SOFTWARE TECHNICAL SPECIFICATION

PROJECT NAME: ECO Transport

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Version 0.0.2

REVISION HISTORY			
DATE	VERSION	DESCRIPTION	AUTHOR
25/12/2019	0.0.1	Project Description	Muath Baino
1/1/2020	0.0.2	Technical Documentation	Muath Baino

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INTRODUCTION

PURPOSE

ECO Transport is a e-bike online store, its goal is to maintain a healthy lifestyle and a clean environment, helping to reduce traffic and traffic pollution. By offering a wide variety of e-motored-bicycles, making everyday trips joyful and easy.

INTENDED AUDIENCE AND PERTINENT SECTIONS

Our e-bikes suites kids & adults, all family members can enjoy their rides with our products. The website will be tested by a group of developers who are well trained at Orange Coding Academy. For the marketing, it is planned to be throuthout YouTube and Facebook.

PROJECT SCOPE

We are looking to bring an alternative yet practical transport, and with our products, our customers will experience joyful times, maintain a healthy lifestyle, and contribute in pollution reduction.

A person can ride his/her e-bike to anywhere, anytime, effortlessly thanks to the electric motor which can be set to be fully pulling the bike, or partially assisting the rider, with its Pedal Assist Control system.

DOCUMENT CONVENTIONS

E-bike: A bicycle equipped with an electric motor. Which is our main product.

PAC: Pedal Assist Control system, this system creates balance between pedalling, and motor engagement. And can be fully controlled by the biker, in terms of ratios, from 0 to 100% for the e-motor.

Accessories: Any part which can be added to the e-bike, and has a certain functionality.

Apparel: biking clothes, helmet, gloves, ..etc.

DESCRIPTION

PRODUCT PERSPECTIVE

Our products are not made by our team, we pick our e-bikes according to our high standerds, every bike comes a powerful motor, a high capacity battery, and with 1 year warranty. The customer can contact us by phone or e-mail and report the issue.

FEATURES

Motor power is ranged between 500 and 3000 Watt, and comes in two shapes:

1- mid motor: The most advanced and powerful motor of it's kind on the market. Beautifically compact and packing from a whopping 500W and 120Nm of torque and beyond, this workhorse is a serious performer. Using the bikes gears, it achieves optimum hill climbing, range, and speed.

2- Hub motor: The motor comes in the front or rear wheel hub, it requires almost no maintenance. It's an entirely independent drive system that retain all of their components inside the motor casing. Gearless hub motors, have zero moving parts aside from their bearings, so there is basically nothing to wear out. also it has a great torque.

USER OVERVIEW

A customer simply can be anyone. Whoever can ride a bicycle, can ride our e-bikes.

OPERATING ENVIRONMENT

Our website will work perfectly on any device. It's responsive and compatible with PC, laptops, tablets, and mobiles. As well as all operating systems, no setups or software required to use our website.

CONSTRAINTS: IMPLEMENTATION / DESIGN

This is our biggest project by far, we have already built a similar yet smaller systems, but the stakes are high now. Bigger database, variant functionalities, more components.. It will be challenging to build such system, but we are willing to make it.

DOCUMENTATION

The website will contain mainly e-bikes, as well as accessories & Apparel.

Delivery will be done via shipping companies.

Free shipping world wide, but incase a customer wanted to return a product which has no defect, he/she will get a full refund for the product, and will be charged for shipping fees.

During warranty period, the customer will not be charged for shipping, and the product will be shipped to the manufacturer for maintenance.

SYSTEM FEATURES

SYSTEM FEATURE 1

DESCRIPTION AND PRIORITY	Ease of use and simple design.
STIMULUS / RESPONSE SEQUENCES	Users will experience easy and interesting touring in the website, and a few steps to purchase our products.
FUNCTIONAL REQUIREMENTS	CSS, Javascript.

SYSTEM FEATURE 2

DESCRIPTION AND PRIORITY	Great deals and privileges.
STIMULUS / RESPONSE SEQUENCES	Customers will get privileges such as free shipping, warranty, special deals, product customizability, and more.
FUNCTIONAL REQUIREMENTS	Javascript, API, MongoDB.

