Online Order System

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Part I
State of the art

1 general introduction

1.1 The Context

The strengthening of interactions between trade and research institutions such as universities, colleges and research institutes has been increasingly seen as a strategic instrument for regional and national innovation, economic growth and competitiveness. The most recent innovation and research policies place a strong emphasis on interaction and cooperation between business and academia as a key public policy to foster innovation in the economy. Closer interaction is expected to lead to “more relevant research projects, faster uptake of scientific knowledge in the private sector, and better use of scientific knowledge” (NHD, 2003). University-business interaction is highlighted as a tool to boost business research and development capacity building, as well as a tool to make higher education and research more relevant and responsive to business needs. This policy direction is part of the overall political vision of becoming a leading knowledge-based country in the global knowledge-based economy (NHD, 2003).

1.2 The Project Objectives

In our project we are too interested for creating a collaboration between informatique and Commerce fields, so actually we gave our interesting about ”restaurant online orders” , restaurants are searching for Target a larger segment of clients by using , ads , deliveration food , but now we suggest a new way to solve their problem . Our platform is an intermediary that links customers and restaurants’. It helps the customer to reach his favorite restaurant easier. It also helps restaurants to expand their presence, especially in the information and Internet space, which will give the companies phone greater access to customers in terms of quality and quantity, and without Doubt will contribute to increasing sales and this is what companies of a commercial nature seek. Our platform is an exploitation of the scientific knowledge available in the field of informatics within the framework of digitizing trade and enhancing the presence of technology in daily transactions that would facilitate life and move from traditional methods to more modern methods commensurate with what the outside world has reached compared to our situation in Algeria .

1.3 The MEMORY OVERVIEW

2 the project introduction

2.1 Introduction

Our platform in particular, it’s an orders management system, so in this chapter we will know what the “orders management system” is, and we will also discuss the goals that we are working to achieve through this work. We are interested in studying the existing criticisms, and suggest possible solutions. Our mission is to create a system that consists of two parts, a client part, which is a mobile application in the Dart language and flutter framework and also Firebase, and there is a server part, which is only available to a store manager who manages orders, the server is a dynamique website that was created Using CSS, HTML and ReactJS and Node Js frameworks , and managing databases using SQL, the role of this platform is to display products for sale via the mobile application, so that the order is managed through the store’s manager through the website , the technology of order status tracking and automatic locator technology are available to facilitate the delivery of the ordered items, This platform also provides the ability to open a personal account .

2.2 Project objectives

The objective of the project is to develop a platform that will allow perform the following operations:

- make The ability to order food from the restaurant from anywhere
- organize food delivery operations.

- Manage clients orders.
- show the restaurant products .

2.2.1 the existence study

So that restaurants can solve the problems they may face, including the problems of limited customers and lack of sales, they are forced to choose a suitable place where business is thriving and where people are interesting with food, or they are opening several branches in different places to expand business, which will cost them a lot of money and expenses. (Higher workplace expenses, equipment costs, higher wages for workers, higher taxes) It would run the risk of going bankrupt without making the required profit margin, and on the other hand the customer would have to go personally to the place of the restaurant to order food, which would waste time and effort and might find nothing to look for. Now in our time, there are solutions to this crisis with minimal losses, especially with the presence of the Internet and informations technology, whose exploitation in our daily lives is necessary to facilitate many of the difficulties we faced in the past.

2.2.2 the critique of the existence

The current manual solution is traditional, thus posing different problems, namely:

- It takes a long time to reach the desired goal .
- It requires more effort with the risk of bankruptcy
- Requires a high budget and workers
- A solution that is not in line with the current development of trade methods with the spread of digitization and technology
- A traditional and imperfect solution to the problem at hand, as there are many factors that will directly affect this method

2.2.3 suggested solution

Through information technology, new commerce and service fields development perspectives have emerged, and the creation of a restaurant order management application aims to develop and digitize e-commerce. Using the Internet as a means of dealing in the services and commercial sectors can reduce costs, improve performance and make dialy life citizens easier. This project relies on the creation of a customer order management system.

2.2.4 Client Section

By creating a mobile application that is publicly available through which shops display their products and services and allow product demand in the presence of the Internet. It also determines the geographic location of the customer to assist in the delivery process. It also requires the opening of a personal account to create a client's profile to provide greater protection and ease to the customer.

2.2.5 Administrator section

The system also contains a section for store manager , which is a web site that allows for the control of the products offered, the reception and examination of customers' orders and the identification of the customer. the system is Available in offline mode

Part II
Project Methologies

3 Agile Developement

3.1 Continous Integration

Continuous integration is a DevOps software development practice where developers regularly merge their code changes into a central repository, after which automated builds and tests are run. Continuous integration most often refers to the build or integration stage of the software release process and entails both an automation component (e.g. a CI or build service) and a cultural component (e.g. learning to integrate frequently). The key goals of continuous integration are to find and address bugs quicker, improve software quality, and reduce the time it takes to validate and release new software updates.

3.2 GitHub

Github is a Version control system that records changes to a file or set of files over time so that you can recall specific versions later. It allows you to revert files back to a previous state, revert the entire project back to a previous state, compare changes over time, see who last modified something that might be causing a problem, who introduced an issue and when, and more. Using a VCS also generally means that if you screw things up or lose files, you can easily recover. In addition, you get all this for very little overhead.

3.3 Code Quality

Single-Responsibility Principle : A class should have one and only one reason to change, meaning that a class should have only one job.

Open-Closed Principle : Objects or entities should be open for extension but closed for modification.
Liskov Substitution Principle : Let q(x) be a property provable about objects of x of type T. Then q(y) should be provable for objects y of type S where S is a subtype of T.
Interface segregation principle :A client should never be forced to implement an interface that it doesn't use, or clients shouldn't be forced to depend on methods they do not use.
Dependency Inversion Principle : Entities must depend on abstractions, not on concretions. It states that the high-level module must not depend on the low-level module, but they should depend on abstractions.

3.4 Test Driven Developement

Test Driven Developement is an aproach that allow developers to deploy software features without the fear of breaking existing code which promote teams continous integration cycles.It also enhance softwares lifetimes and developement costs on the long run.

How to write Tests Not all the code is created equally, only test the critical parts that contribute to the software sucess . Write tests before production code to ensure software testibility and further enhanche code quality . Name tests using their side effects,expected result or the state they leave the system in.

Why write Tests Softwares that has long lifetimes tend to grow exponentially in both complexity and developements costs as such TDD help us break down the complexity by providing live documentations in the form of tests . They also work as a safety net to help future updates and maintenance .

When not to write Tests Tests are not always the right answer as they slow down early developement and don't bring much to small,simple,short lived projects .

4 Project Architecture

4.1 Analysis Models

An analysis model is a byproduct of defining conceptual models that capture system behaviors,rules and information flows.Which help identifying the key requirements and obstacles of buidling the software.
Key Points

- Distiling the system into subsystems and capturing the relations between each.
- Capturing the system core components ,events and ressources flows(REA).

4.2 Domain Driven Design

Domain Driven Design is an approach enabling teams to effectively manage construction and maintenance of complex domains software by seperating technical concerns from buisness logic and promoting agile enviroments.
Key Points

- Architecting the software into Ui,Application,Domain Infrastructure.Each layer would be further architected into bounded contexts.
- Setting up knowledge-crunching sessions with domain experts whenever possible to develop a common ubiquitous language.
- Identifying core and subdomains to better spend ressources on what really matters.

4.3 Design Patterns

Design patterns are typical solutions to commonly occurring problems in software design. They are like pre-made blue- prints that you can customize to solve a recurring design prob- lem in your code. **Observer Pattern**
Singeleton Pattern

5 Technologies

5.1 TypeScript

A typed superset language that compile to javascript,it supports both commonJs and the latest release of EscmaScript formats.

Why use it It reduces production errors by providing typing and autocomplete features. Enables writing better and cleaner code as it introduces interfaces,classes,inheritance and access modifiers.

DrawBacks Typescript is compiled to vanilla javascript before executing in the browser as such it requires a headder of pre-building it's modules. Sometimes the compiled javascript is inefficent and ugly which might produce some performance bottlenocks.

5.2 Sql

Structured Query Language (SQL) is a programming language that is typically used in relational database or data stream management systems.

5.3 Dart

Dart is a client-optimized cross platform language , it adopts a declarative paradiagm which solves a lot of common problems in imperative languages . Dart is optimised for building ui as it provide hot reloading features .

6 TechStack

6.1 Flutter

A cross-platform framework that enable developers to build visually enhanched apps,the framework use dart as it's underlying language and promotes a declarative programing paradigrams. Projects built by flutter share most of their codebase throught the different platforms and provide communication channels to acess the platform specific features.

Drawback : The framework is fairlly new and lack some crucial packages.

6.2 NodeJs

A javascript framework that enable building fast,responsive,scalable backend servers.However it's single threaded which makes it incompatable with intensive/cpu blocking operations.

