WEB APPLICATION DESIGN

CARSGUIDE.COM.AU

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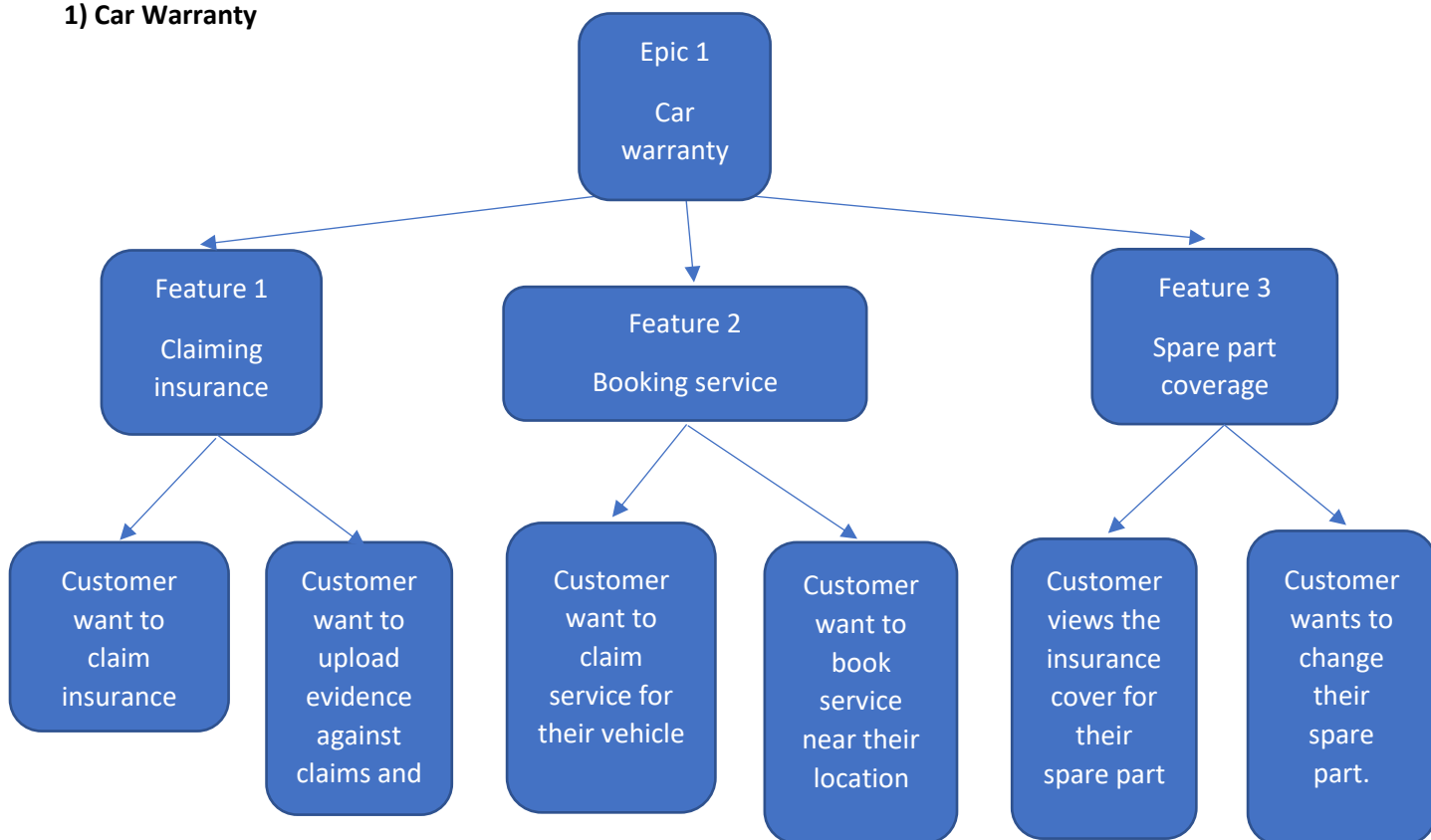[Email address]

1. Introduction

CarsGuide is an online car sales company that covers various aspects related to their customers. For those customers who want to buy a specific vehicle without any further confusion, CarsGuide is the perfect spot for them. CarsGuide is not only a platform to purchase a car but also provides the features/services to its customers.