REQUIREMENTS OF EXTERNAL INTERFACE

USER INTERFACES

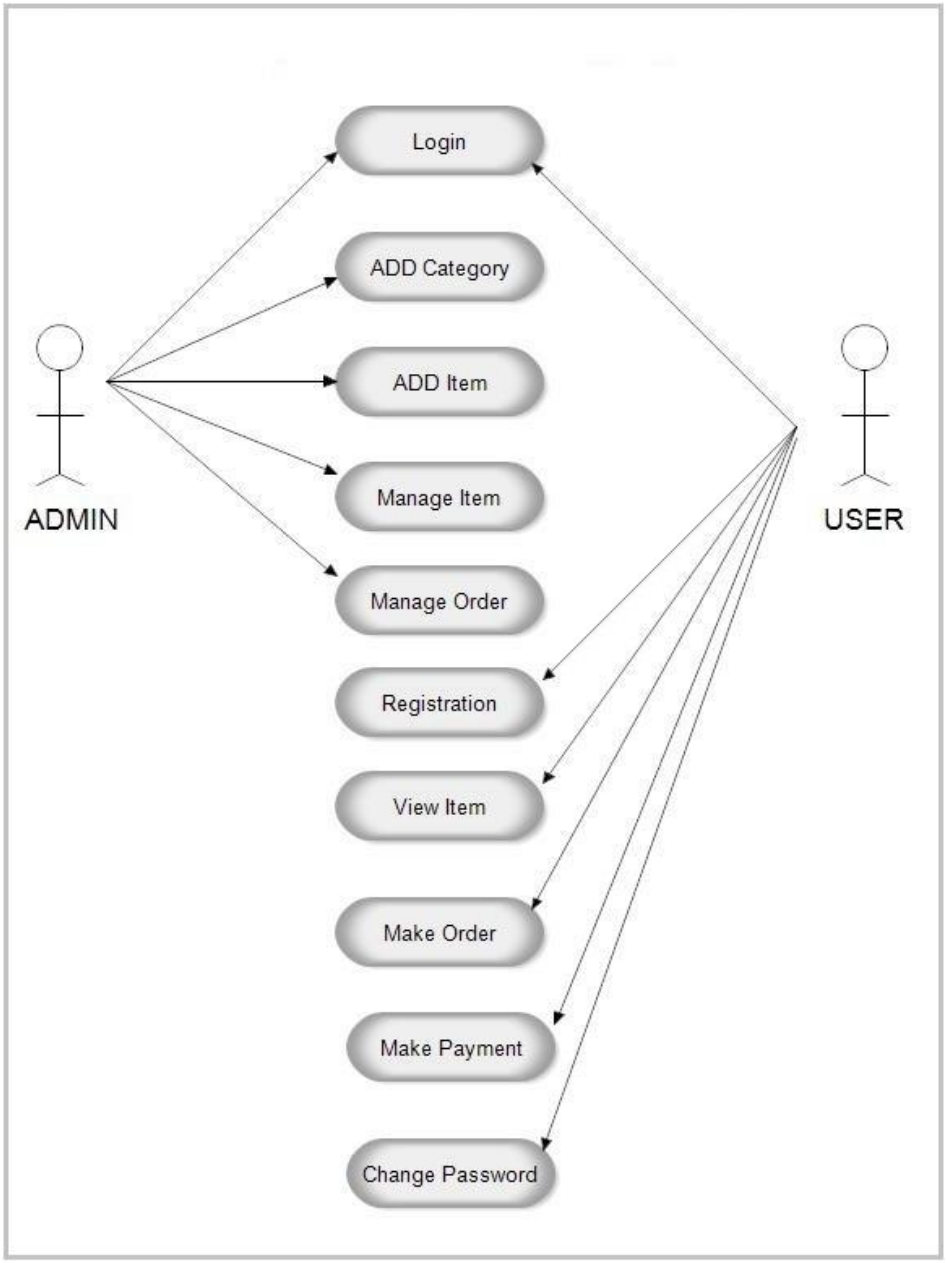
Product:

Our products comes in packages, a package contains catalogs with the product.

