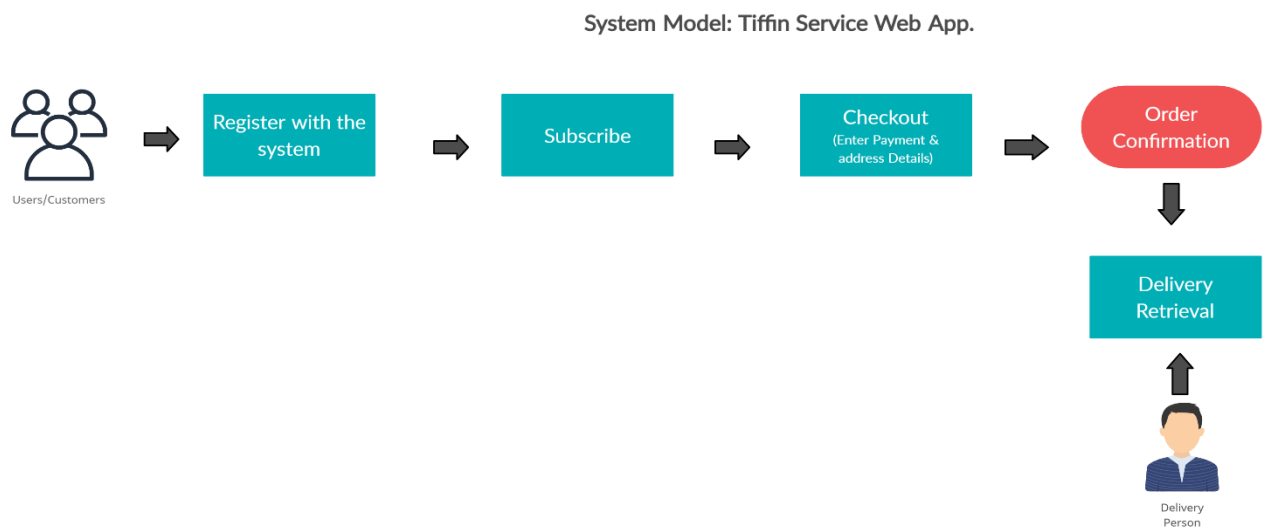
Prof. Mosin I Hasan

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Introduction

The Tiffin Service Web Application is a web-based system. Basically, it allows the user to get 'home-made' food delivered to him/her. This product uses easy and manageable interface and hence allowing both the users i.e., customer and delivery person a trouble-free experience.



This project is the need of the hour because of the following reasons:

- In challenging COVID-19 times, people think a lot before ordering food from restaurants or tiffin services and so this app is needed to provide home-made food for people.
- Some people have to take their lunch along-with them when they leave their home for office. Hence, their food becomes cold till lunch time. With this app, you will be able to have fresh and hot food.
- Also, the person would not have to pay for the food but only have to pay for the delivery charges.

Literature Review/ Secondary Research

FOOD DELIVERY APPS CASE STUDY

1. Ghar Ka Dabba

Ghar Ka Dabba is the app to get meal/tiffin that you want at your door. This app delivers the food 'made at their own kitchen'. It is based in Gandhinagar, Gujarat.

How to use:

1. Login to with your mobile number.
2. Add your address.
3. Check today's menu.
4. Choose Dabba/Items quantity to order.
5. Select your preferable delivery time
6. Place order.

Technical Features:

- Login is provided, can be done using Mobile Number(any other authentication is not provided)
- Stores our address(multiple addresses)
- Displays daily menu
- Multiple items can be ordered at a time
- Also provides flexible delivery timings
- Fast delivery
- Schedule order
- Easy checkout options with Cash on delivery
- Does not provide tracking of orders

2. Tiffi-Lo se Tiffin Lo

You can search and order from 'Tiffin services nearby'. Tiffin service will be home delivered.

How to Use?

1. Login.

2. Select tiffin service nearby you.
3. Check today's menu.
4. Choose quantity to order / take subscription.
5. Place order.

Technical Features:

- Login methods used are: Truecaller/Mobile Phone
- Suggests nearby kitchens/vendors
- Provides subscription which can be paused or cancelled
- App interface is easy to use
- Payment options of COD, Card, UPI are available
- Also shows previously ordered items and suggests similar places to order again
- Order tracking is available
- Search and discover top tiffin providers
- Details of the vendors are also provided
- UI is quite simple
- App uses GPS to track our location

3. Zomato

You can get your favorites delivered at your doorstep within minutes from your 'favorite restaurants'.

Zomato is available across India, UAE and Lebanon.

How to use?

1. Login using your mobile number.
2. Add address.
3. Choose restaurant and food from its menu.
4. Choose quantity to order.
5. Place order.
6. Track your order and order status.

Technologies Used:

Zomato runs AWS Cloud & the backend is powered by Varnish, HAPROXY, APACHE/PHP, MEMCACHE, MYSQL, SOLR, Redis, Nodejs, Hypertable.

4. Swiggy Genie

Pick up or deliver anything in your city with Swiggy Genie. Send documents, packages and food items, pick up something you've forgotten, deliver gifts to your loved ones, get medicines delivered from pharmacies, order supplies from a local Kirana, and more. 'Launching soon in all cities.'

Features:

- Send documents, packages etc.
- Send or pick- up food items.
- Order anything from grocery stores as well.

Technical Features:

These are still not known as the app is not yet launched.

5. Khaoji Food and Tiffin Services

Online Tiffin & Catering Services with free delivery from 'Krupa's kitchen tiffin service'. Delivers 6 days from Monday to Saturday to your office or residence within specified time and area of delivery. Delivery time is between 12.30 pm to 2.00 pm.

How to use?

1. Login using your mobile number.
2. Select Punjabi or Gujarati cuisine.
3. Select subscription and quantity.
4. Place order.

ASP .NET CORE MVC TECHNOLOGY

- .NET core was not a new version of the .NET Framework, but it was an entirely new framework created to build Desktop, Web, Cloud and Mobile Applications.
- It is a Cross-Platform and Open-Source framework developed by Microsoft and released under MIT License.
- Same as .NET Core, it was architected modular with minimum overhead, and then other more advanced features can be added as NuGet packages as per application requirement. This results in high performance, require less memory, less deployment size, and easy to maintain.
- The .NET framework is a modular framework, and so it is possible to run two web applications with different versions of .NET on the same server.

.NET – A unified platform



(Reference: <https://devblogs.microsoft.com/dotnet/introducing-net-5/>)

Some components of .NET

- Entity Framework Core- It is an open-source and cross platform version of Entity framework. It serves as Object Relation model(ORM) to connect to the database using the entity model.
- Identity Core- Identity Core is used to implement the form of authentication and roles and permission. It allows us to implements the login and register feature to the application.
- MVC Core- MVC Core is an open-source MVC project under the .NET Core Framework.

PROJECT STRUCTURE OF TSWA IN MVC:-

● ASP.NET CORE PROJECT STRUCTURE

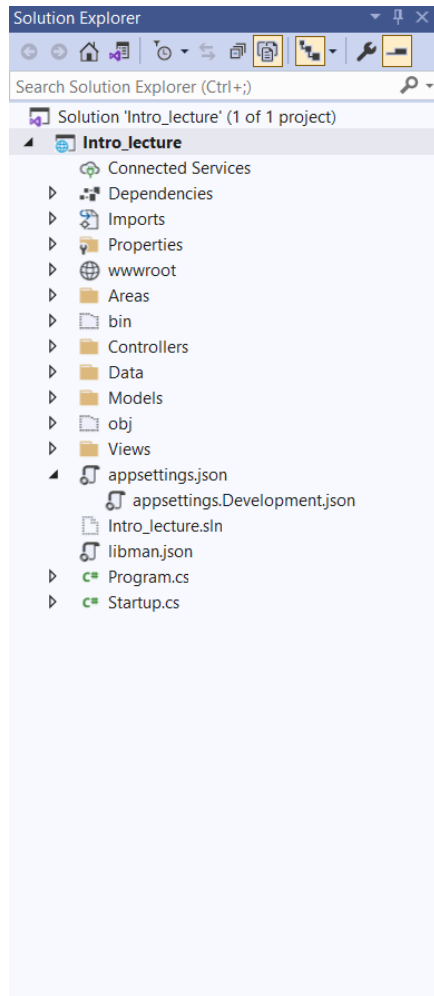
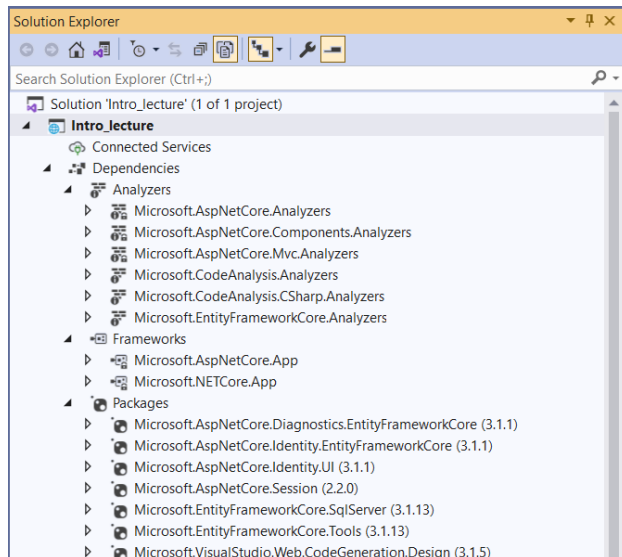


fig: The Solution Explorer of TSWA from Visual Studio

Dependencies

The Dependencies in the ASP.NET Core 3.0 project contain all the installed server-side NuGet packages.