Existing features of CarsGuide

- Buying/selling a car.
- Reviews for a specific model.
- Daily updates for cars.

Product backlog of CarsGuide

1) Car Warranty

```
                              Epic 1
                              Car
                              warranty

    Feature 1              Feature 2               Feature 3
    Claiming              Booking service         Spare part
    insurance                                     coverage

Customer    Customer     Customer    Customer    Customer    Customer
want to     want to      want to     want to     views the   wants to
claim       upload       claim       book        insurance   change
insurance   evidence     service for service     cover for   their
            against      their       near their  their       spare
            claims and   vehicle     location    spare part  part.
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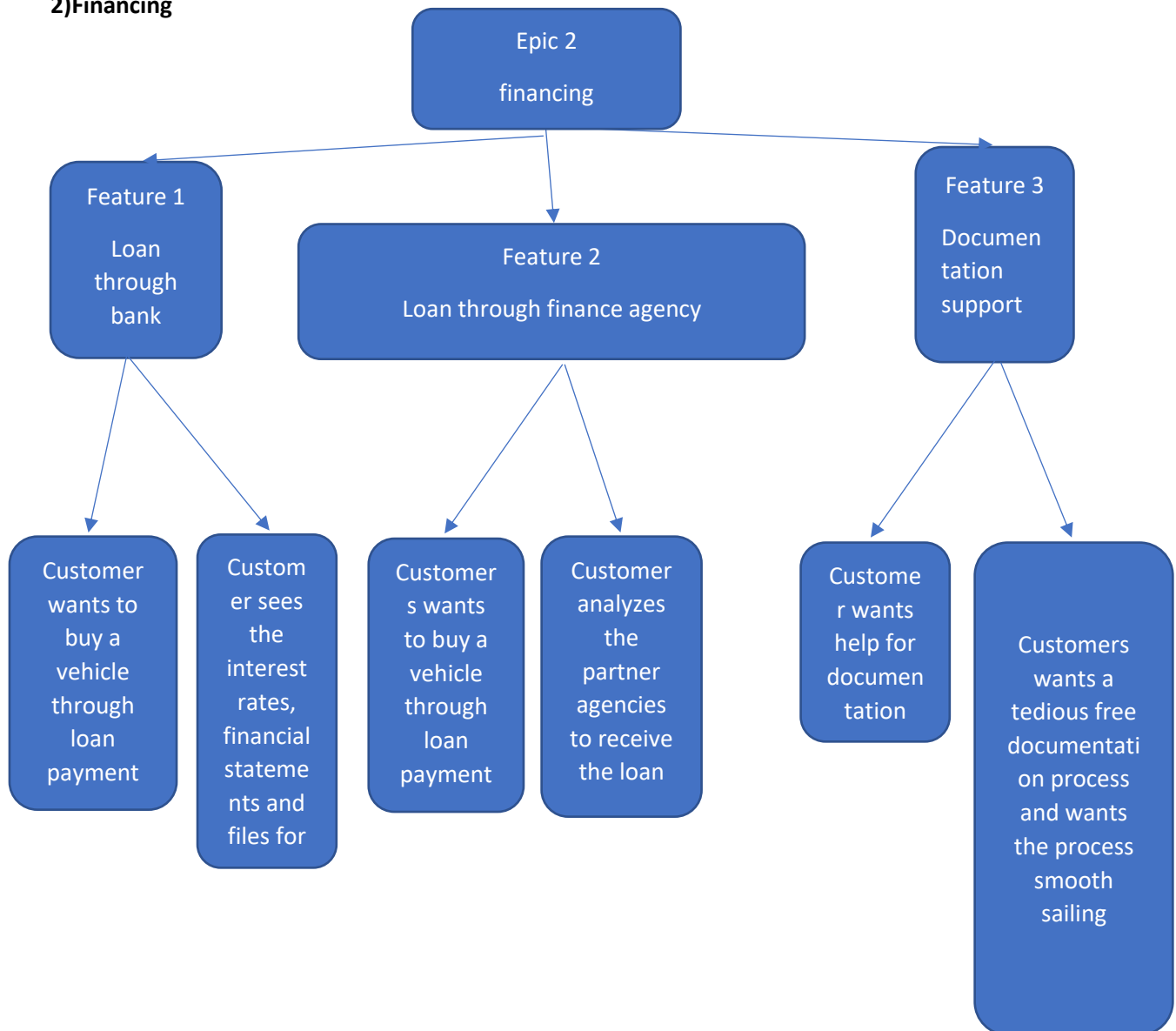
Overview

- Here the customer wants to claim the car insurance of his car against any future damages. One of the features of CarsGuide comes into existence and that is the common portal for claiming the insurance. The customer provides the valid authentication documents to the CarsGuide in-order to have the insurance claim.