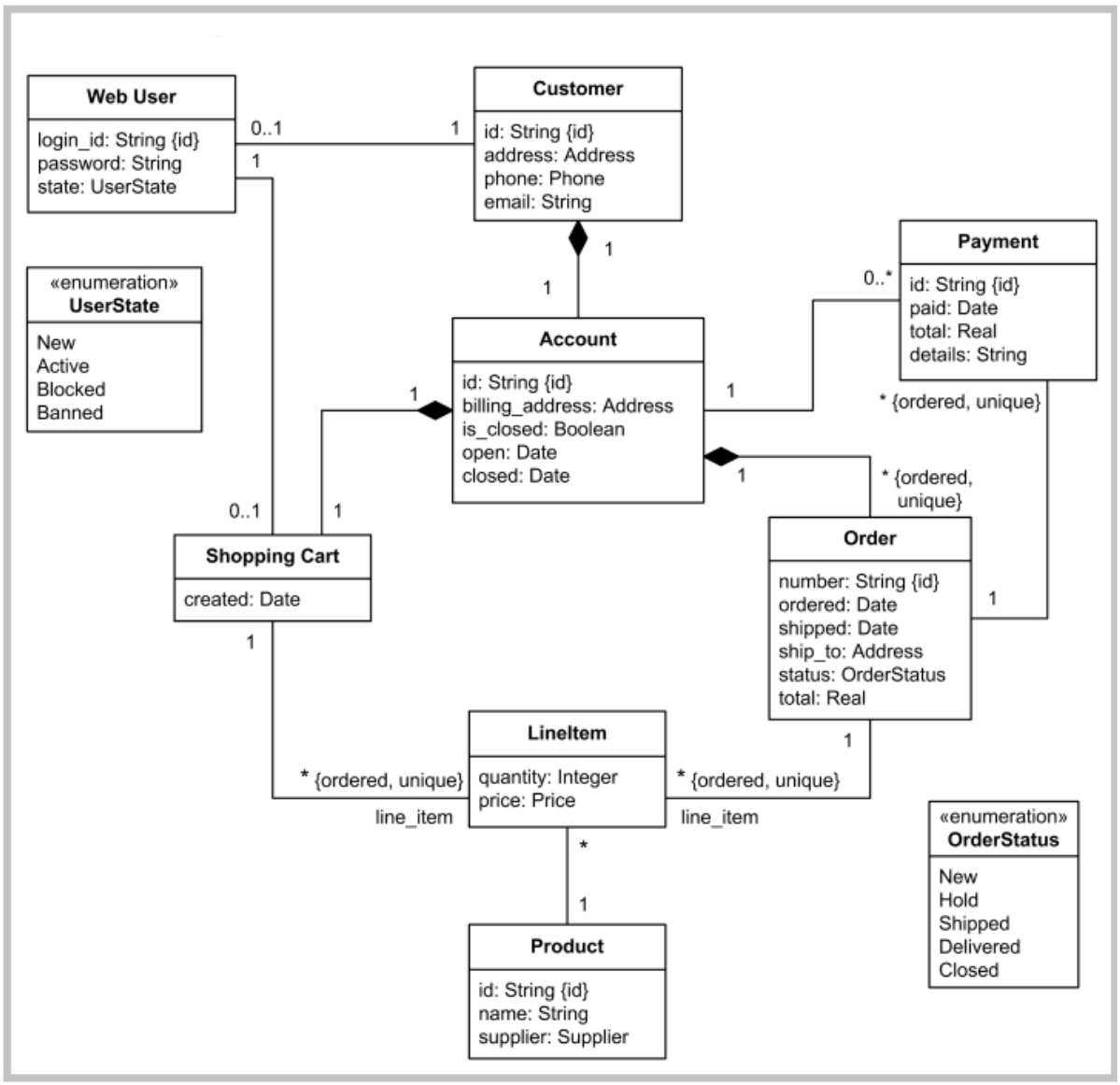
User Interface:

Characteristics: familiarity, attractive and responsive design.