6.3 React

A javascript framework that enables buidling single page applications,it also enhanches websites performances since it render on the client side instead of on the server.

Drawbacks: Since single page applications are rendered and cached on the client browser it produces some security overheads since it exposes all of the logic to the user. The concern is easily dealt with by refactoring the backend logic into a different server and exposing said functionality through an api.

6.4 Firebase

Firebase is a platform and a framework developed by google that provide a range variety of services including authentication,hosting,cloud storage ,realtime database,firestore,functions,analytics and cloud computing.

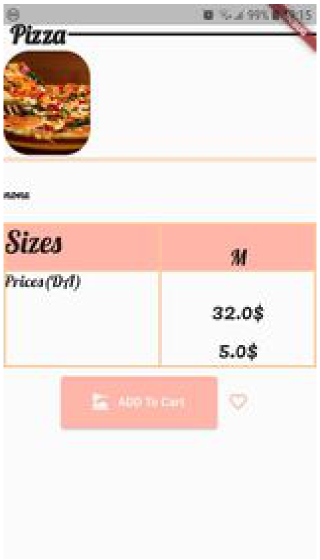
Part III

Project Implementation

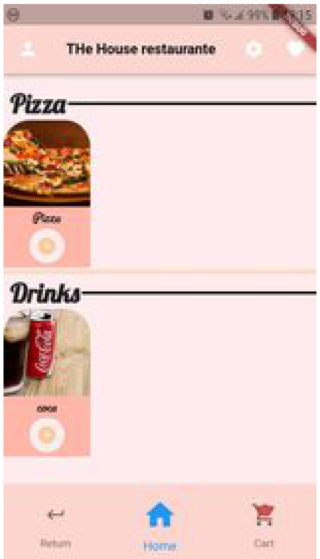
7 Mobile client app

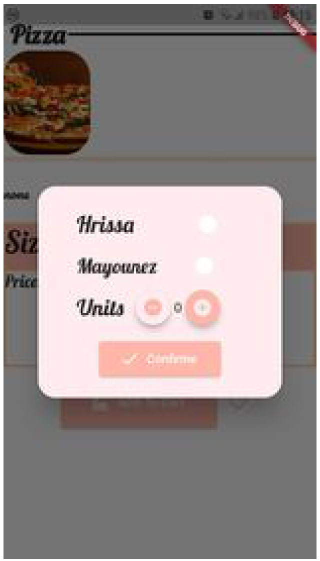
7.1 Project Structure

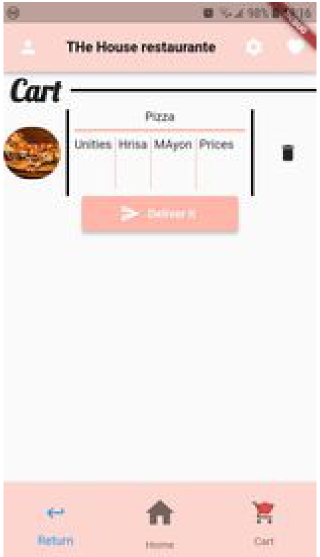
7.2 UI



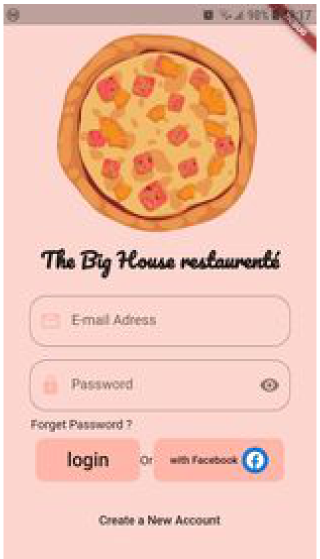
Sizes	M
Prices(DA)	32.0$ 5.0$

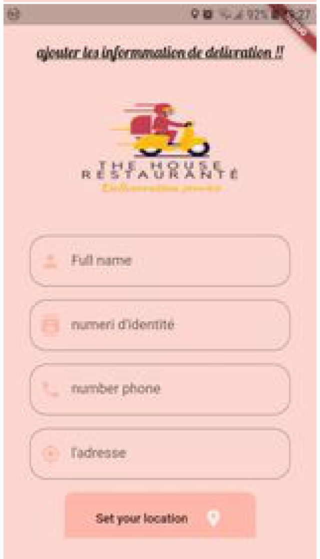


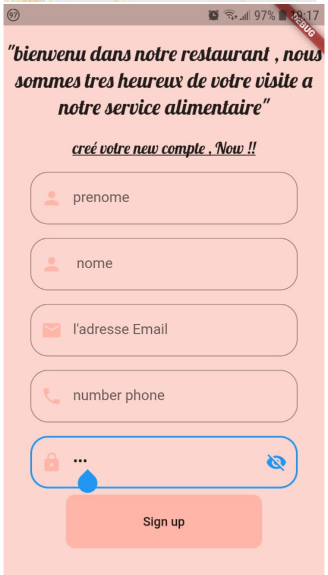




Pizza			
Unities	Hrisa	MAyon	Prices


The Big House restaurenté
E-mail Adress
Password
Forget Password ?
login
Or
with Facebook
Create a New Account


ajouter les informmation de delivration !!
THE HOUSE
RESTAURANTÉ
Full name
numeri d'identité
number phone
l'adresse
Set your location



"bienvenu dans notre restaurant , nous sommes tres heureux de votre visite a notre service alimentaire"

créé votre new compte , Now !!

prenome

nome

l'adresse Email

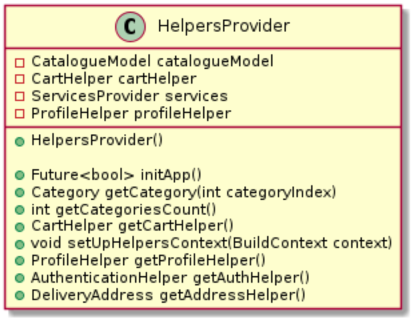
number phone

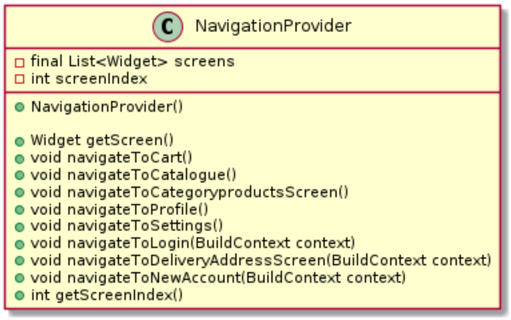
•••

Sign up

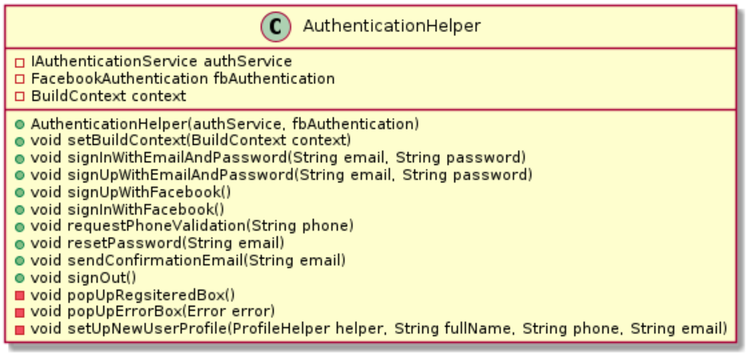
7.3 Application

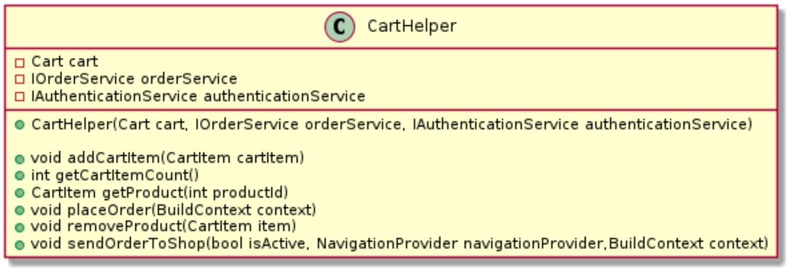
7.3.1 Providers

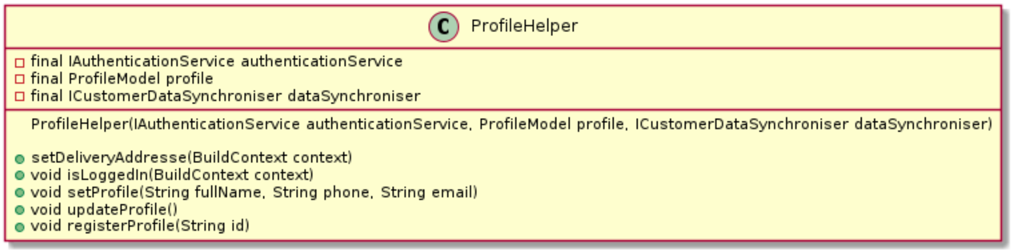

HelpersProvider
CatalogueModel catalogueModel
CartHelper cartHelper
ServicesProvider services
ProfileHelper profileHelper
HelpersProvider()
Future<bool> initApp()
Category getCategory(int categoryIndex)
int getCategoriesCount()
CartHelper getCartHelper()
void setUpHelpersContext(BuildContext context)
ProfileHelper getProfileHelper()
AuthenticationHelper getAuthHelper()
DeliveryAddress getAddressHelper()