- Now here the customer wants to claim for servicing the vehicle from CarsGuide. This is when the CarsGuide's servicing feature comes into light. The customer can freely locate and select the servicing centre from his/her nearest location. By deploying this feature, it does not save time but gives easy access to servicing their vehicle at their nearest location.

- CarsGuide provides a warranty portal in which the customers can easily view their spare part insurance coverage. The customer can easily add or deduct any spare part of his/her choice.
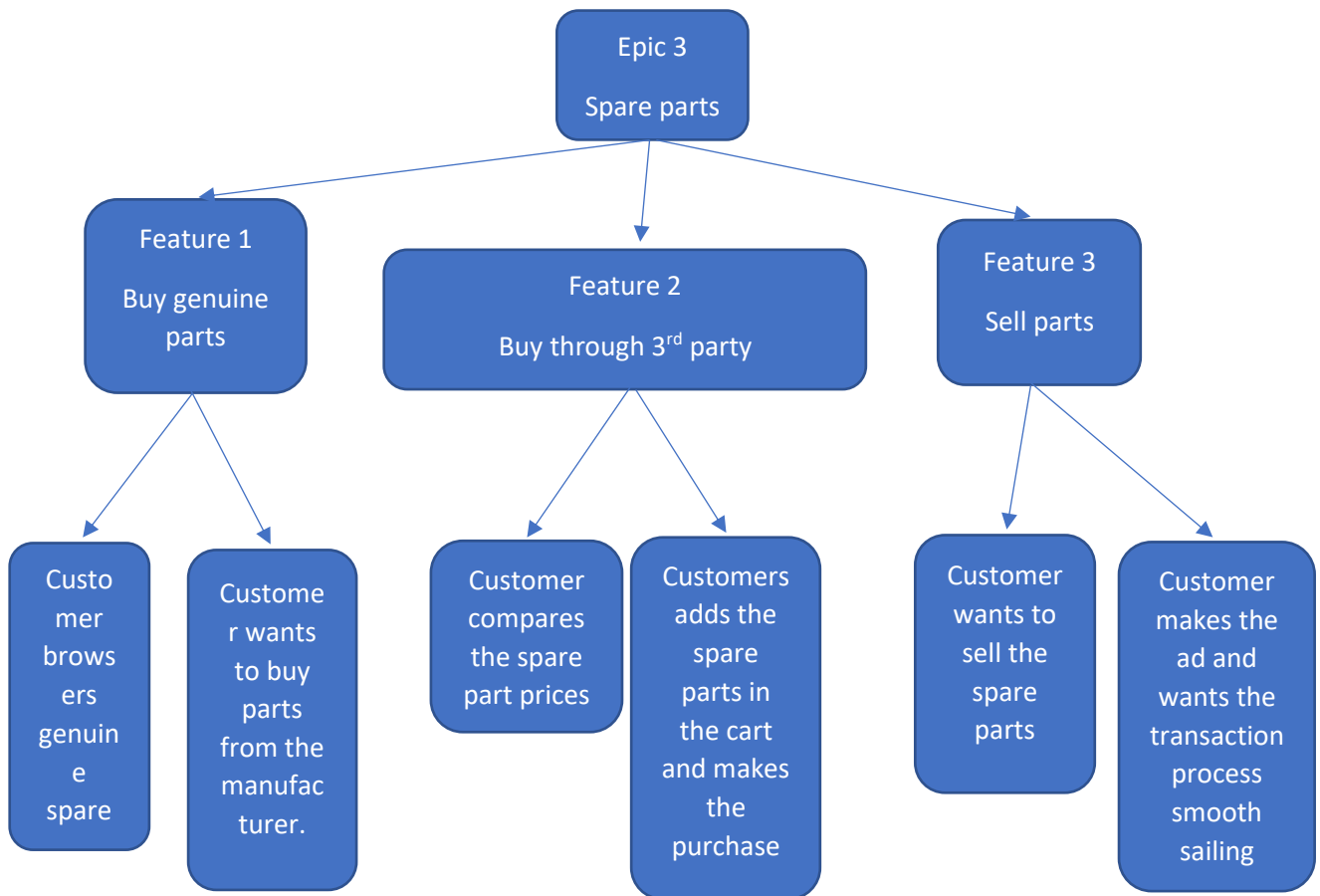
2)Financing

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                        ┌─────────────────┐
                        │     Epic 2      │
                        │                 │
                        │    financing    │
                        └─────────────────┘
```

Feature 1	Feature 2	Feature 3
Loan through bank	Loan through finance agency	Documentation support

| Customer wants to buy a vehicle through loan payment | Customer sees the interest rates, financial statements and files for | Customers wants to buy a vehicle through loan payment | Customer analyzes the partner agencies to receive the loan | Customer wants help for documentation | Customers wants a tedious free documentation process and wants the process smooth sailing |

Overview

- Here the partnership of CarsGuide with various banks comes into role. While purchasing a vehicle, the customer can easily have a look of various interest rates, financial statements of the bank for their loan payment.
