

Drive & Deliver

Group : groupONE

**Members**

Shizhe Bao

Amandeep Singh Dhammu

Pradeep Nair

Pooja Narayanan Sivagaminathan

Runze Zhang

Submitted on

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# Summary

We will be developing a web application to pick up and deliver the packages. User can choose any of the role whether they want to place a request or deliver the parcel. Customer will login with their credentials and would place a request for the pickup of their parcel. They will specify their home address from where the parcel needs to be picked, personal details, time span (i.e. weeks or months) and the delivery address to which the parcel has to be delivered. Charges for this delivery will be specified and they will pay the money online.

Driver will login with their credentials and would enter the details of their journey specifying the starting point, destination, manufacturer of the car, route of the journey and the time.

After calculation of all the factors, system would then send an email to customer about the time and driver’s car details. The driver will receive the details of the customer’s address and the destination address of the parcel. After the drivers picks up the parcel from the customer’s address and delivers to its destination, email notification would be sent to customer about his delivery. After the successful delivery of the parcel, system would pay the charges of delivery to the driver’s account.

# Why this work needs to be done?

### Relevance or Importance of the problem

This system will allow users to use the power of crowdsourcing, there will be absolutely zero intervention from any third party company with regards to core functionality of the system. This will naturally exploit the benefits of a social platform – parties at both the ends will incur monetary benefits from the system. User wanting to have their package delivered will have a social and a cost effective way to get the package delivered and users willing to help deliver the packages can make money out of it while enjoying the trip as well.

### Problem statement

While there are many logistics providers, providing package pickup and delivery services and even though they do a good job, especially when it comes to delivering packages over a long distance or overseas, the problem for the consumers really lies with getting packages delivered over a short distance (say between cities/counties). That problem being the consumer can never really make use of a service which provides reliable, fast and cost effective delivery solution over such short distances for pretty obvious reasons like services charges levied by the companies, packaging and handling charges, taxes, etc.

Users generally end up seeking help from friends travelling to the place where they want to deliver their personal package or either get help from some community. Why not provide such service over the internet? Users who want to deliver the package can just enter the destination address for the delivery and they will get the best possible option available for them at the cheapest rate possible. Other users who have planned a trip and are interested in making some extra money out of the trip can enter their trip details and can accept some users’ request.

# Objectives

In our system, the model we used is called crowdsourcing. Crowdsourcing is the process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, especially an online community, rather than from employees or suppliers. By definition, crowdsourcing combines the efforts of numerous self-selected volunteers or part-time workers; each person's contribution combines with those of others to achieve a cumulative result.

In this case, the users could be customers or drivers. If the user’s login as customers, they could input critical information about themselves and the parcels. Next, they just have to wait for the notifications. As the drivers, which is the most important part of crowdsourcing, after they upload their information, the system will match up the best choices for them. We ask people to be the drivers to expand their social values, no matter what field they work. Our objective is to make all the free resources can be utilized and we hope that more people can participate, regardless of age, gender or identity.

To build this system, we may meet some issues, constraints or limitations. First of all, we need to focus on the convenience of this web application. Not all of the users are good at using internet, therefore, the ease of usage is of utmost importance. Second, most of the pickup addresses are different with respect to the drivers’ starting points. Under these circumstances, information match has become a key point. We need the optimal solution to have maximize efficiency. At the same time, it also produces a number of constraints. The needs of users are often from their own point of view, therefore, we need a lot of drivers to meet a variety of requirements. If the drivers are not enough, it is difficult to satisfy the needs of users in a short time, so that a lot of resources will be lost. The application itself also contains some limitations. The most prominent problem is the management. Due to the uncertainty of the participations, which include drivers and cars, the service quality is difficult to unify. This is embodied in the professionalism of the service staff.

# Approach

### Solution concept

Crowdsourcing logistics using P2P delivery where each person is a voluntary participant in the whole operation. Application provide a common platform for the actors to meet and discuss the logistics involved i.e. a website through accounts created for each person. Any person with an account can be a driver or sender.

### Design steps

1. **Account creation and activation**: A user can register an account with Drive & Deliver by adding his personal information and an email id. The email is mandatory and serves to activate the account.

2. **Population of account details (Choosing a role):** The user can then login into the application and can choose to be any one of the two roles: Driver or Sender.

A Driver is a person who volunteers to pick up parcels for a sum. The mandatory information for a driver is as below -

 Start point

 End point

 Stop points

 Date time of trip

 Weight of parcels that can be accommodated

 Number of parcels that can be accommodated

A Sender is a person interested in sending a parcel to another destination and wishes to use the application to help him find someone to help him do it. The mandatory information for a Sender is as below -

 Date time of delivery needed

 Delivery address

The information entered is stored persistently.

3. **Request processing**: When a sender issues a request, the application helps the Sender get matched with a suitable Driver. Once the processing is complete, the Sender can choose one Driver from the list shown after processing weight, number of parcels and gives the cost. An email is sent to the Sender with the Driver information and other details.

The end solution will be tested by running the web application on a temporary server and tested against a test suite with both positive and negative test cases.