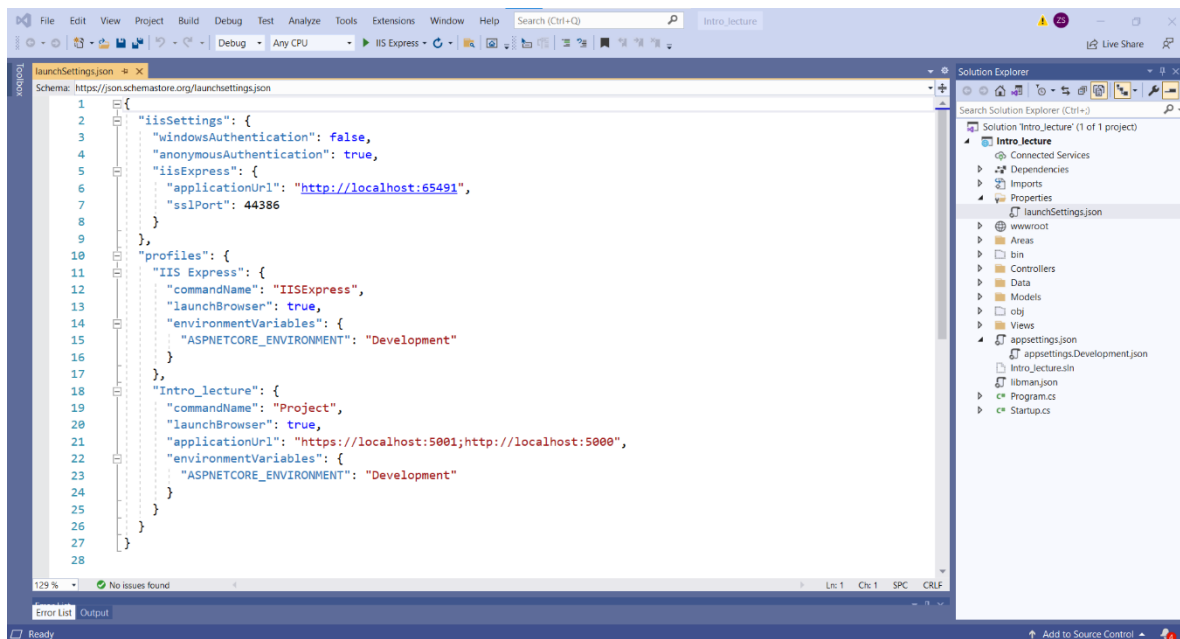


(fig: The Dependencies folder of TSWA project)

Properties

The Properties node includes launchSettings.json file which includes Visual Studio profiles of debug settings. The following is a default launchSettings.json file.

(fig: the launchSettings.json file in Properties folder)



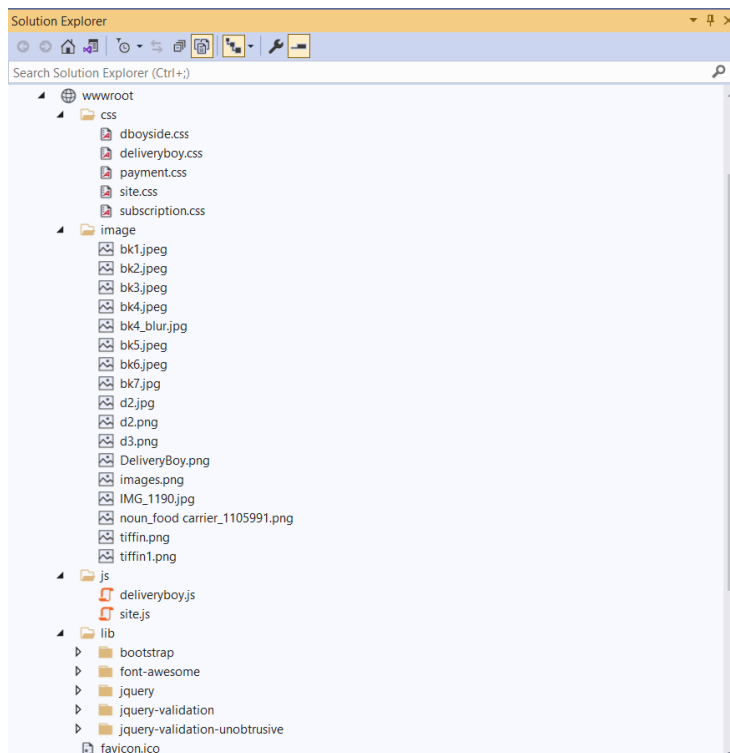
wwwroot Folder

By default, the wwwroot folder in the ASP.NET Core project is treated as a web root folder. Static files can be stored in any folder under the web root and accessed with a relative path to that root.

In the standard ASP.NET application, static files can be served from the root folder of an application or any other folder under it. This has been changed in ASP.NET Core. Now, only those files that are in the web root - wwwroot folder can be served over an http request. All other files are blocked and cannot be served by default.

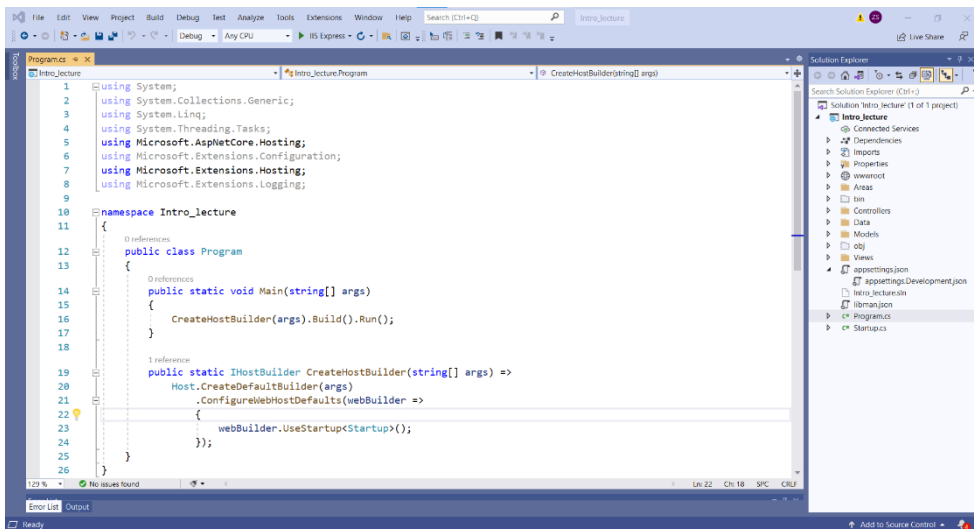
Generally, there should be separate folders for the different types of static files such as JavaScript, CSS, Images, library scripts etc. in the wwwroot folder as shown below.

(fig: the wwwroot folder of TSWA project)



Program.cs

ASP.NET Core web application is actually a console project which starts executing from the entry point public static void Main() in Program class where we can create a host for the web application.



(fig: Program.cs file of the project)

As you can see above, the Main() method calls method expression CreateHostBuilder() to build web host with pre-configured defaults. The CreateHostBuilder expression can also be written as a method that returns IWebHost as shown.

The HostBuilder is a static class which can be used for creating an instance of IWebHost and IWebHostBuilder with pre-configured defaults. The CreateDefaultBuilder() method creates a new instance of WebHostBuilder with pre-configured defaults. Internally, it configures Kestrel, IISIntegration and other configurations. The following is CreateDefaultBuilder() method.