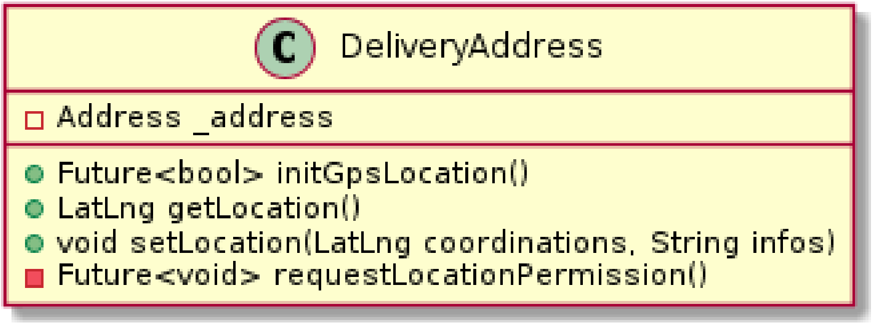

NavigationProvider
final List<Widget> screens
int screenIndex
NavigationProvider()
Widget getScreen()
void navigateToCart()
void navigateToCatalogue()
void navigateToCategoryproductsScreen()
void navigateToProfile()
void navigateToSettings()
void navigateToLogin(BuildContext context)
void navigateToDeliveryAddressScreen(BuildContext context)
void navigateToNewAccount(BuildContext context)
int getScreenIndex()

7.3.2 Helpers


AuthenticationHelper
IAuthenticationService authService
FacebookAuthentication fbAuthentication
BuildContext context
AuthenticationHelper(authService, fbAuthentication)
void setBuildContext(BuildContext context)
void signInWithEmailAndPassword(String email, String password)
void signUpWithEmailAndPassword(String email, String password)
void signUpWithFacebook()
void signInWithFacebook()
void requestPhoneValidation(String phone)
void resetPassword(String email)
void sendConfirmationEmail(String email)
void signOut()
void popUpRegsiteredBox()
void popUpErrorBox(Error error)
void setUpNewUserProfile(ProfileHelper helper, String fullName, String phone, String email)

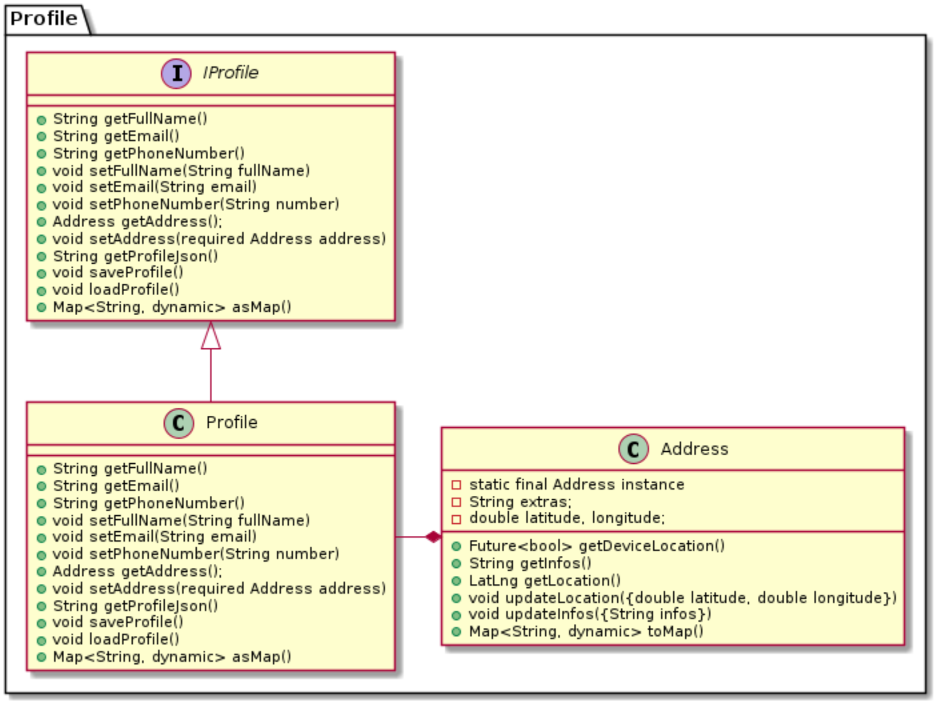

CartHelper
Cart cart
IOrderService orderService
IAuthenticationService authenticationService
CartHelper(Cart cart, IOrderService orderService, IAuthenticationService authenticationService)
void addCartItem(CartItem cartItem)
int getCartItemCount()
CartItem getProduct(int productId)
void placeOrder(BuildContext context)
void removeProduct(CartItem item)
void sendOrderToShop(bool isActive, NavigationProvider navigationProvider,BuildContext context)


ProfileHelper
final IAuthenticationService authenticationService
final ProfileModel profile
final ICustomerDataSynchroniser dataSynchroniser
ProfileHelper(IAuthenticationService authenticationService, ProfileModel profile, ICustomerDataSynchroniser dataSynchroniser)
setDeliveryAddresse(BuildContext context)
void isLoggedIn(BuildContext context)
void setProfile(String fullName, String phone, String email)
void updateProfile()
void registerProfile(String id)

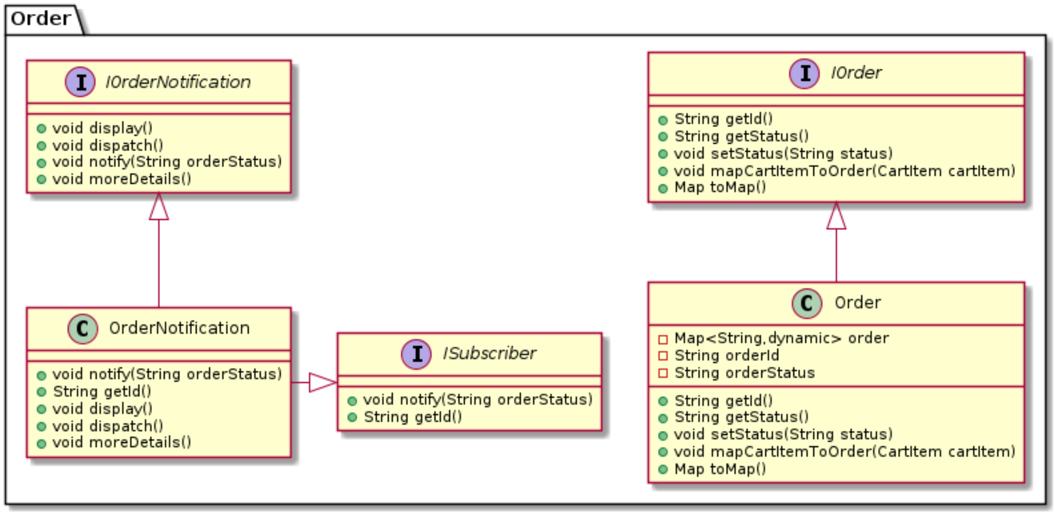

C
DeliveryAddress
□ Address _address
● Future<bool> initGpsLocation()
● LatLng getLocation()
● void setLocation(LatLng coordinations, String infos)
■ Future<void> requestLocationPermission()

7.4 Domain

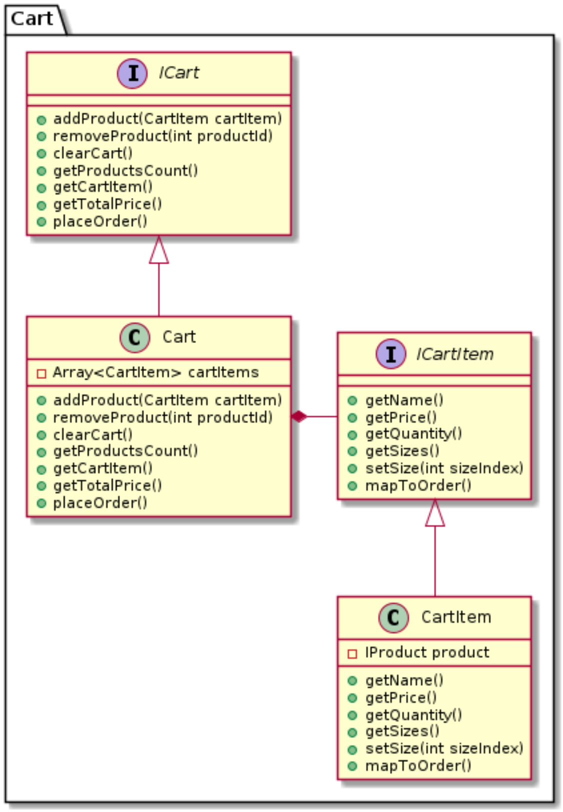
7.4.1 Profile


Profile
I
IProfile
● String getFullName()
● String getEmail()
● String getPhoneNumber()
● void setFullName(String fullName)
● void setEmail(String email)
● void setPhoneNumber(String number)
● Address getAddress();
● void setAddress(required Address address)
● String getProfileJson()
● void saveProfile()
● void loadProfile()
● Map<String, dynamic> asMap()
C
Profile
● String getFullName()
● String getEmail()
● String getPhoneNumber()
● void setFullName(String fullName)
● void setEmail(String email)
● void setPhoneNumber(String number)
● Address getAddress();
● void setAddress(required Address address)
● String getProfileJson()
● void saveProfile()
● void loadProfile()
● Map<String, dynamic> asMap()
C
Address
□ static final Address instance
□ String extras;
□ double latitude, longitude;
● Future<bool> getDeviceLocation()
● String getInfos()
● LatLng getLocation()
● void updateLocation({double latitude, double longitude})
● void updateInfos({String infos})
● Map<String, dynamic> toMap()