# Project Management

Project Duration: 3 Months

|  |  |  |
| --- | --- | --- |
|  | Milestone date | Tasks |
| Iteration 1 | Sep 25 | Driver Module |
| Iteration 2 | Oct 23 | Sender Module + Request Processing |
| Iteration 3 | Nov 30 | Request Processing + Login/Registration |

### Iteration 1:

Requirement analysis

Design

Implementation

Driver trip details page design

Database storage of driver and trip details

Database Setup

Account update page for Driver

Testing

### Iteration 2:

Requirement analysis

Design

Implementation

Request page design

Database storage of request

Account update page for Sender

Algorithm design for request processing

Testing

### Iteration 3:

Design

Implementation

Driver Assignment

Email confirmation to Sender and Driver after assignment

Login module & Authentication

Registration Module

Verification logic

Welcome page

Database design for user details

Testing

# Deliverables

Iteration 1: Driver assignment functionality added.

Iteration 2: Iteration 1 + Sender pickup functionality added.

Iteration 3: Iteration 2 + Web application with registration and login functionality enabled

# Team Qualifications

### Shizhe Bao

As an intern, I worked for government for their database design. I also did some project during undergraduate and graduate. I used to make a shopping system and some Android software. Besides, I did research with a professor from Zhejiang University to publish an article, which I processed data for her.

### Amandeep Singh Dhammu

Worked as a developer for ecommerce web application in Java language following the agile methodology. Prepared the design documents, class diagrams, and user case for the requirement of the client which needs to be implemented. This will help me to do things more smoothly in the project and help all my team mates.

### Pradeep Nair

Worked for about 3yrs as senior system engineer and was involved in the maintenance and development of web application. Was also member of the team that performed a major version to the web application which involved reworking and testing of the all functionalities of the web app and restructuring the database.

### Pooja Narayanan Sivagaminathan

I have worked on Web application design as a part of internships and designed web applications for Computer Science department events like online treasure hunt events for technical symposiums during my undergraduate study. I also have 3 years of industry experience as a iOS developer and worked on Agile methodology. I believe this will help give my best to this project.

### Runze Zhang

I used to work as an intern in a company to help other companies to build their own information management system during my undergraduate study. Besides, I also have some research experience about encryption algorithm and DNA-encode, which are also related to the database application. I think these can help me to finish the project.

## Appendix

**Amandeep Singh Dhammu** **Email Id**: axd164330@utdallas.edu

**Phone**: +1-682-553-7778

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To pursue graduate degree in Computer Science to sharpen my concepts gradually acquired as a student as well as a software professional, involve in research and target a holistic development so as to transform myself into a recognized contributor in technological revolution.

**Education**

**National institute of Technology (NIT), Hamirpur** Aug 2009-May2013 Bachelor of Technology, in Computer Science and Engineering 7.41/10

**Professional Experience**

**Sapient Nitro, Gurgaon**

Associate Level-2, Technology (Developer) July 2013-July 2016

1. Sapient’s ecommerce accelerator

Type: e-commerce web application

Technologies: Oracle ATG 11.0, Weblogic, Oracle SQL, JSP, JAVA, Endeca, JavaScript

Description:

1. Upgraded ATG version of accelerator from ATG 10.2 to ATG 11.0 and Java run time from 1.6 to 1.7 on windows and linux.
2. Implemented internationalization in Japanese language for the ecommerce accelerator.
3. Upgraded of Mapquest version from 1.0 to 2.0, changed all the API’s.
4. American Retailer

Type: e-commerce web application

Technologies: Oracle ATG 10.0.3, Weblogic, Oracle SQL, JSP, JAVA, Endeca, JavaScript

Description

1. Implemented customer flow from cart to checkout for LTL(less then truck load) items – Customer adds LTL products with different shipping methods into the cart. He is charged depending on the shipping methods he chooses.
2. Implemented social recommendations for registry services on **desktop** and on **mobile** site. The user may invite his friends for his registry. His friends may accept his invitation and recommend the products for his/her registry.
3. Integration of PayPal for the website using SOAP API’s.
4. Integration of KATORI third party for customization of the products using REST API
5. Intelligent system built to fetch and process the feeds from Adobe Omniture using REST API

**Summer Training**

* **Guru 2 consulting** May 2012 – July 2012
  + Worked on web based system to conduct online examination for students on Struts framework.
  + Implemented the login functionality for the application.

**Academic Project**

* **Plagiarism Detection Tool**
  + - Developed a tool to detect what percentage of assignments are copied which are submitted to the teacher.
* **Building a Web Browser and Search Engine**
  + - Designed the web search engine using Binary Search Tree, Priority Queue, Caching and Stack
* **Simulation of basic MIPS using SystemC library**
  + - Simulated the MIPS processor with limited instruction set.
* **Simulation of various Algorithms of Sorting, Graphs** 
  + - Simulated various algorithms for searching, sorting and graphs with user friendly interface using C++ and C#.
* **Simulation of CRUD operations of various ADT** 
  + - Implemented the basic CRUD operations of Arrays, Linked list, stacks, queues.
    - Prepared the detailed analysis of background and CRUD operations of Red Black tree and its proof of asymptotic bound.