- The customer can easily have an option to pass a loan through a financial agency. Before passing on the loan the customer analyzes the various partnering agencies with CarsGuide.
- The last and foremost thing is the documentation process. To ease out the process of documentation CarsGuide provides their personnel to help out their customers with the documentation process. This is not only effective but also keeps the tedious processes at bay.
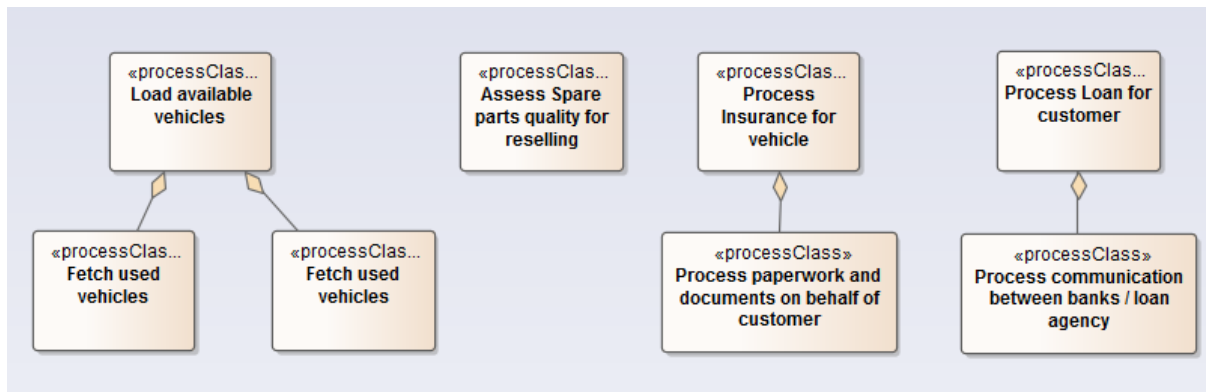
3) Spare parts

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                          ┌─────────────┐
                          │   Epic 3    │
                          │ Spare parts │
                          └─────────────┘
          ┌──────────────────────┼──────────────────────┐
   ┌────────────┐        ┌────────────────────┐    ┌────────────┐
   │ Feature 1  │        │     Feature 2      │    │ Feature 3  │
   │ Buy genuine│        │ Buy through 3rd    │    │ Sell parts │
   │   parts    │        │      party         │    │            │
   └────────────┘        └────────────────────┘    └────────────┘
```

| Customer browsers genuine spare | Customer wants to buy parts from the manufacturer. | Customer compares the spare part prices | Customers adds the spare parts in the cart and makes the purchase | Customer wants to sell the spare parts | Customer makes the ad and wants the transaction process smooth sailing |

Overview

- One of the attractive features of CarsGuide is the spare part portal. Here the customer can buy genuine spare parts from the manufacturers keeping the 3rd part vendors aside.