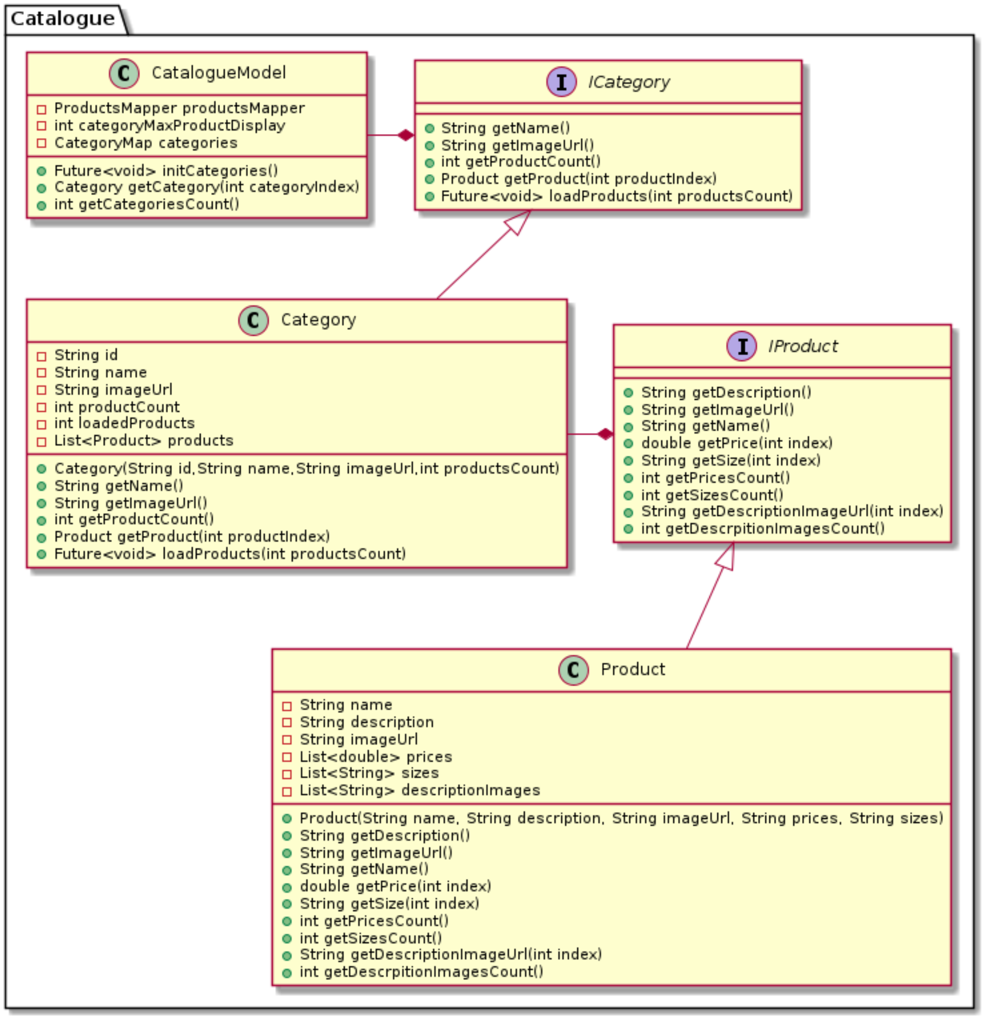
7.4.2 Order


Order
IOrderNotification
void display()
void dispatch()
void notify(String orderStatus)
void moreDetails()
OrderNotification
void notify(String orderStatus)
String getId()
void display()
void dispatch()
void moreDetails()
ISubscriber
void notify(String orderStatus)
String getId()
IOrder
String getId()
String getStatus()
void setStatus(String status)
void mapCartItemToOrder(CartItem cartItem)
Map toMap()
Order
Map<String,dynamic> order
String orderId
String orderStatus
String getId()
String getStatus()
void setStatus(String status)
void mapCartItemToOrder(CartItem cartItem)
Map toMap()

7.4.3 Cart

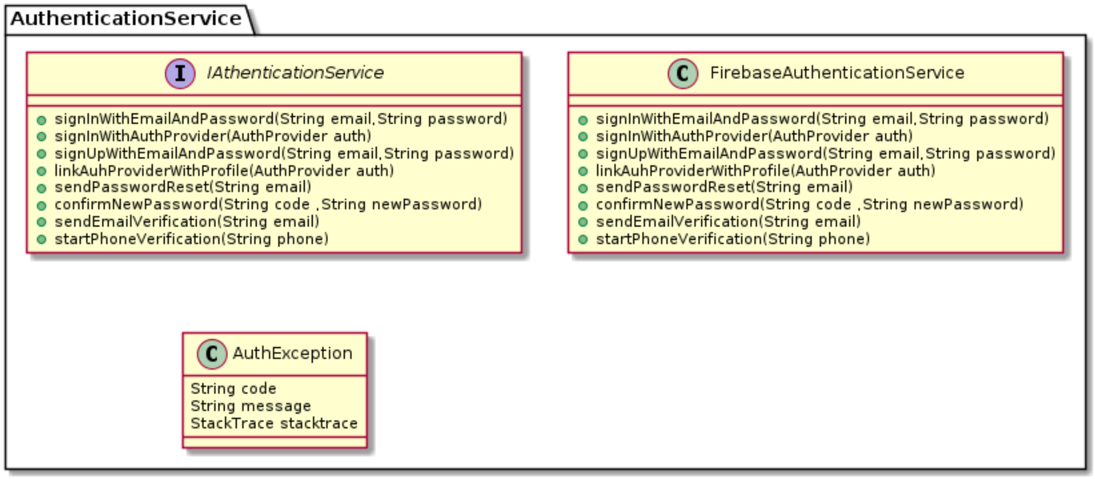

Cart
ICart
addProduct(CartItem cartItem)
removeProduct(int productId)
clearCart()
getProductsCount()
getCartItem()
getTotalPrice()
placeOrder()
Cart
Array<CartItem> cartItems
addProduct(CartItem cartItem)
removeProduct(int productId)
clearCart()
getProductsCount()
getCartItem()
getTotalPrice()
placeOrder()
ICartItem
getName()
getPrice()
getQuantity()
getSizes()
setSize(int sizeIndex)
mapToOrder()
CartItem
IProduct product
getName()
getPrice()
getQuantity()
getSizes()
setSize(int sizeIndex)
mapToOrder()

7.4.4 Catalogue

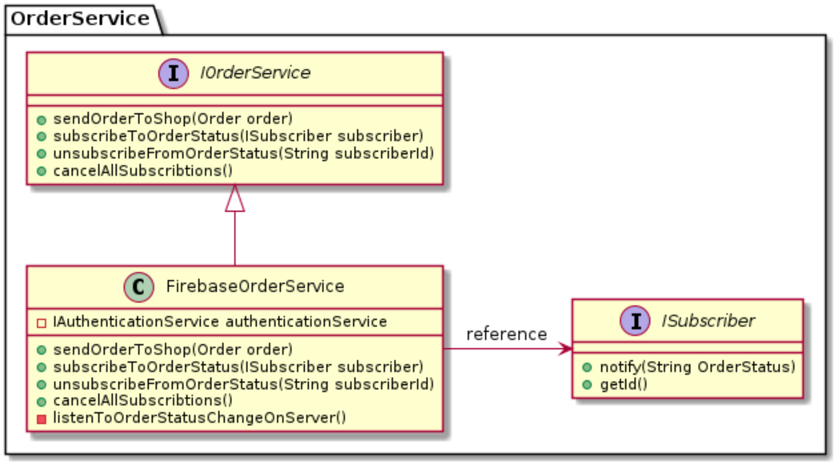

Catalogue
CatalogueModel
ProductsMapper productsMapper
int categoryMaxProductDisplay
CategoryMap categories
Future<void> initCategories()
Category getCategory(int categoryIndex)
int getCategoriesCount()
ICategory
String getName()
String getImageUrl()
int getProductCount()
Product getProduct(int productIndex)
Future<void> loadProducts(int productsCount)
Category
String id
String name
String imageUrl
int productCount
int loadedProducts
List<Product> products
Category(String id,String name,String imageUrl,int productsCount)
String getName()
String getImageUrl()
int getProductCount()
Product getProduct(int productIndex)
Future<void> loadProducts(int productsCount)
IProduct
String getDescription()
String getImageUrl()
String getName()
double getPrice(int index)
String getSize(int index)
int getPricesCount()
int getSizesCount()
String getDescriptionImageUrl(int index)
int getDescrpitionImagesCount()
Product
String name
String description
String imageUrl
List<double> prices
List<String> sizes
List<String> descriptionImages
Product(String name, String description, String imageUrl, String prices, String sizes)
String getDescription()
String getImageUrl()
String getName()
double getPrice(int index)
String getSize(int index)
int getPricesCount()
int getSizesCount()
String getDescriptionImageUrl(int index)
int getDescrpitionImagesCount()

