1. **Introduction**
   1. **Background of the Problem**

Solar Industries is owned and operated by Mr. Andrew D. Choi, the current factory and headquarters are situated along the Capistrano road. The company mainly manufactures bags; sports bags, backpacks, laptop bags, luggage bags, except for ladies’ bags. They also sell belts and souvenir items, do customized t-shirt printing for conventions and seminars. The brands which were manufactured by the company are Champ and Racini.

The company has consignment basis in retail and department stores. However, due to the influx of local and foreign competitors in the same field, they are currently experiencing decrease in sales. They are looking for ways to recapture their former niche in the market during the early years of the company. The company recognizes the emerging industry that the e-commerce had provided. The company is looking into ways to enter the e-commerce industry.

E-commerce or Electronic Commerce has become one of the few methods of delivering products and services to customers. As the name of the technology implies, it is the exchange (buying and selling) of products and services is conducted through electronic systems such as the Internet and other computer networks. Such technology is beneficial to any commercial businesses alike as the technology in this day and age is inclined to move through the sphere of the World Wide Web.

* 1. **Overview of the Current State of Technology**

The company made efforts to reach out to the market, they had strengthened their marketing campaigns by hiring famous personalities to model their products. The sales went up shortly, but continually decreased after the campaign. The company tried to expand and consign in more department stores but due to local and foreign brands being more recognized by buyers, the sales are still low.

The company single-handedly ships and delivers their products to the department stores where their products are consigned in. Due to restrictions in logistics, the delivery to the department stores are often delayed, should the company employ the services of a forwarding company, the delivery to the department stores would be efficient and on-schedule.

The company frequently experiences customers looking for a particular design they wanted to buy but are currently not available for display. This is due to the reason that department stores limit the items for display for a particular brand and company, and also storage costs at department stores consigned are getting expensive after a month’s period if the item is not sold. If a customer orders a particular model of an item, a lengthy process has to be undergone. The customer addresses her request to the saleslady and leaves a contact number with the request. The saleslady then relays the request to the sales supervisor, the supervisor contacts the company if the particular model is available. If available, the company’s representative contacts the customer first-handedly and informs the customer on the method of payment, shipping costs and the estimated time of arrival for the item to reach from the warehouse to the customer. This lengthy process is tedious and time consuming, an e-commerce website will simplify the process for both the company and the customer as the estimated time of arrival, shipping cost and method of payments is already known beforehand.

Furthermore, the company recognizes the need to keep with the current trends and technology in the business world. E-commerce provides Solar Industries an avenue to participate in the emerging online market for the company to be able to sell and promote their products online.

* 1. **Project Rationale**

Company

* An E-Commerce website would be ideal tool for the company to reach potential buyers in the buyers in the market. The E-commerce is the best solution for the company’s needs, as they are looking into new ways to sell their products online.

Online Buyers

* An E-Commerce website is also beneficial to online marketers as it simplifies purchase of products as the website would feature a wide range of models to choose from, not limited to the displays in malls, the e-commerce website is available 24/7 this allows customers to buy Solar Industries’ products at their own time and convenience.

1. **Project Description**

**2.1 Problem Statement**

Major

* To be able to sell and promote Solar Industries’ products online.

Minor

* To develop an effective e-commerce website for Solar Industries.
* As developers, the effectiveness of the website in every aspect and function is highly prioritized.
* To be able to develop a secure e-commerce website for Solar Industries.
* Security is one of the top priorities of developers, a secure website mirrors the integrity of the company, and it is also beneficial to buyers and crucial to the company.

**2.2 Proposed Research Project**

**2.2.1 General Objectives**

To be able to create an E-commerce website for Solar Industries.

**2.2.2 Specific Objectives**

* Create a module for Ordering
* This module allows the fetching of product number and contact details of the customer, this will be stored in a database. The Order Processing Representatives will in turn process the order, checks the status of the payment and keeps the order in check, ready to be sent to the a courier service company to be sent to the customer.
* Create a module for Sales and Inventory
* This module shows the Manger the online sales of the company and the inventory of the stocks left in the warehouse reserved for online purchase.
* Create a Login module for the Administrator, Manager, and Order Processing Representatives.
* This module maintains the hierarchal level of security for the Administrator, Manager and Online Processing Representatives.
* Create a module for Payment methods.
* This module processes the payment methods of customers.