- The customer compares the prices of various spare parts and can easily add on and deduct the spare parts of his/her choice.
- Now the customer can easily sell their spare part on the CarsGuide website by an account. The customer can put on their ad for sale so that the interesting buyers get attracted towards it.
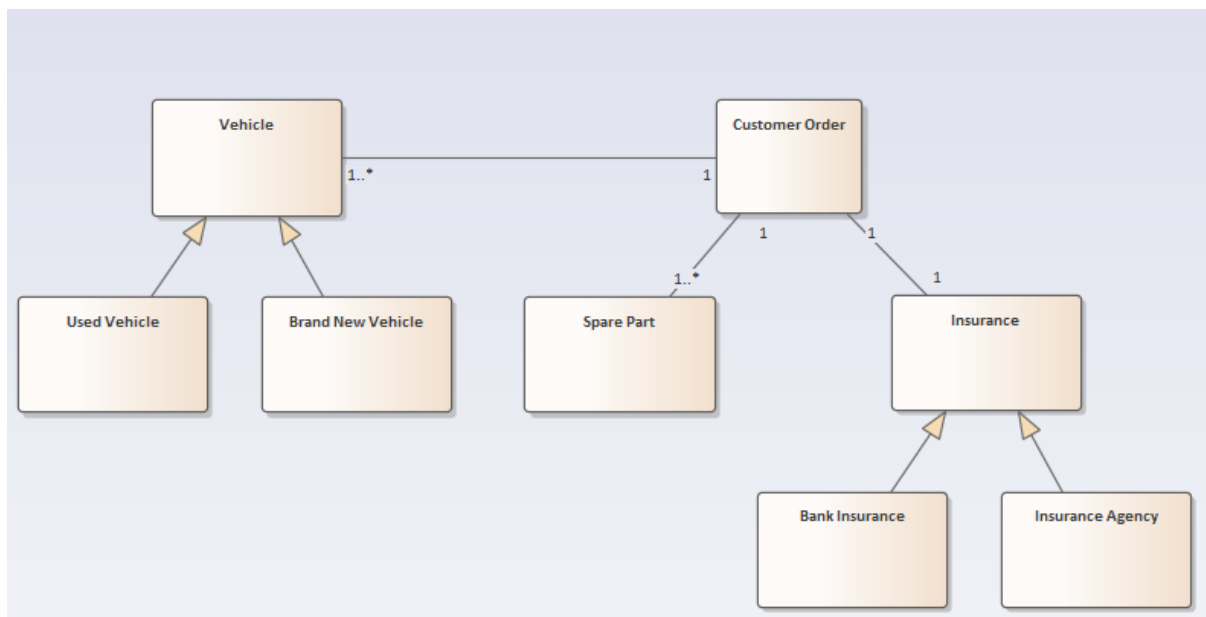
2. Project Design

Along with the assignment submission, the project design files for Enterprise Architect (.eap) were attached along with the UML profile for the CarsGuide project. Additionally, the diagrams were exported and attached to this document as illustrated below.