7.5 Infrastructure

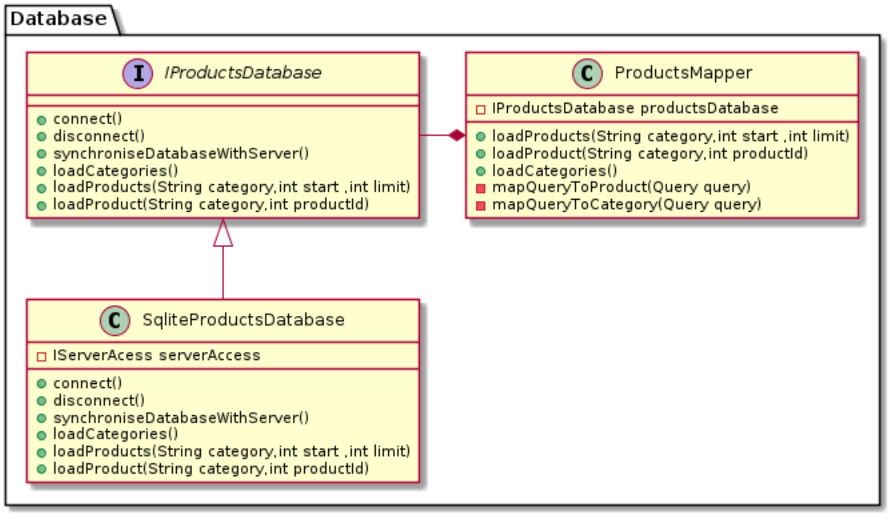
7.5.1 Authentication


AuthenticationService
IAthenticationService
signInWithEmailAndPassword(String email,String password)
signInWithAuthProvider(AuthProvider auth)
signUpWithEmailAndPassword(String email,String password)
linkAuhProviderWithProfile(AuthProvider auth)
sendPasswordReset(String email)
confirmNewPassword(String code ,String newPassword)
sendEmailVerification(String email)
startPhoneVerification(String phone)
FirebaseAuthenticationService
signInWithEmailAndPassword(String email,String password)
signInWithAuthProvider(AuthProvider auth)
signUpWithEmailAndPassword(String email,String password)
linkAuhProviderWithProfile(AuthProvider auth)
sendPasswordReset(String email)
confirmNewPassword(String code ,String newPassword)
sendEmailVerification(String email)
startPhoneVerification(String phone)
AuthException
String code
String message
StackTrace stacktrace

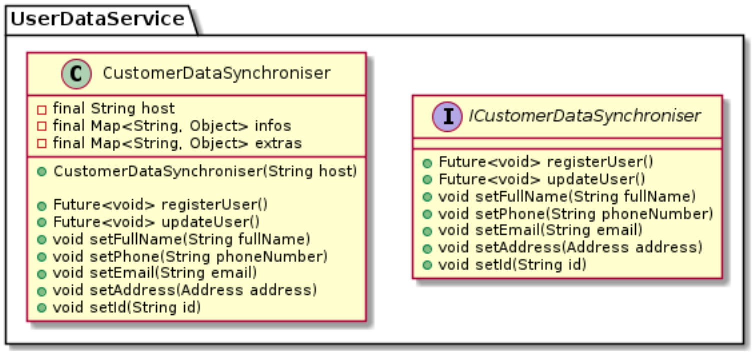
7.5.2 Orders


OrderService
IOrderService
sendOrderToShop(Order order)
subscribeToOrderStatus(ISubscriber subscriber)
unsubscribeFromOrderStatus(String subscriberId)
cancelAllSubscribtions()
FirebaseOrderService
IAuthenticationService authenticationService
sendOrderToShop(Order order)
subscribeToOrderStatus(ISubscriber subscriber)
unsubscribeFromOrderStatus(String subscriberId)
cancelAllSubscribtions()
listenToOrderStatusChangeOnServer()
reference
ISubscriber
notify(String OrderStatus)
getId()

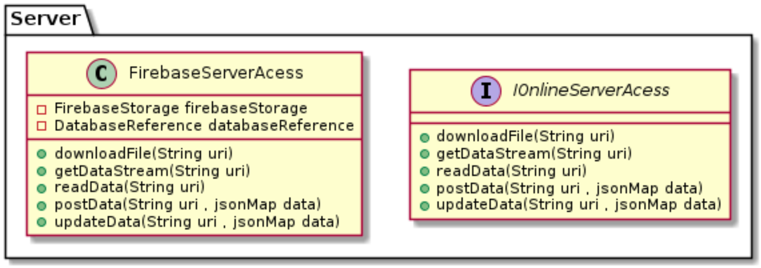
7.5.3 Database


Database
I IProductsDatabase
connect()
disconnect()
synchroniseDatabaseWithServer()
loadCategories()
loadProducts(String category,int start ,int limit)
loadProduct(String category,int productId)
C ProductsMapper
IProductsDatabase productsDatabase
loadProducts(String category,int start ,int limit)
loadProduct(String category,int productId)
loadCategories()
mapQueryToProduct(Query query)
mapQueryToCategory(Query query)
C SqliteProductsDatabase
IServerAcess serverAccess
connect()
disconnect()
synchroniseDatabaseWithServer()
loadCategories()
loadProducts(String category,int start ,int limit)
loadProduct(String category,int productId)

7.5.4 UserData


UserDataService
C CustomerDataSynchroniser
final String host
final Map<String, Object> infos
final Map<String, Object> extras
CustomerDataSynchroniser(String host)
Future<void> registerUser()
Future<void> updateUser()
void setFullName(String fullName)
void setPhone(String phoneNumber)
void setEmail(String email)
void setAddress(Address address)
void setId(String id)
I ICustomerDataSynchroniser
Future<void> registerUser()
Future<void> updateUser()
void setFullName(String fullName)
void setPhone(String phoneNumber)
void setEmail(String email)
void setAddress(Address address)
void setId(String id)

7.5.5 ServerAcess


Server
C FirebaseServerAcess
FirebaseStorage firebaseStorage
DatabaseReference databaseReference
downloadFile(String uri)
getDataStream(String uri)
readData(String uri)
postData(String uri , jsonMap data)
updateData(String uri , jsonMap data)
I IOnlineServerAcess
downloadFile(String uri)
getDataStream(String uri)
readData(String uri)
postData(String uri , jsonMap data)
updateData(String uri , jsonMap data)