**2.2.3 Scope and Limitation**

1. **Scope**

* **Sales Module**
* This module monitors online sales of the company.
* **Inventory Module**
* This module monitors the inventory of the stocks in the warehouse to be sold online.
* **Payment Method Module**
* This module caters the payment methods for customer purchases.
* **Ordering Module**

**-** This module caters orders from customers.

* **Security Module**
* The website features security for online payment of customers.
* **Login & Logout Module**
* This the method where Administrator, Manager and Online Processing Representatives can get different access levels of the website

1. **Limitation**

* E-commerce involves a broad spectrum of topic, below are specific topics that are involved with e-commerce but are not included in the proposed e-commerce website of the proponents.
* **Online Auction**
* **Online Wallet**
* **Comparison Shopping Website**
* **Trading Communities**
* The inability to access the system without the internet connection.

**2.2.4 Methodology**

**Inquiry Method**

* Preliminary interview with the Solar Industries owner, Mr. Andrew D. Choi
* This is done to be able to directly know the current problems of the company, and question inquire about data and information relevant to the construction of the system.

**Data Gathering Method**

* Online Research Method
* This is done to be able to study and know more about the modules contained in common e-commerce websites.
* Determine the current technologies to be used in the construction of the e-commerce website.

1. **Project Management**

3.1 Calendar of Activities

3.1.1 Description of Activities

The following are the tasks to be accomplished by the proponents to compete the project:

1. Data Gathering

- Data gathering is one of the most important factor in constructing the e-commerce website. The first week of July will be allotted for this phase of the study. The proponents will conduct an interview with the company owner, Mr. Andrew D. Choi. The proponents will ask sensible questions that could possibly answer the current inherent problems of the company.

1. Requirements

- The gathering of requirements phase is scheduled to occur in the 2nd week of July. This is the phase wherein the proponents would determine the resources needed by proponents and the company for the e-commerce website to be built. This is done through the research in the World Wide Web for the current technologies, frameworks and APIs used by commercially deployed e-commerce websites. Online articles are also used as references to determine the current trends in the e-commerce industry. Open-sourced frameworks, APIs and Source codes will also be used and gathered in this phase.

1. Design

- The design phase is where all the system-related design will be implemented this is scheduled in the 3rd week of July. The proponents will use an open-sourced Php framework, Codeigniter, to build the e-commerce website. All the modules will be designed in this phase.

1. Implementation

- The implementation phase is where all the system construction is done, the modules are to be made using the Codeigniter Php framework, and so as other open-sourced third-party APIs for online payment. This phase is scheduled to occur in the 4th week of July until the 4th week of August.

1. Verification

- The verification phase is where the local testing of the completed e-commerce website will be conducted. The company owner will take part in the testing, this is done to make sure if the requirements are thoroughly complied, should problems arise, an allotted time for preliminary fixes will be allowed. After all the fixes has been made, the website will be deployed to the World Wide Web. The schedule of testing and fixes are to occur in the last week of August.

1. Maintenance

- Another testing will be done after the deployment of the website should bugs arise, secondary fixes are to be done. The proponents will then schedule the fixes on the first week of September. The dummy entries are to be removed and replaced by the correct product numbers, the database will be emptied from dummy entries for the company to replace the correct product numbers and details that are ready to be shipped for online buyers.

3.1.2 GANTT Chart of Activities

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|  | JULY | | | | | | | | | | | | | | | August | | | | | | | | | | | | | | | September | | | | | | |
| Activities | Week 1 | | | Week 2 | | | Week 3 | | | Week 4 | | | Week 5 | | | Week 1 | | | Week 2 | | | Week 3 | | | Week 4 | | | Week 5 | | | Week 1 | | | Week 2 | Week 3 | Week 4 | Week 5 |
| Interview with Company |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Documentation** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chapter 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chapter 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chapter 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **System** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Requirements Gathering |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Implementation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Verification |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

3.2 Resources

3.2.1 Hardware

Input Devices

The proponents will make use a QWERTY keyboard and a mouse (PS/2 Compatible or Wireless) to input order and shipment details.

Output Devices

The proponents will make use of a monitor that supports 800x600 and 1024x768 screen resolution.

3.2.2 Software

Mozilla Firefox

The proponents will make use of this browser as this browser complies with the web standard.

Codeigniter Framework

The proponents will make use of this specific framework for rapid website development.

Third-party API

Third-party APIs will also be used to be extended in the Codeigniter libraries for faster development.