Startup.cs

The name "Startup" is by ASP.NET Core convention. However, we can give any name to the Startup class, just specify it as the generic parameter in the UseStartup<T>() method. For example, to name the Startup class as MyStartup, specify it as .UseStartup<MyStartup>().

```
public Startup(IConfiguration configuration)
{
    Configuration = configuration;
}

2 references
public IConfiguration Configuration { get; }

// This method gets called by the runtime. Use this method to add services to the container.
0 references
public void ConfigureServices(IServiceCollection services)
{
    services.AddDbContext<ApplicationDbContext>(options =>
        options.UseSqlServer(
            Configuration.GetConnectionString("DefaultConnection")));
    services.AddDefaultIdentity<IdentityUser>(options => options.SignIn.RequireConfirmedAccount = true)
        .AddEntityFrameworkStores<ApplicationDbContext>();
    services.AddControllersWithViews();
    services.AddRazorPages();
    services.AddSession();
}
```

(fig: Startup.cs file of the project)

```

public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
{
    if (env.IsDevelopment())
    {
        app.UseDeveloperExceptionPage();
        app.UseDatabaseErrorPage();
    }
    else
    {
        app.UseExceptionHandler("/Home/Error");
        // The default HSTS value is 30 days. You may want to change this for production scenarios, see https://aka.ms/aspnetcore-hsts.
        app.UseHsts();
    }
    app.UseHttpsRedirection();
    app.UseStaticFiles();

    app.UseRouting();

    app.UseAuthentication();
    app.UseAuthorization();
    app.UseSession();

    app.UseEndpoints(endpoints =>
    {
        endpoints.MapControllerRoute(
            name: "default",
            pattern: "{controller=Home}/{action=Index}/{id?}");
        endpoints.MapRazorPages();
    });
}

```

(fig: Startup.cs file-continuation)

As you can see, Startup class includes two public methods: ConfigureServices and Configure.

The Startup class must include a Configure method and can optionally include ConfigureServices method.

ConfigureServices()

The Dependency Injection pattern is used heavily in ASP.NET Core architecture. It includes built-in IoC container to provide dependent objects using constructors.

The ConfigureServices method is a place where you can register your dependent classes with the built-in IoC container. After registering dependent class, it can be used anywhere in the application. You just need to include it in the parameter of the constructor of a class where you want to use it. The IoC container will inject it automatically.

ASP.NET Core refers dependent class as a Service. So, whenever you read "Service" then understand it as a class which is going to be used in some other class.

ConfigureServices method includes IServiceCollection parameter to register services to the IoC container. Learn more about it in the next chapter.

Configure()

The Configure method is a place where you can configure application request pipeline for your application using IApplicationBuilder instance that is provided by the built-in IoC container.

ASP.NET Core introduced the middleware components to define a request pipeline, which will be executed on every request.

DEPENDENCY INJECTION

Dependency Injection is a technique whereby one object(or static method) supplies the dependencies of another object.

A dependency is an object that can be used (a service).

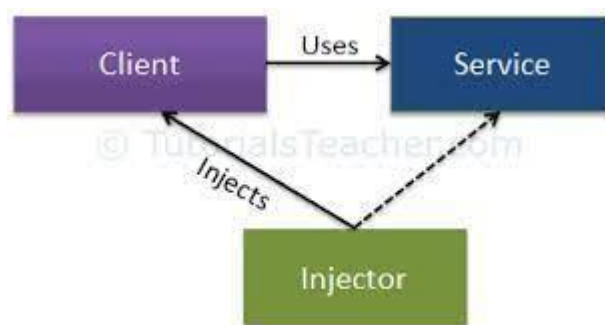
Dependency Injection is an implementation of "Inversion of Control". Inversion of Control (IoC) says that the objects do not create other objects on which they rely to do their work; instead, they get the objects that they need from an outside source (for example, an XML configuration file).

The Dependency Injection pattern involves 3 types of classes.

Client Class: The client class (dependent class) is a class which depends on the service class

Service Class: The service class (dependency) is a class that provides service to the client class.

Injector Class: The injector class injects the service class object into the client class.



Reference

https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.tutorialsteacher.com%2FContent%2Fimages%2Fioc%2FDI.png&imgrefurl=https%3A%2F%2Fwww.tutorialsteacher.com%2Fioc%2Fdependency-injection&tbnid=5BOdcGvAN3sk2M&vet=12ahUKEwj_ouW5IXwAhVHAnIKHcS8D64QMygRegUIARDUAQ..i&docid=Vzuvt0rPCEK7AM&w=369&h=198&q=dependency%20injection%20in%20mvc&ved=2ahUKEwj_ouW5IXwAhVHAnIKHcS8D64QMygRegUIARDUAQ

WHAT EXACTLY IS MVC?

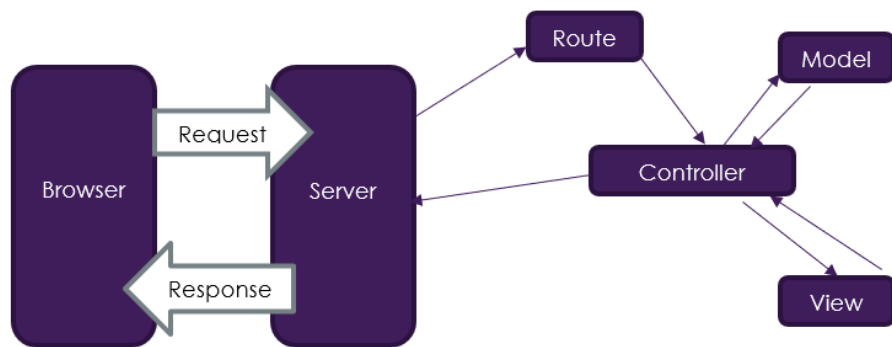
MODEL: The model is responsible for managing the data of the application. It contains no business logic. In simple term, models are the entity representation of the database tables that consists the properties of table columns.

VIEW: View is the user interface; it contains the Markup(Razor Syntax). It uses the Razor engine to render the view. View renders the model data passed to it via any controller. C# code can also be written in a view.

CONTROLLER: Controller handles the user interaction, and it is responsible for invoking the action bases on the route and fetching data from the model to render the view.

- In MVC architecture, the controller receives the HTTP request and then works with the model to get the data and render it to the view.
- MVC isolates the application logic from the user interface layer and supports the separation of concerns.
- The controller specifies which view to render based on the HTTP request.

Workflow of MVC architecture.

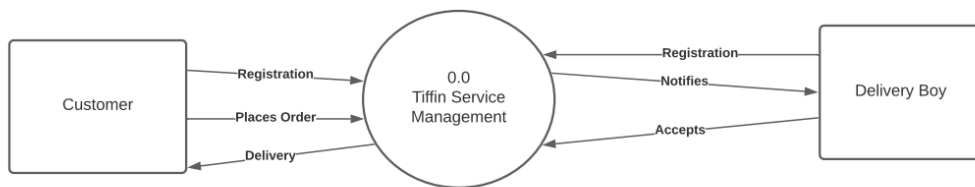


(fig: Workflow of MVC architecture)

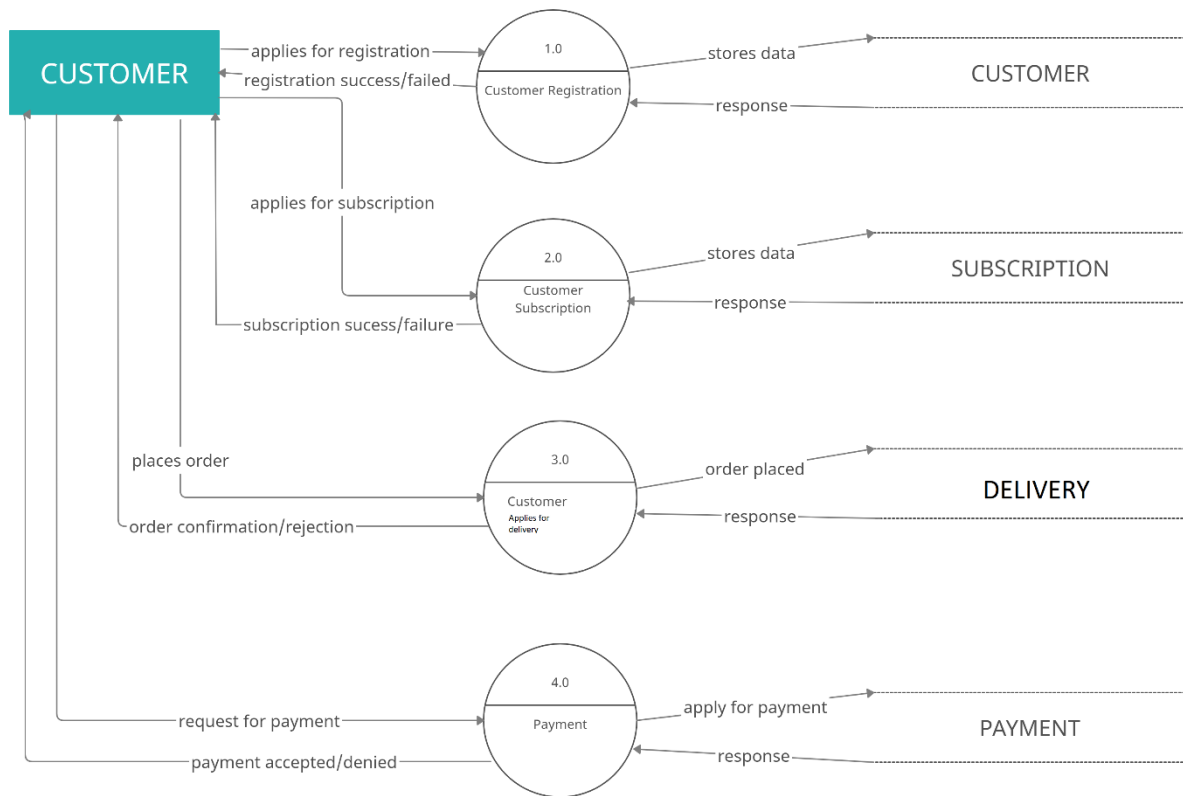
Design Considerations for Detail Design

1) Data Flow Diagram

Level 0:

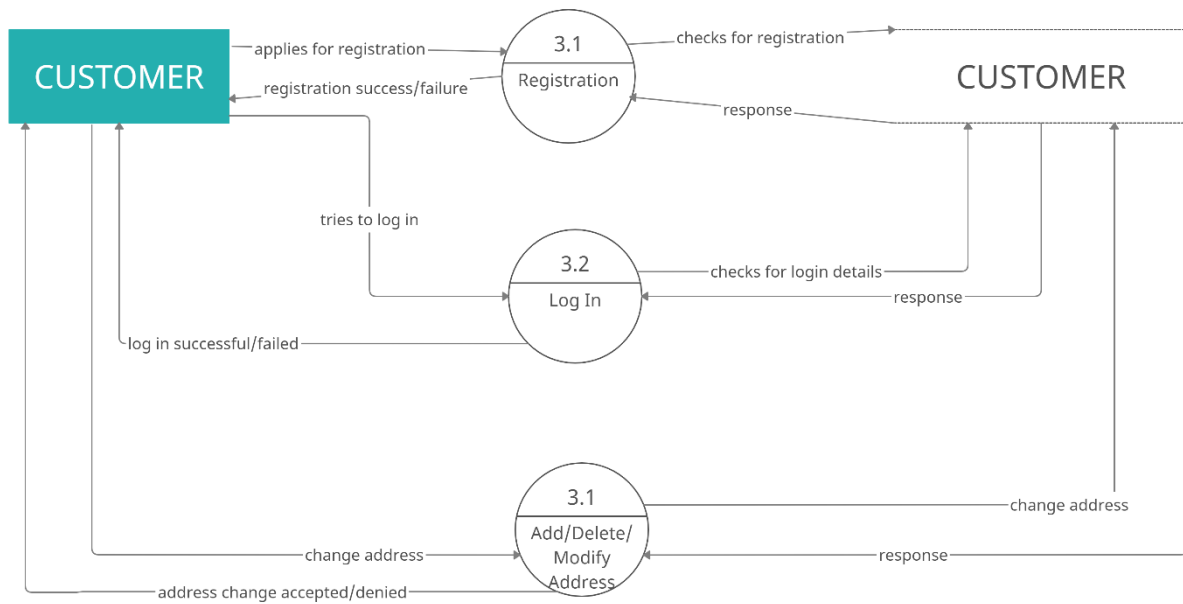


Level 1:



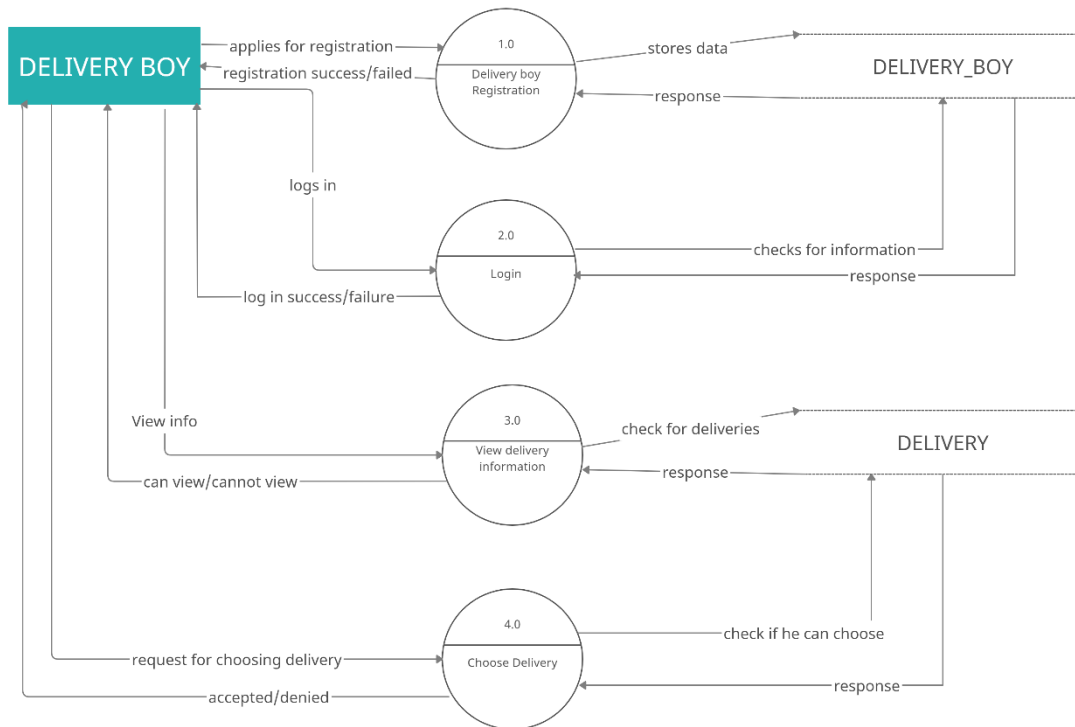
Level 2:

2nd Level DFD for Customer

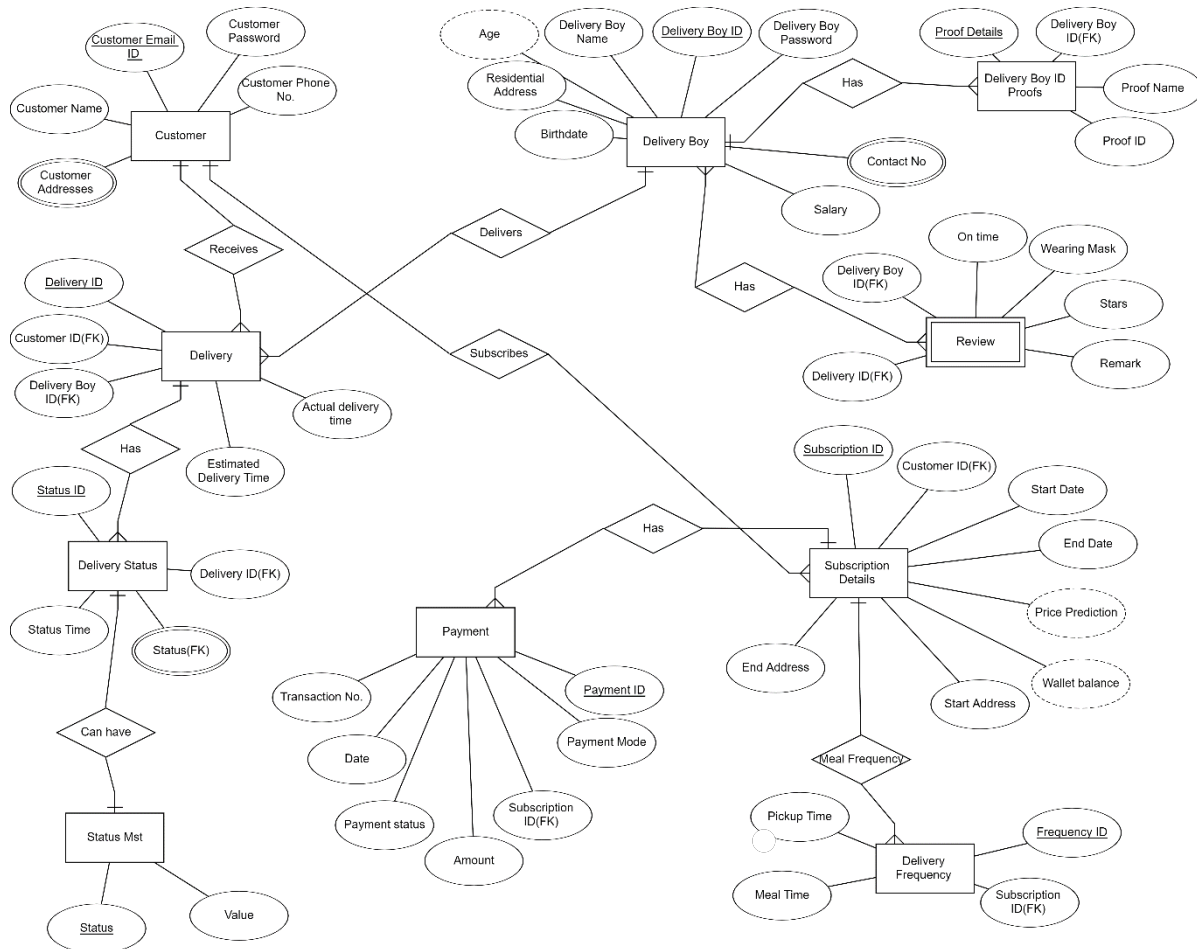


Level 2: Delivery Boy

Data Flow Diagram for Delivery Boy



2) ER Diagram



3) Unique Prototyping Diagram for proposed model

User/Customer:

Scale:

1= Ghar Ka Khana App

2=Tiffilo Se Tiffin Lo

3= Zomato

4=Swiggy Genie

5=Khaaji Food and Tiffin Services

Here, we are putting numbers wherever we want to say something about the features of an existing app.