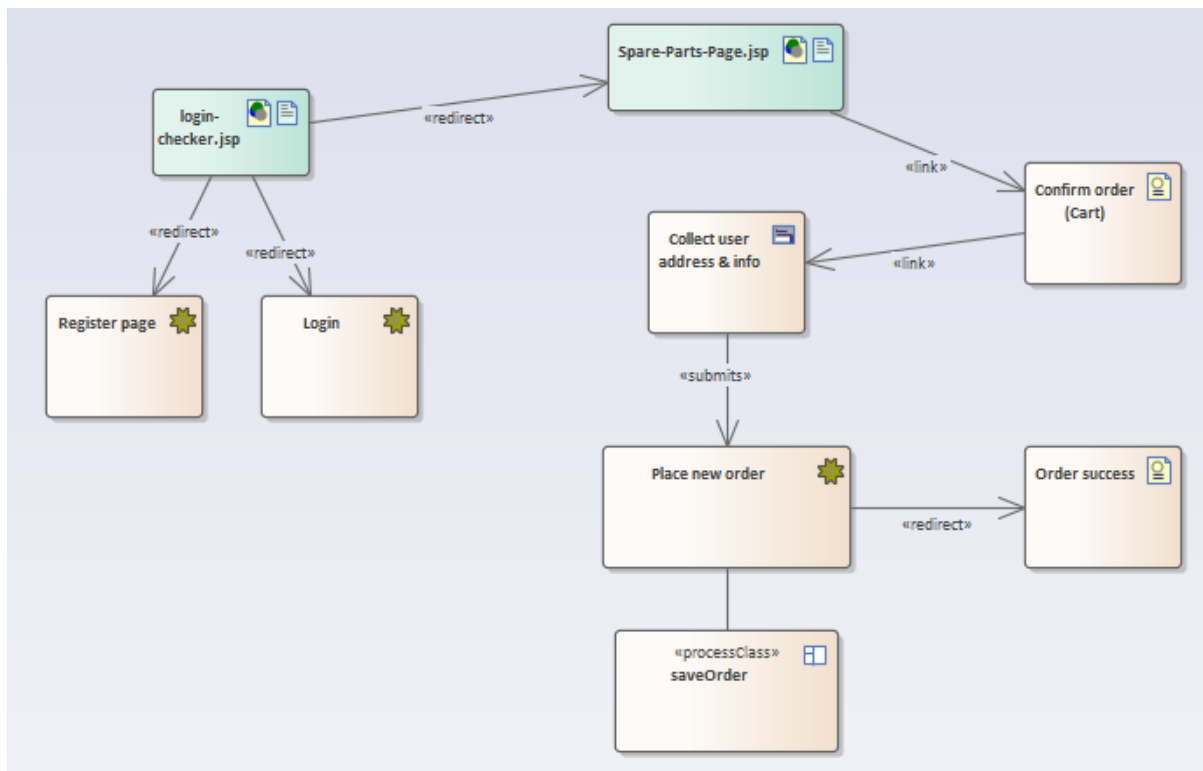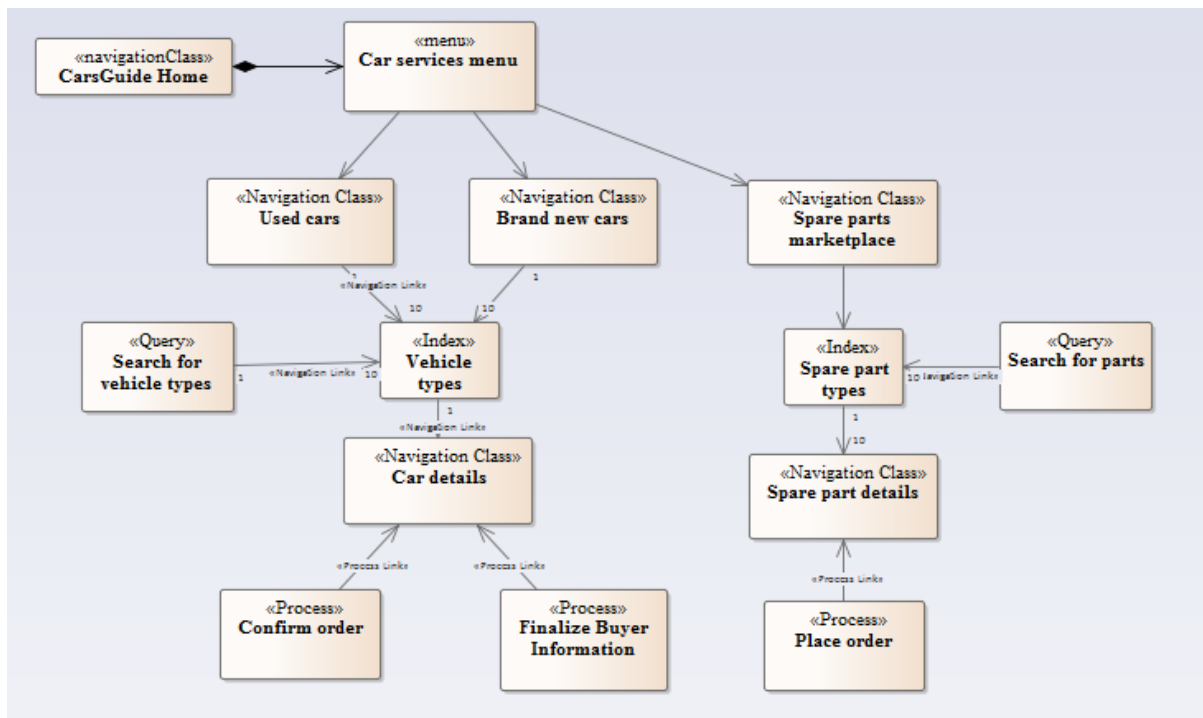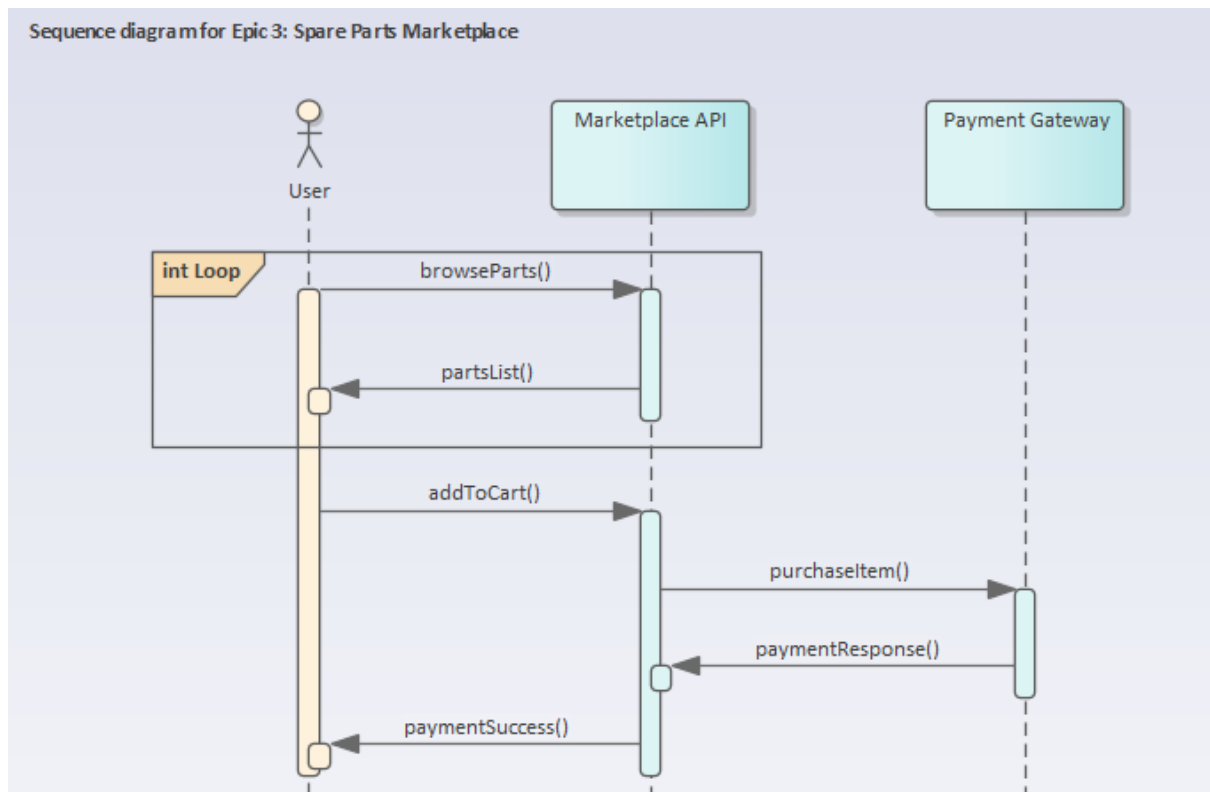
Process classes

Class relationships

Functional Design for Spare part purchasing (Epic 3)

Navigational Design for Car purchasing and Spare part purchasing

Sequence diagram for Spare part marketplace (Epic 3)

Sequence diagram for Epic 3: Spare Parts Marketplace

User — Marketplace API — Payment Gateway

int Loop
- browseParts()
- partsList()

- addToCart()
- purchaseItem()
- paymentResponse()
- paymentSuccess()

3. Product planning: Product Roadmap

	2020 – Q1	2020 – Q3	2021 – Q1
Market Map	Regular customers, Insurance agencies	Business clients, vendors, registered customers	Financial agencies, banks, corporate clients
Feature Map	Car insurance to customer's aid against repairs	Genuine and 3rd party spare part sales	Financing assistance for car purchase
Architecture Map	Ruby on Rails	AWS Database	OLTP and OLAP support for report generation
Market Event	Insurance camps and Referral programs	Digital marketing, Media announcement	Automobile expo
Release schedule	Version 1.0	Version 2.0	Version 3.0

(Rubin 2012; Pressman & Maxim, 2015)

4. Sprint planning and spring backlog

- Sprint planning

Sprint Goals

Release	Sprint goals
Version 1.0	Enable insurance agency registrations
	Support insurance claims
Version 2.0	Enable mass ordering for spare parts
	Support spare part advertisement
Version 3.0	Support Monthly user report generation
	Enable EMI for car purchase

(Rubin 2012; Pressman & Maxim, 2015)

Capacity Determination

Total sprint days: 30