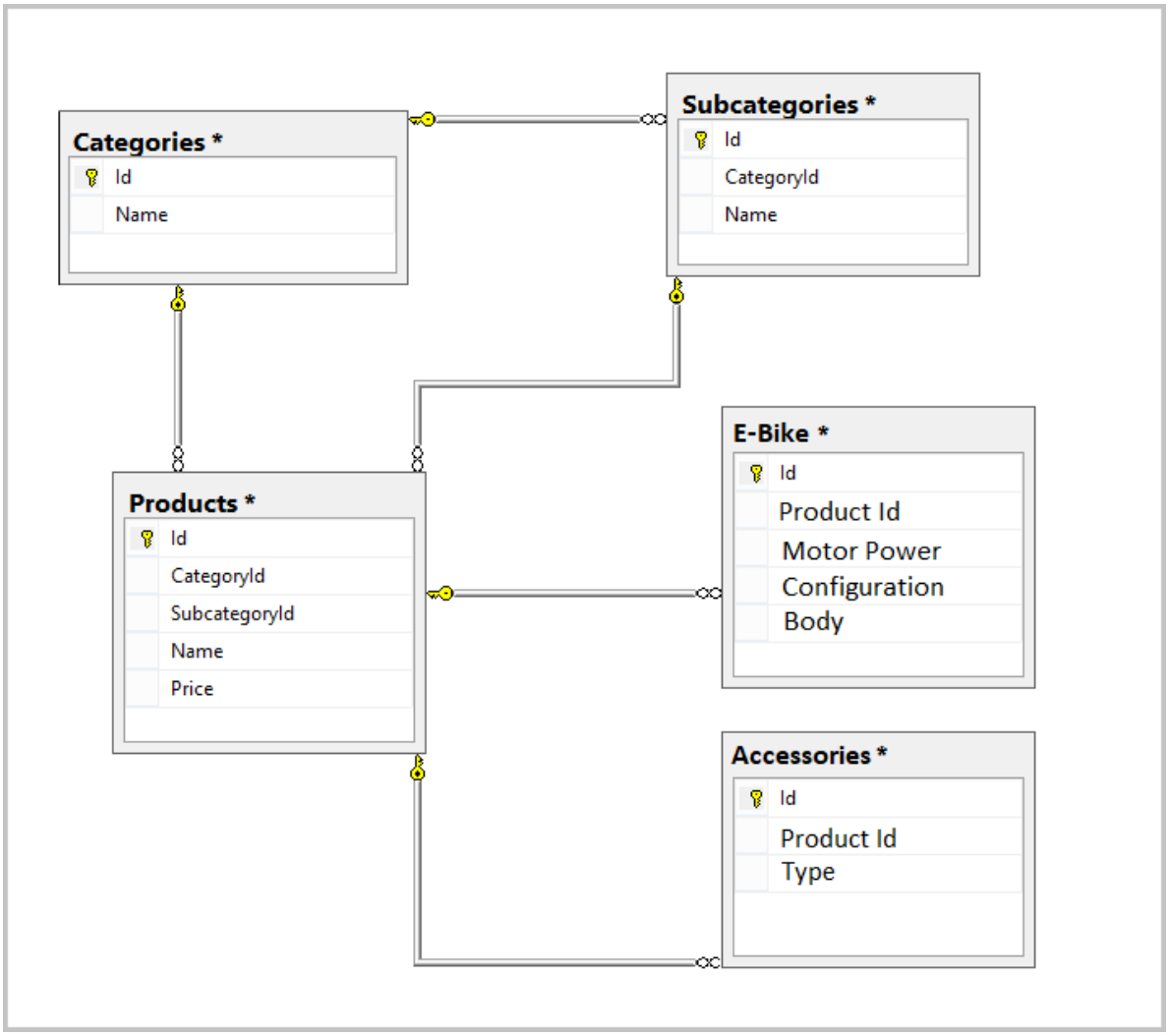
Use Case Diagram


Login
ADD Category
ADD Item
Manage Item
Manage Order
Registration
View Item
Make Order
Make Payment
Change Password
ADMIN
USER

Class Model



Database Design



HARDWARE INTERFACES

No special hardware characteristics or specifications required, Any device that browse the internet, it runs our website.
Communication protocols: FTP, HTTPS.

SOFTWARE INTERFACES

Interface characteristics: Familiar, Responsive, Attractive, Efficient.
Technologies used: MERN stack.

COMMUNICATION INTERFACES

Communication functions required: email, simple forms.

ADDITIONAL NONFUNCTIONAL REQUIREMENTS

1. Employees never allowed to update their salary information. Such attempt should be reported to the security administrator.

2. Every unsuccessful attempt by a user to access an item of data shall be recorded on an audit trail.

3. The software is portable. Moving from one OS to other OS does not create any problem.

4. Privacy of information, the export of restricted technologies, intellectual property rights are audited.

APPENDICES

APPENDIX : GLOSSARY OF TERMS

E-bike: A bicycle equipped with an electric motor. Which is our main product.

PAC: Pedal Assist Control system, this system creates balance between pedalling, and motor engagement. And can be fully controlled by the biker, in terms of ratios, from 0 to 100% for the e-motor.

Mid motor: the motor is positioned directly in between the pedals at the bike's bottom bracket. This ensures a low and central center of gravity, providing load

balancing and creating the feeling of riding a traditional bike. Riders don't feel the additional weight of the motor because of where it is positioned, giving a mid-drive eBike solid directional and tracking stability.

Hub Motor: the motor is positioned on the front or rear wheel, with the motor placed handily in the wheel hub. The motor provides propulsion by spinning the tire on which it is mounted.

Accessories: Any part which can be added to the e-bike, and has a certain functionality.

Apparel: biking clothes, helmet, gloves, ..etc.