1 provides login with mobile number only.

2 provides login with Truecaller/Mobile number

3 provides Login with Mobile number but also

keeps Email address

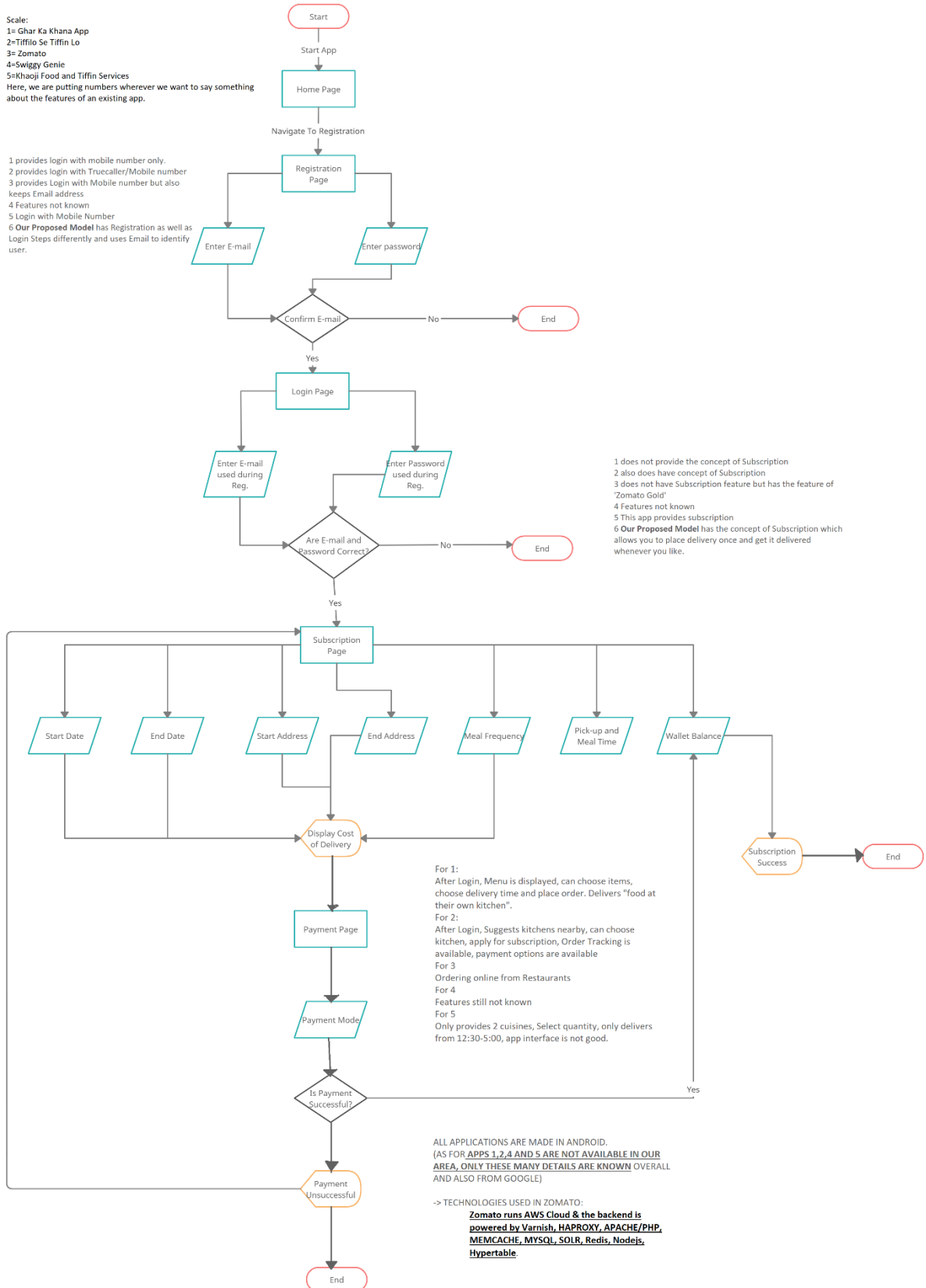
4 Features not known

5 Login with Mobile Number

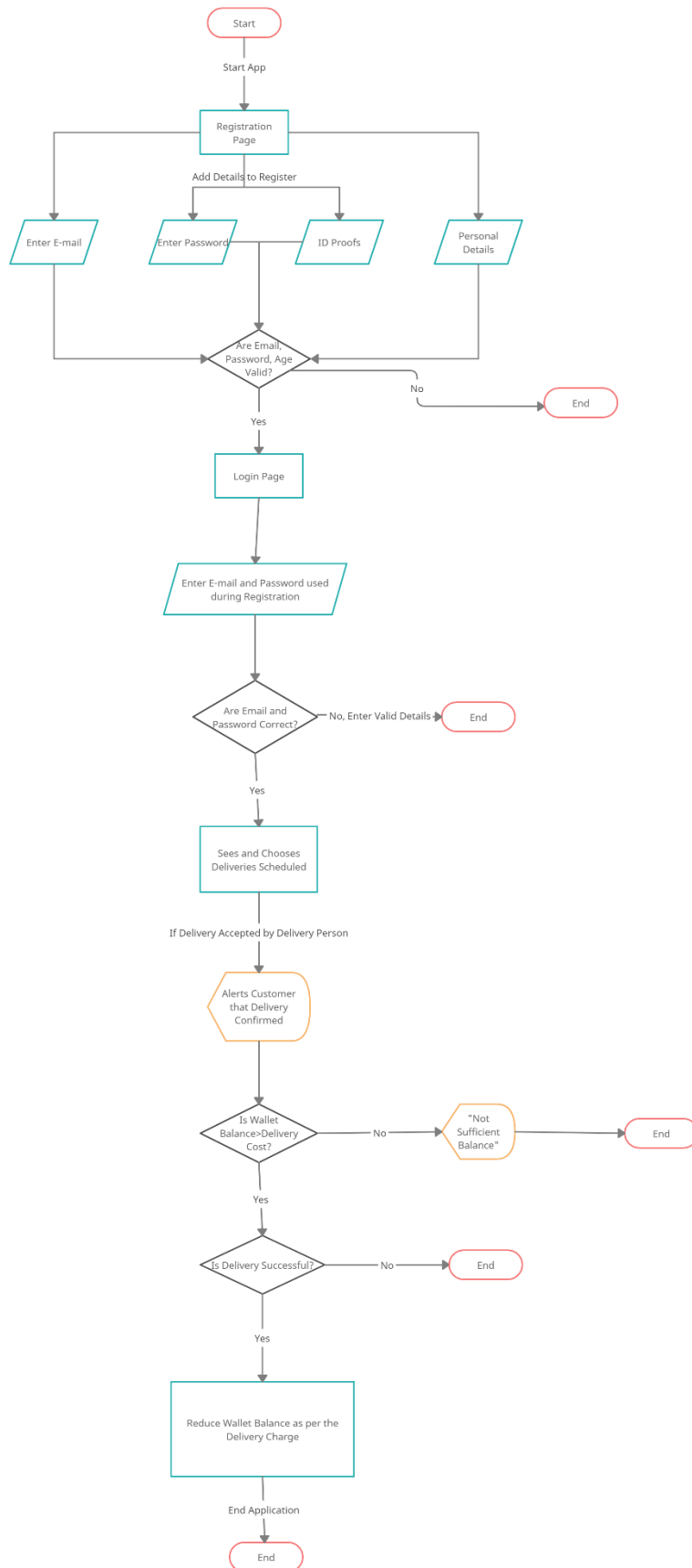
6 Our Proposed Model has Registration as well as

Login Steps differently and uses Email to identify

user.