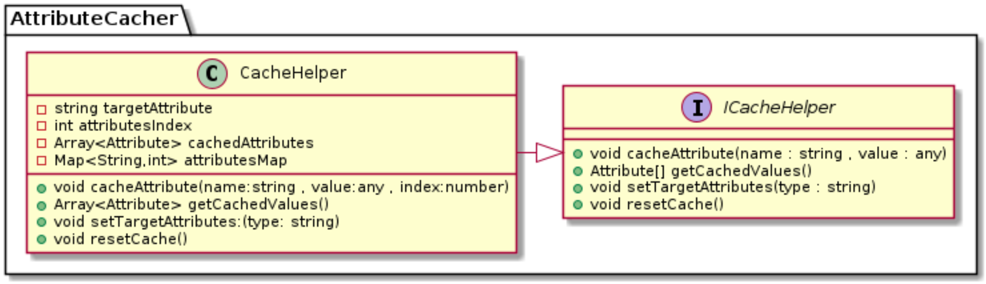
8 Shop react app

8.1 Project Structure

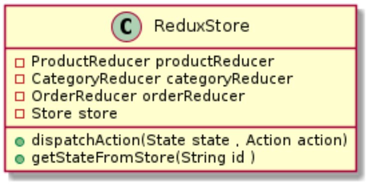
8.2 UI

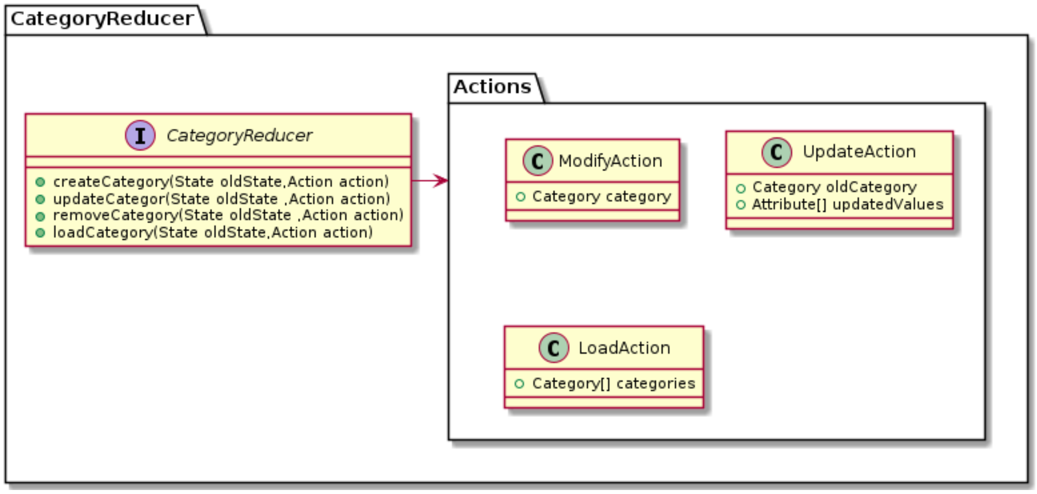
8.3 Application

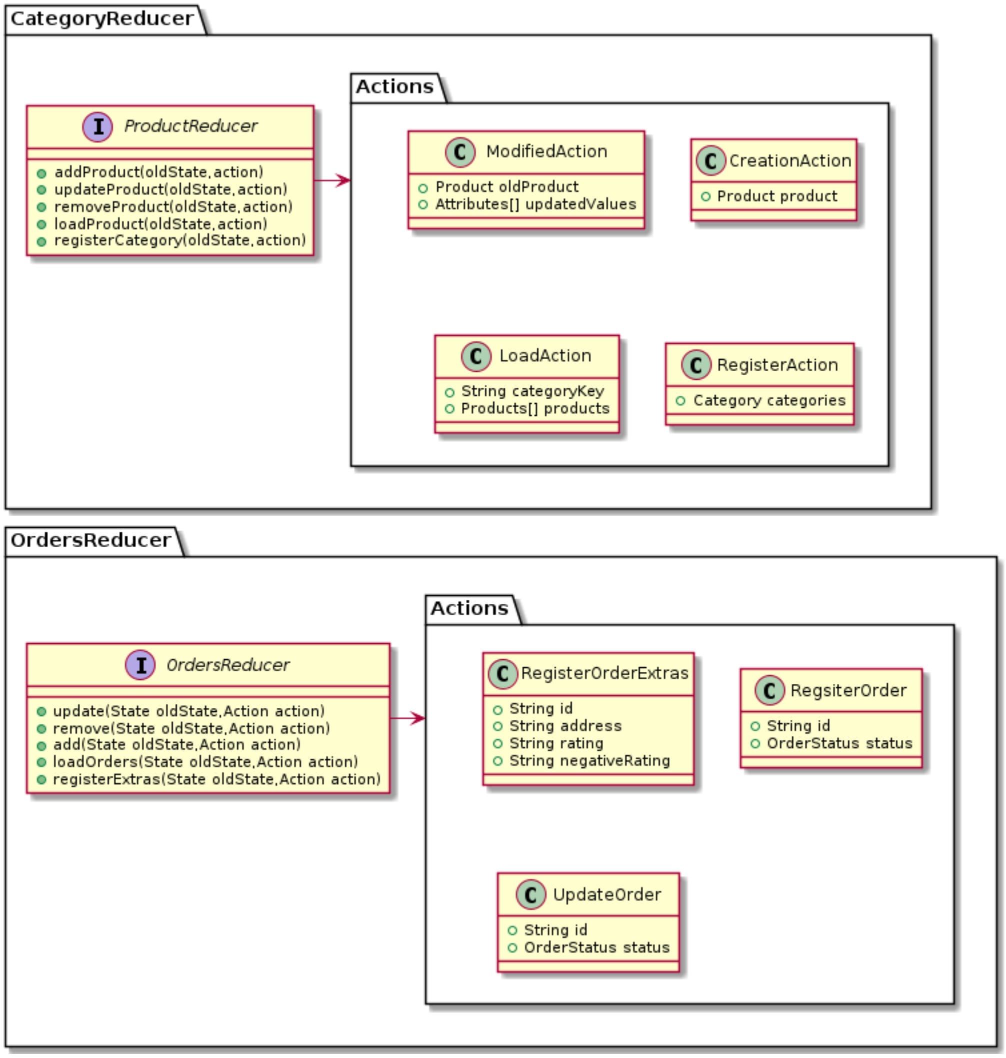
8.3.1 Attribute Cacher


AttributeCacher
CacheHelper
string targetAttribute
int attributesIndex
Array<Attribute> cachedAttributes
Map<String,int> attributesMap
void cacheAttribute(name:string , value:any , index:number)
Array<Attribute> getCachedValues()
void setTargetAttributes:(type: string)
void resetCache()
ICacheHelper
void cacheAttribute(name : string , value : any)
Attribute[] getCachedValues()
void setTargetAttributes(type : string)
void resetCache()

8.3.2 Redux Store


ReduxStore
ProductReducer productReducer
CategoryReducer categoryReducer
OrderReducer orderReducer
Store store
dispatchAction(State state , Action action)
getStateFromStore(String id)

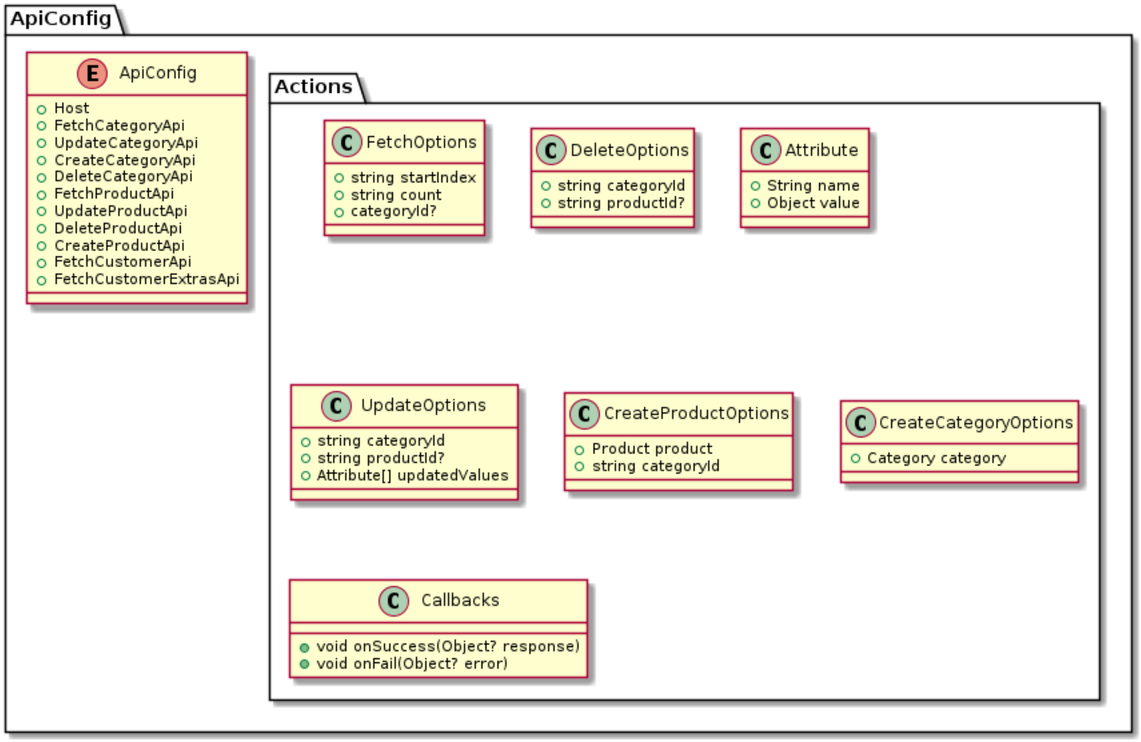

CategoryReducer
CategoryReducer
createCategory(State oldState,Action action)
updateCategor(State oldState ,Action action)
removeCategory(State oldState ,Action action)
loadCategory(State oldState,Action action)
Actions
ModifyAction
Category category
UpdateAction
Category oldCategory
Attribute[] updatedValues
LoadAction
Category[] categories