Team member	Available days (Time off excluded)	Days for other scrum activities	Actual Available days	Hours per day	Available effort hours
Chandler	28	3	25	6-8	150-200
Ross	28	3	25	6-8	150-200
Monica	30	5	25	6-8	150-200
Rachel	25	3	22	6-8	132-176
Joey	25	3	22	6-8	132-176
Phoebe	28	3	25	6-8	150-200
Total					864-1152

(Rubin 2012; Pressman & Maxim, 2015)

- Sprint backlog

Epic	Features	PBIs in the product backlog	Task breakdown of PBI			Effort hours
Car warranty	Insurance	View insurance(3 points)	Create User DB schema(60 hours)	Document upload in DB (30)	Create a related class (60 hours)	150
		Claim insurance(5 points)	Create Icons(40 hours)	Create claim request and process scripts(60 hours)	Create document upload interface(40)	140
	Car servicing	Book service(5 points)	User interface animations(60 hours)	Create graphics for booking(50 hours)	Processing script for service stations(50)	160
		View nearby service stations(3 points)	Insert available service stations list(50)	User location services(50 hours)	User testing(40 hours)	140
	Spare parts cover	Partial payment for spare parts(8 points)	Create list of spare parts(60 hours)	Update scripts for database(80 hours)	Automate acceptance test(50 hours)	190
		Order change in spare parts(8 points)	Script for ordering(60 hours)	Script for order processing(80)	Update GUI(80)	220
					Total hours = 1000	

(Rubin 2012; Pressman & Maxim, 2015)

5. Summary

The report utilizes different design aspects for web development and effectively uses them to realize design sprints and plan. With deep analysis and research on the company, we came up with a step-by-step solution to make the company website more customer friendly with some unique services being deployed.

Features deployed on the website are as follows:

- Claiming of insurance.
- Booking of the service at a nearby location.
- Coverage of the spare parts for customers.
- Payment through a loan with partnered banks.
- A loan through the financing agency.
- Documentation support provided by the company.
- Buying of genuine spare parts.
- Buying spare parts through a 3rd party vendor.
- Selling of spare parts through the company itself.

Solutions

The report mainly focuses on building business and penetrating new market features/services to make it more attractive for the customers. By implementing these features will not only improve the quality of the website but also will lead the company to cover the large market share compared to its rivals.

Whether there are some problems to be solved in the future

Although the report covers important aspect required to keep up with the market and reduced competitive advantages for rivals, there is scope to add new services such as roadside assistance, 24*7 on-call support etc. to increase customer retention.

References

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Rubin, K. S. 2012, Essential Scrum: A Practical Guide to the Most Popular Agile Process, Addison-Wesley Signature Series (Cohn), Addison-Wesley Professional, Upper Saddle River, NJ, viewed 2 September 2019, <http://search.ebscohost.com.ezproxy-b.deakin.edu.au/login.aspx?direct=true&db=nlebk&AN=1599362&site=eds-live&scope=site>.

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