Delivery Boy:











Designing Canvas

1) AEIOU

AEIOU Summary		Group ID: Project Name: Tiffin Service Web Application	Date: 02/02/2021	Sheet No:
Environment: <ul style="list-style-type: none">• Weather (Sunny/Foggy/Cloudy/Rainy)• Traffic Jam/Crowd• Bad road conditions• Road closed• Vehicle issue (Petrol exhausted/Puncture)• No delivery boy nearby• Payment failure	Interactions: <ul style="list-style-type: none">• Asking for address/directions to customer• Traffic Police• Payment after receiving delivery	Objects: <ul style="list-style-type: none">• Tiffin Box• Mobile• Computer• Vehicle• Internet• Masks• Sanitizer		
Activities: General Impressions/Observation: <ul style="list-style-type: none">• Registration• Login• Subscription• Delivery Review• Change/Modify/Delete Address• Payment• Delivery Confirmation		Users: <ul style="list-style-type: none">• Hungry people• Employee• Student		

2) Product Development Canvas

Purpose  <ul style="list-style-type: none"> • Get home hot and healthy food at your workplace/school/college. • No need to eat unhealthy restaurant food. • Pay only delivery charges per some kilometers. 	Product Experience  <ul style="list-style-type: none"> • Easy to use • Convenient • Attractive UI 	Customer Revalidation  <ul style="list-style-type: none"> • Registration and login with correct data. • License details of delivery person. • Proper pick-up and drop address details.
People  <ul style="list-style-type: none"> • Employee • Student • Hungry people 	Product Functions  <ul style="list-style-type: none"> • Convenient Delivery at any time. • Check previous orders easily. • Help at difficult times like if there is no-one to deliver tiffin from home. 	
	Product Features  <ul style="list-style-type: none"> • "Wallet Balance" for customer. • "Subscription" for customer. • Delivery person checks delivery options easily. • Customer can check "delivery status" updated by delivery guy easily. • Customer can order more than once in a day by "meal frequency". 	
	Components  <ul style="list-style-type: none"> • Tiffin box • Computer/ Laptop • Vehicle • Masks • Sanitizer • Proper internet connection 	Reject, Redesign, Retain  <ul style="list-style-type: none"> • More secure • More user interactive • Enhancement of payment features

Implementation/ Simulation and Analysis

Technologies Used: -	HTML, CSS, JavaScript, Bootstrap, Asp .Net Core Mvc, Sql Server, Entity Core Framework
Tools: -	IDE: Visual Studio 2019 Database: MS-SQL Web Browser: Google Chrome Web Server: IIS Express

Module Description: -

The modules of our proposed Tiffin Service Web Application are as follows: -

a. Registration for Customer

This module deals with the basic registration of the customer who wants to avail the delivery service. The Email Id and password entered during the registration process can be used to login into the account.

b. Subscription

The person who wants to book their delivery will need to subscribe with the application and then only they will be allowed to proceed further.

c. Registration for the Delivery Boy

If a person who wants to work as a delivery partner with this app need to register themselves with the application and provide all the details required. After the registration process is completed, he/she can select the deliveries and deliver them.

d. Login

Customer/Delivery boy can login into the system to see their account details/ deliveries for the delivery boy as well as customer.

e. Payment

Payment options like card, UPI transaction are available.

f. Delivery Status

The delivery status is for the customer to know the whereabouts of their food. It can be updated by the delivery boy and can be viewed on the customer side.

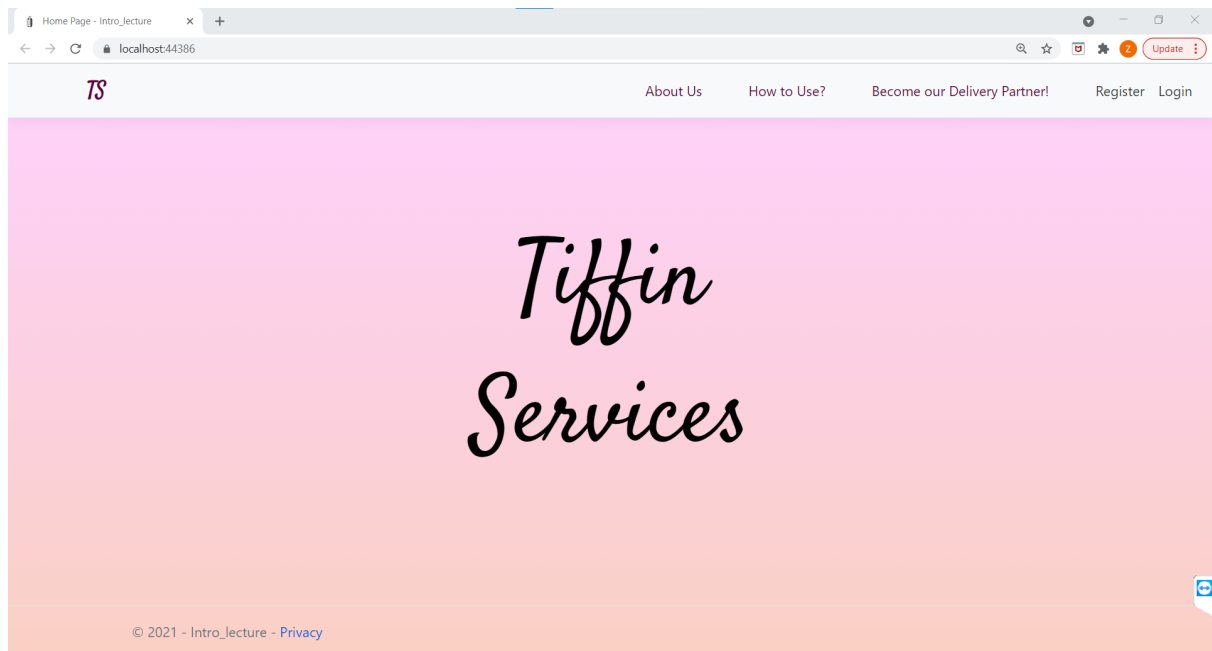
Database Description: -

The database of our proposed system is composed of following data-tables: -

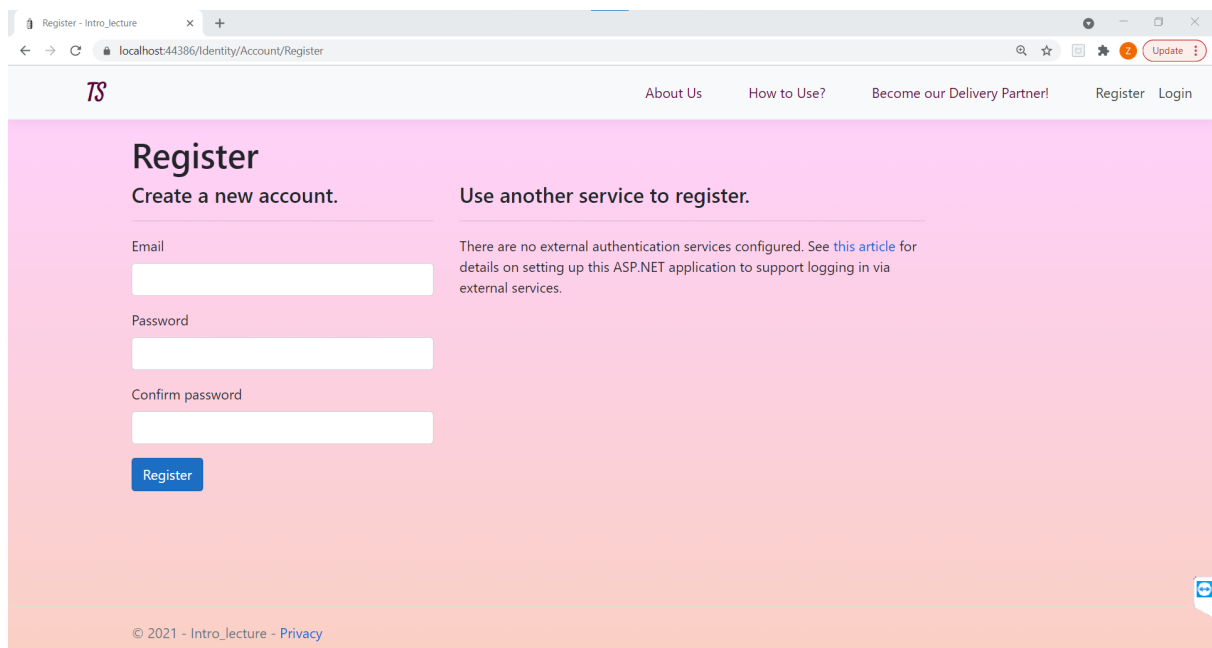
- **AspNetUsers:** containing User/Customer Details
- **Subscription_Details:** containing details of Subscription of the customer
- **DeliveryBoy:** containing data of delivery boy
- **DeliveryFinal:** the data of particular delivery-deliveryboy-customer
- **Payment:** payment data