CategoryReducer
ProductReducer
addProduct(oldState,action)
updateProduct(oldState,action)
removeProduct(oldState,action)
loadProduct(oldState,action)
registerCategory(oldState,action)
Actions
ModifiedAction
Product oldProduct
Attributes[] updatedValues
CreationAction
Product product
LoadAction
String categoryKey
Products[] products
RegisterAction
Category categories
OrdersReducer
OrdersReducer
update(State oldState,Action action)
remove(State oldState,Action action)
add(State oldState,Action action)
loadOrders(State oldState,Action action)
registerExtras(State oldState,Action action)
Actions
RegisterOrderExtras
String id
String address
String rating
String negativeRating
RegsiterOrder
String id
OrderStatus status
UpdateOrder
String id
OrderStatus status

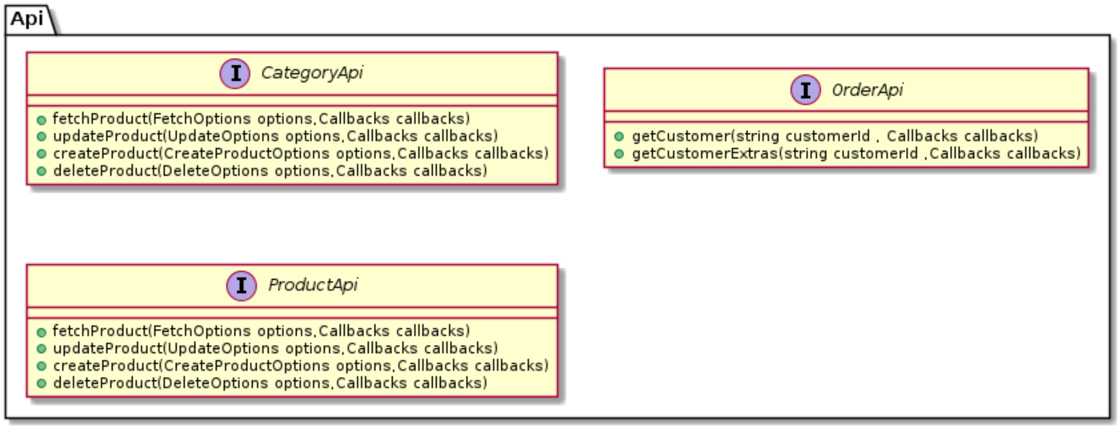
8.4 Domain

8.5 Infrastructure

8.5.1 ApiConfig



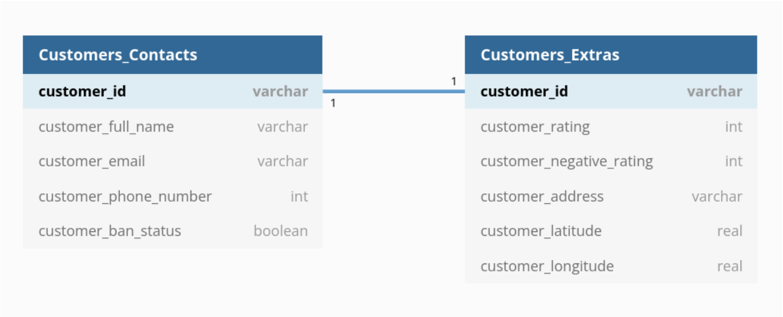
8.5.2 Api


Api
I CategoryApi
fetchProduct(FetchOptions options,Callbacks callbacks)
updateProduct(UpdateOptions options,Callbacks callbacks)
createProduct(CreateProductOptions options,Callbacks callbacks)
deleteProduct(DeleteOptions options,Callbacks callbacks)
I OrderApi
getCustomer(string customerId , Callbacks callbacks)
getCustomerExtras(string customerId ,Callbacks callbacks)
I ProductApi
fetchProduct(FetchOptions options,Callbacks callbacks)
updateProduct(UpdateOptions options,Callbacks callbacks)
createProduct(CreateProductOptions options,Callbacks callbacks)
deleteProduct(DeleteOptions options,Callbacks callbacks)

9 Shop node app

9.1 Project Structure

9.2 Customer Database



Customers_Contacts	
customer_id	varchar
customer_full_name	varchar
customer_email	varchar
customer_phone_number	int
customer_ban_status	boolean

Customers_Extras	
customer_id	varchar
customer_rating	int
customer_negative_rating	int
customer_address	varchar
customer_latitude	real
customer_longitude	real

9.2.1 Ban mechanism

In order to avoid bad customers a **ban mechanism** was placed where the owner would be informed of a customer **behavior score** and manage a blacklist to filter out his orders .
The ban mechanism uses a phone **IMEI number** to prevent a spammer from creating new accounts when banned .

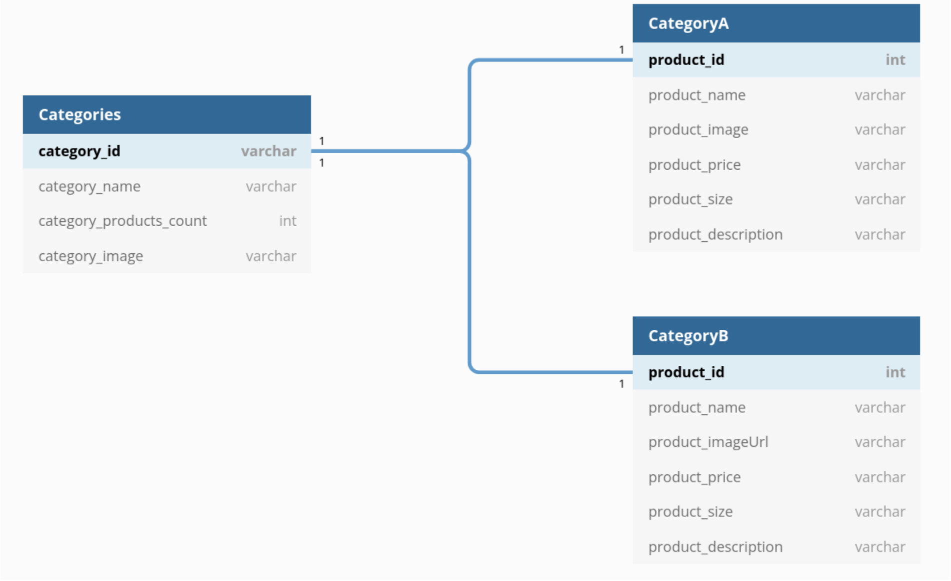
9.2.2 Optimising requests

Embeding delivery data in each order can introduce a **data usage overhead** thus to reduce it a customer delivery data are cached in the database.In which enables the server of retreiving it using only the **customer id** included in the order.

9.2.3 Explaining some keys

Rating represents the number of approved orders without issues while **Negative Rating** represents orders that weren't delivered in cause of a client fault or issue . This seperation is important in order to make a ban decision later on.

9.3 Product Database

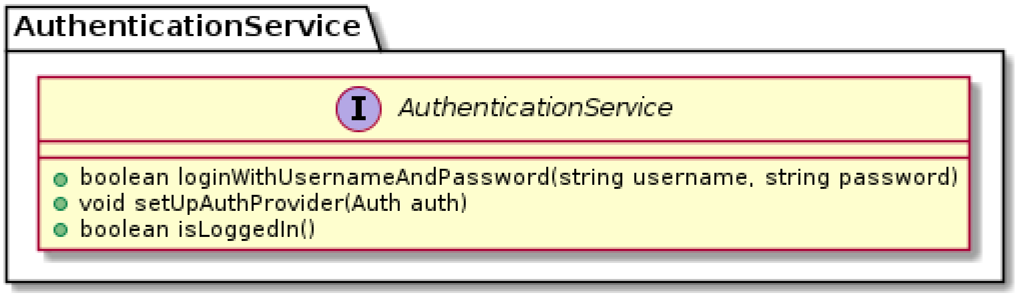


9.3.1 Explaining some keys

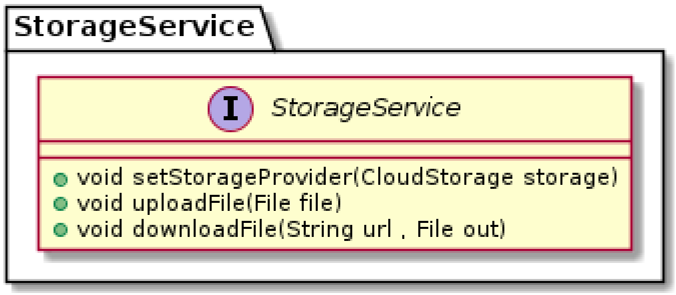
Categories Table holds records of categories metadata where each category-entry would have it's own **Category Table** that contains it's products .Thus each **category id** represents a table name in the database .
Product Count is important since it's used on the app product loader.