Snapshots of the Prototype: Tiffin Service Web Application

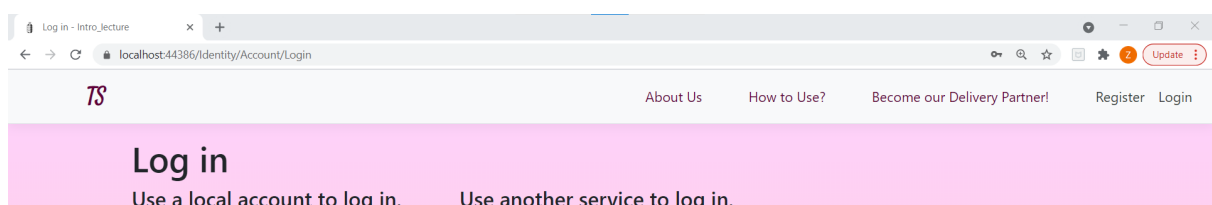
1. Home Page/Welcome Page



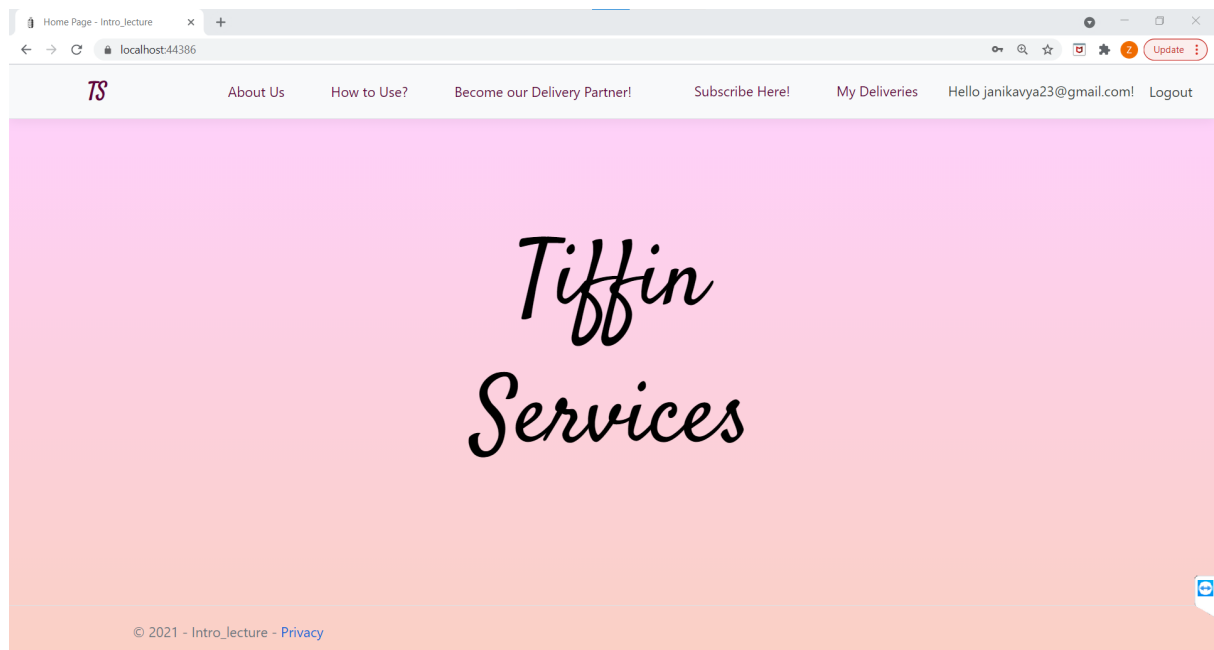
2. Registration Page



3. Customer Login Page



4. User Home Page after Login



5. Subscription form

Intro_Lecture x +

localhost:44386/Subscription

Update

Welcome

You are 30 seconds away from having your home food!

Subscription Form

User Id:

Start Date:

End Date:

Pick-Up Address:

Drop Address:

Meal Frequency: (You can choose max frequency upto 2!)

Pick-Up Time:

Subscribe

6. Payment Page(dummy)

Intro_Lecture x +

localhost:44386/Subscription/Payment

Update

Dummy Mode. Currently does not do anything.

Payment

Payment Mode:

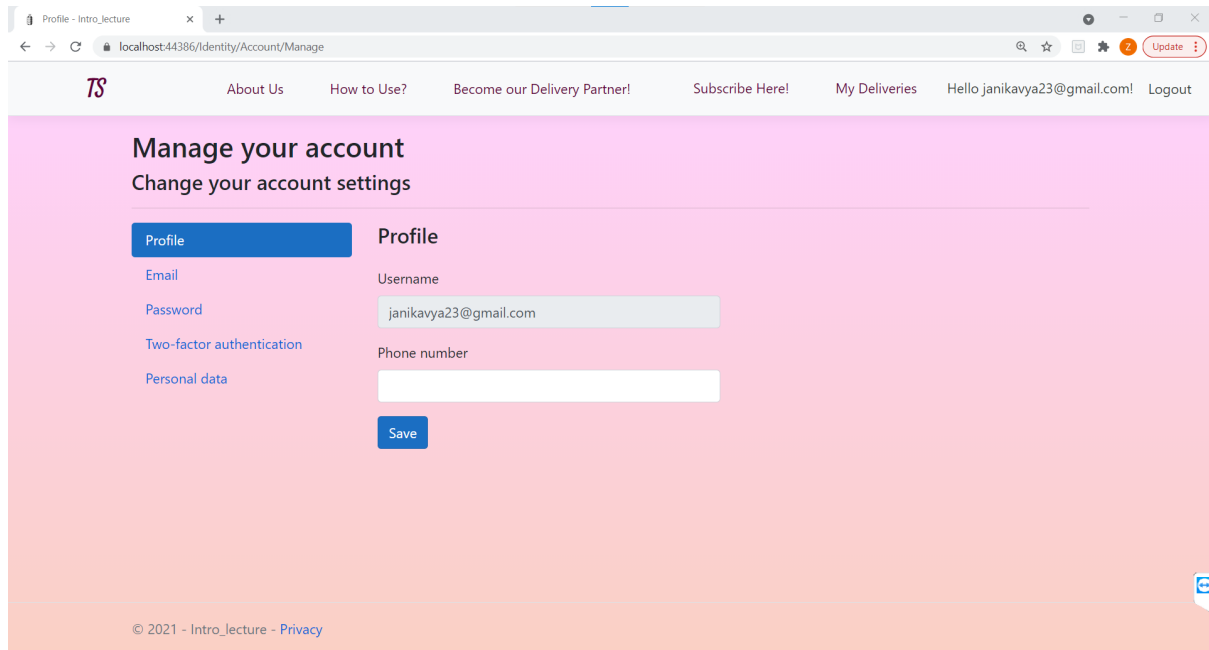
Amount:

Payment Status:

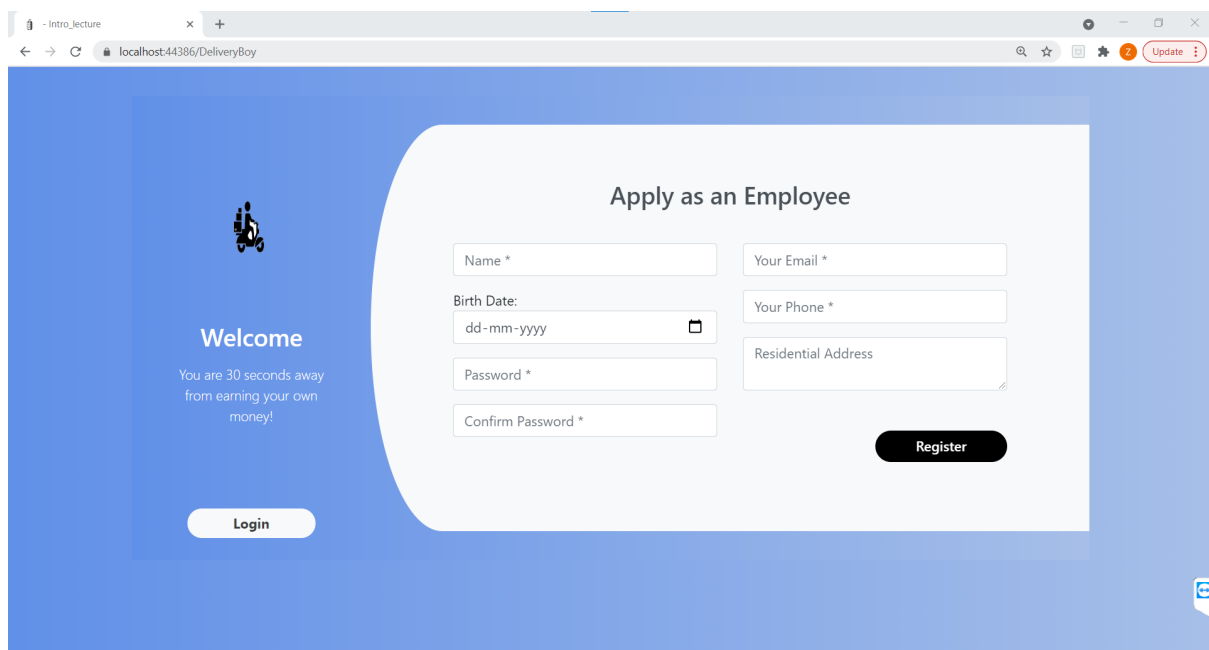
Date:

☐ Save card on file?

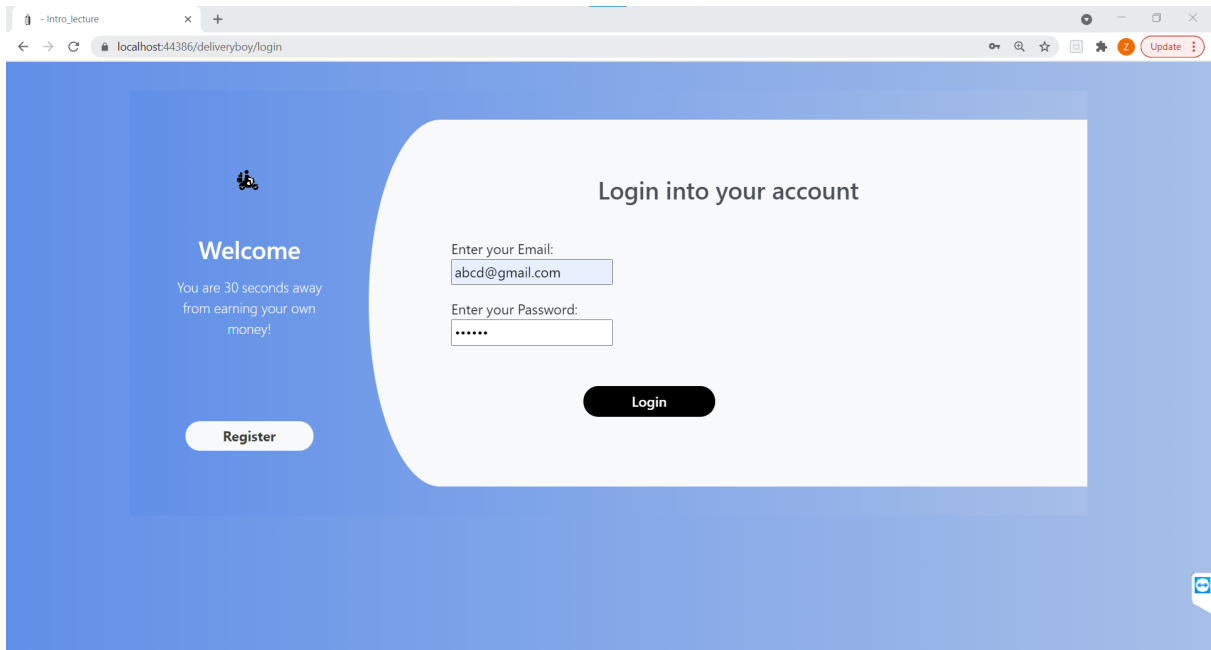
7. User Account Manage Page



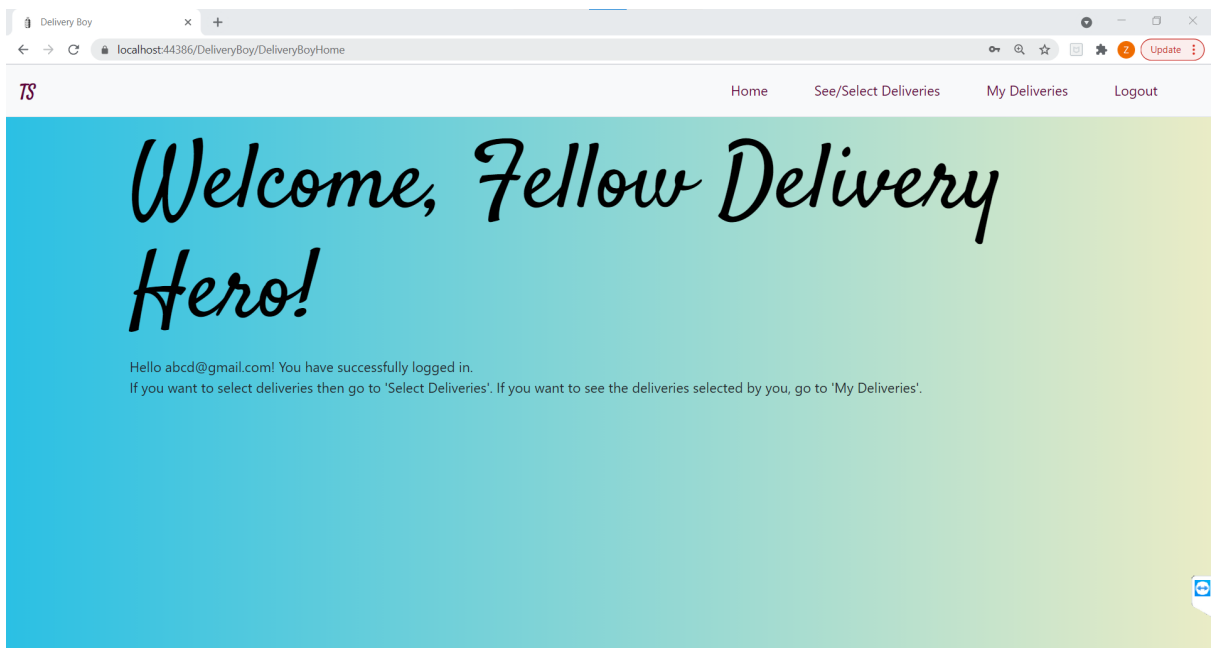
8. Delivery Boy Registration Page



9. Login Page for Delivery Boy



10. Delivery boy home page



11. Pending Delivery List

Delivery Boy
localhost:44386/DeliveryBoy/DeliveryDetails

Home
See/Select Deliveries
My Deliveries
Logout

Delivery List

Customer Details

Delivery Amount

Meal Frequency

Start Date

End Date

Pick-Up Address

Drop Address

PickUp Time1

Drop Time1

PickUp Time2

Drop Time2

12. Delivery Boy's Deliveries

Delivery Boy
localhost:44386/DeliveryBoy/FinalDelivery

Home
See/Select Deliveries
My Deliveries
Logout

My Email	Customer Details	Delivery Fees	Pickup Address	Drop Address	Status
abcd@gmail.com	solankizarana312@gmail.com	60	Home	Office	<input type="button" value="Update Status(dummy)"/>
My Email	Customer Details	Delivery Fees	Pickup Address	Drop Address	Status
abcd@gmail.com	jp123@gmail.com	40	Jalaram Park	BVM	<input type="button" value="Update Status(dummy)"/>
My Email	Customer Details	Delivery Fees	Pickup Address	Drop Address	Status
abcd@gmail.com	jp123@gmail.com	80	skbckdbf	dvjbjyb	<input type="button" value="Update Status(dummy)"/>
My Email	Customer Details	Delivery Fees	Pickup Address	Drop Address	Status
abcd@gmail.com	jp123@gmail.com	20	Jalaram Park	BVM	<input type="button" value="Update Status(dummy)"/>
My Email	Customer Details	Delivery Fees	Pickup Address	Drop Address	Status
abcd@gmail.com	zaranasolanki41014@gmail.com	0	501 Shakti Tower,	Behind Bright CBSE School,	<input type="button" value="Update Status(dummy)"/>

Conclusion

TSWA is a website primarily designed for people wanting to eat home-made food in their workplace or schools, colleges. It is a food delivery application which will allow customers to get hygienic, home-made food. The system also allows a quick and easy-to-get subscription in just a few steps. Delivery partners then use these orders through an easy to navigate graphical interface for efficient processing. Hence, this application is really efficient and useful.

Future Scopes

The proposed system can be used by students, faculties as well as office going people to get home food. This project can be enhanced by adding real-time tracking of the food using Google Maps API and GPS. Also, this project could be made into an Android application for much easier use.

References

1. <https://devblogs.microsoft.com/dotnet/introducing-net-5/>
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