9.4 Infrastructure

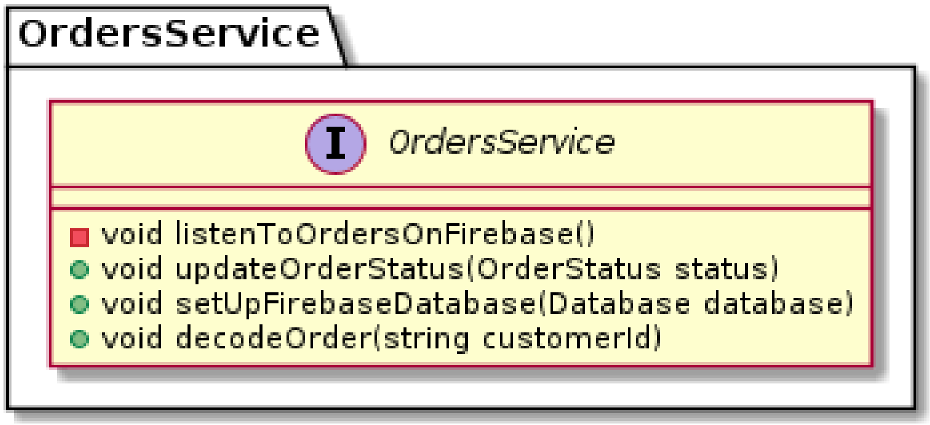
9.4.1 AuthenticationService


AuthenticationService
I AuthenticationService
boolean loginWithUsernameAndPassword(string username, string password)
void setUpAuthProvider(Auth auth)
boolean isLoggedIn()

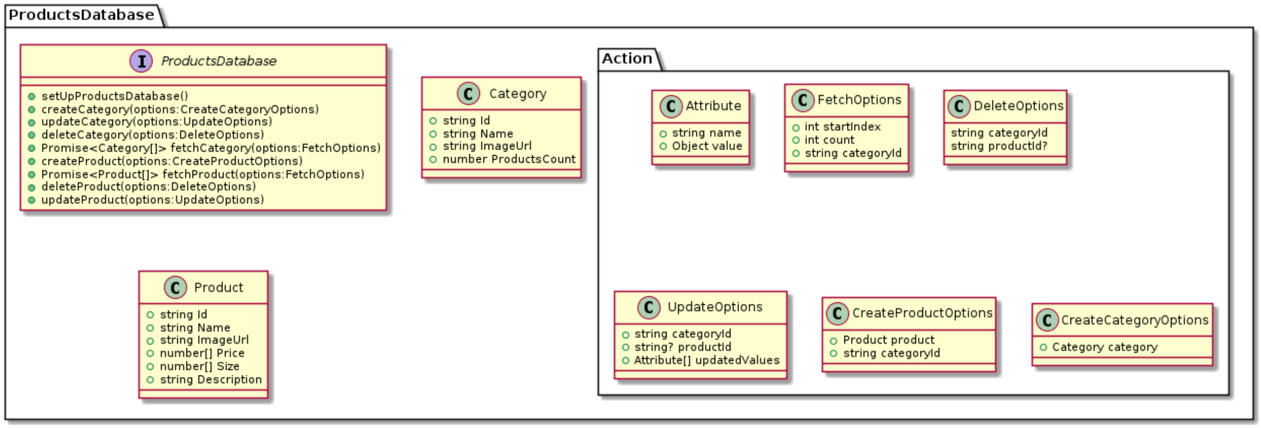
9.4.2 StorageService


StorageService
StorageService
void setStorageProvider(CloudStorage storage)
void uploadFile(File file)
void downloadFile(String url , File out)

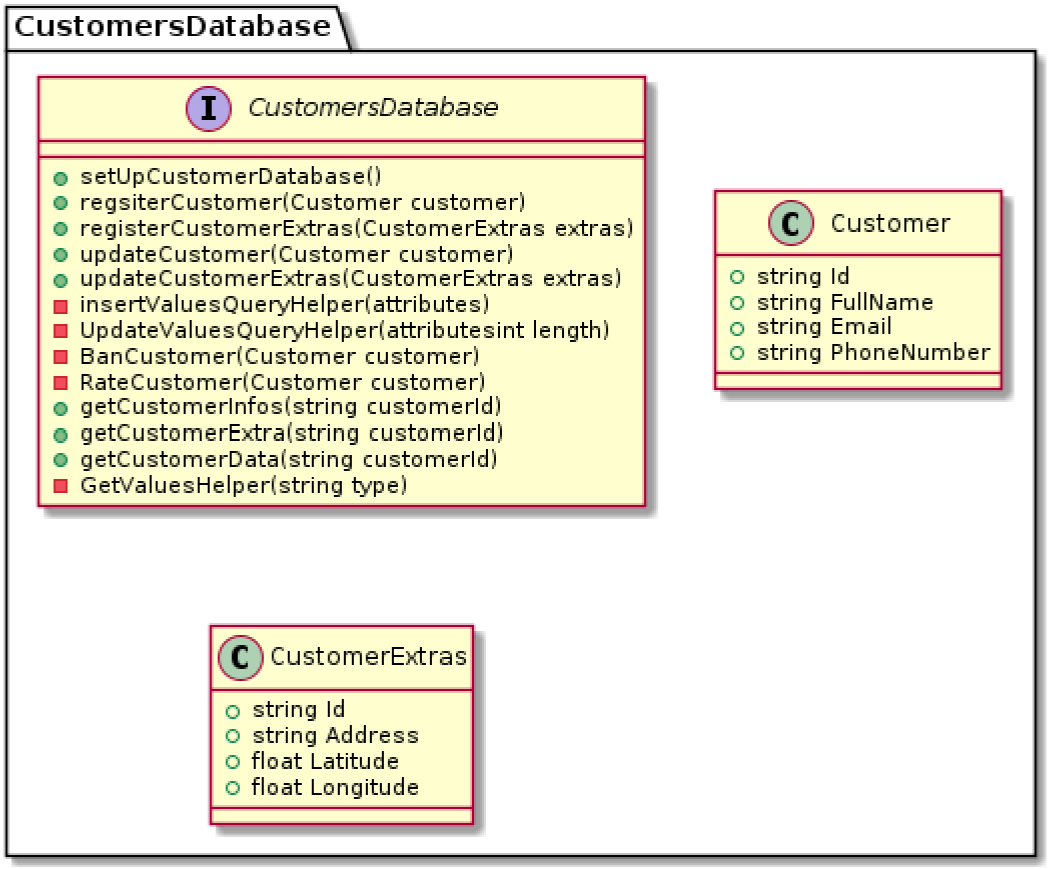
9.4.3 OrdersService


OrdersService
OrdersService
void listenToOrdersOnFirebase()
void updateOrderStatus(OrderStatus status)
void setUpFirebaseDatabase(Database database)
void decodeOrder(string customerId)

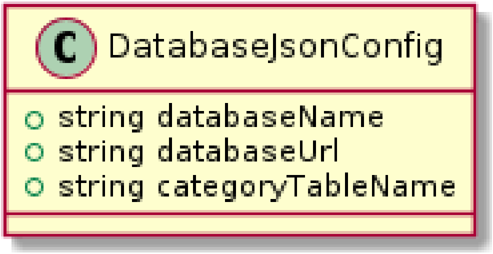
9.4.4 ProductsDtabase



9.4.5 CustomersDatabase


CustomersDatabase
I CustomersDatabase
● setUpCustomerDatabase()
● regsiterCustomer(Customer customer)
● registerCustomerExtras(CustomerExtras extras)
● updateCustomer(Customer customer)
● updateCustomerExtras(CustomerExtras extras)
■ insertValuesQueryHelper(attributes)
■ UpdateValuesQueryHelper(attributesint length)
■ BanCustomer(Customer customer)
■ RateCustomer(Customer customer)
● getCustomerInfos(string customerId)
● getCustomerExtra(string customerId)
● getCustomerData(string customerId)
■ GetValuesHelper(string type)
C Customer
○ string Id
○ string FullName
○ string Email
○ string PhoneNumber
C CustomerExtras
○ string Id
○ string Address
○ float Latitude
○ float Longitude

9.4.6 Configs



10 Installation

10.1 Dependencies

Install **Flutter** from the official webstie here
Install **Node package manager** from the official website here

10.2 Mobile App

Clone the project from github :

```
git clone https://github.com/IDIRYACINE/online_order_client
```

Navigate to the project directory and run flutter : **flutter run**

10.3 Node App

Clone The project from github :

```
git clone https://github.com/IDIRYACINE/online_order_server_nodeJs
```

Navigate to the project directory and run : npm start

10.4 React App

Install React by running : npm install react
Clone The project from github :

```
git clone https://github.com/IDIRYACINE/online_order_server_app
```

Navigate to the project directory and run : npm start

Part IV
Appendix

Test Driven Developement
Beck Kent - Test-Driven Development
Code Quality
Robert C. Martin - Clean Code
Martin Fowler - Refactoring: Improving the Design of Existing Code
Domain Driven Developement
Eric Evans - Domain-Driven Design: Tackling Complexity in the Heart of Software
Project Architecture
Mark Richards - Software Architecture Patterns
Design Patterns
Gang of Four Design Patterns
Alexander Shvets - Dive Into Design Patterns
Analysis Model
Martin Fowler - Analysis Patterns Reusable Object Models
GitHub
Scott Chacon - Pro Git