**SKILLS**

* **Languages :**  Java, C, C++ System C
* **Platforms:** Linux, MS DOS, Windows
* **J2EE Technologies:** JSP, JDBC, JSTL, Servlets, JSON, XML
* **Frameworks :** Oracle ATG, Spring, Struts
* **Database:** Oracle 11g
* **Web Technology and Scripting:** HTML, Javascript
* **IDE Tools:** Eclipse-Indigo, Helios
* **Package :** MS-Office
* **Server:** Weblogic, Tomcat

**Pradeep Nair**

Dallas TX-75252

pradystar@gmail.com 972-489-0377

LinkedIn: linkedin.com/in/pradystar

**Objective**

On lookout for a summer and/or fall 2017 Internship position in the field of Computer Science that will utilize strong reasoning, analytical and technical skills.

**Education**

**THE UNIVERSITY OF TEXAS AT DALLAS**, Richardson, TX Expected May 2018

Master of Science in Computer Science.

**UNIVERSITY OF MUMBAI**, Mumbai, MH, India June 2012

Bachelor of Engineering in Computer Science and engineering

**Computer Skills**

Languages : C, C++, C#, Java/J2EE, JSP, JSF, Perl, UNIX shell scripts, PL/SQL

Web : HTML5, JQuery, JavaScript, CSS, Java Servlets, JSP, XML

Frameworks : Spring, Hibernate, Struts2

Tools : make, cmake, Git, CVS, SVN

**Academic Projects**

**Image Stitching Undergrad Project**

* Developed a software using C++ and OpenCV library with interactive user interface for creating panoramic images when provided with multiple discrete images of a single scene.

**Work Experience**

*Senior Systems Engineer* Infosys Ltd., Pune, India August 2013 – June 2016

* Handled maintenance, enhancement and development of three projects for Pfizer Inc. – including maintenance and support for TeamConnect application.
* Performed major enhancements, automation of usage reports, developed new functionality and provided continuous maintenance services.
* Performed major upgrade rollout for TeamConnect application with consistent feedback.

**Leadership/Organizations**

* Participated in IBM’s national level(India) coding event ‘The Great Mind Challenge – 2010’.
* Organized and participated in ‘Autobot’ event conducted by undergrad school
* Member of organizing committee for undergrad school cultural events

**Visa Status:** F1

**Shizhe Bao**

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Dallas, TX 75252

(682)-706-4888

Sxb150731@utdallas.edu

**OBJECTIVE** Seeking a Computer Science internship during Spring/Summer 2017 where my initiative and desire to learn will contribute to the productivity of the company.

**EDUCATION** Zhejiang University of Science and Technology, Hangzhou, Zhejiang, China

B. S. in Computer Science June, 2015 GPA 3.2

University of Southern Queensland, Toomba, Australia

B. S. in IT Management June, 2015 GPA 3.2

**SKILLS Programming language:** C, C#, Java

**Software:** eclipse, visual studio, MS Office, Intellij IDEA

**Work Geographic Information Center of Zhejiang Province, Hangzhou, Zhejiang, CHINA**

**Experience Intern**

**07/2013** Modify existing software to correct errors, allow it to adapt to new

**-08/2013** hardware, or to improve its performance. Develop and direct software system testing and validation procedures, programming, and documentation. Confer with systems analysts, engineers, programmers and others to design system and to obtain information on project limitations and capabilities, performance requirements and interfaces.

**07/2012** **The Second Surveying and Mapping Institute Of Zhejiang Province, Hangzhou,**

**-08/2012** **Zhejiang, CHINA**

**Intern**

Check all layers of maps to ensure accuracy, identifying and marking errors and making corrections. Monitor mapping work or the updating of maps to ensure accuracy, the inclusion of new or changed information, or compliance with rules and regulations. Produce or update overlay maps to show information boundaries, water locations, or topographic features on various base maps or at different scales. Cadastral data sorting and labeling.

**Academic** **Make a completed shopping website as Amazon.com**

**Project** There are many sites, which from items selection to bill payment. Using asp.net / HTML / CSS. Language: C#

**Breakout Game**

Code for a breakout game on Android system with JAVA.

POOJA NARAYANAN SIVAGAMINATHAN

#7825, McCallum Blvd., C1101, Dallas, Texas - 75252

**Phone**: (469) 682-4703 **Email**: [pxn161830@utdallas.edu](mailto:pxn161830@utdallas.edu)

**LinkedIn**: <https://www.linkedin.com/in/pooja-narayanan-sivagaminathan-b2689438>

**SUMMARY**

Adept, self- motivated programmer with 3 years’ experience in iOS mobile application development and cross platform application development.

* Analytical thinker and a passionate coder with a curiosity and adaptability in learning new concepts/technology and applying them within stipulated deadlines in quick turnaround times.
* Dedicated team player also capable of working independently.
* Highly commended for my excellent communication skills while delivering project demos and ideas for future enhancements.

***Technical Expertise*:** C, C++, Objective C, C#, Java, MySQL, HTML, PHP **|** Microsoft Visual Studio,

XCode, Xamarin Studio, MS Office

**EDUCATION**

**M.S** in Computer Science Expected - 2018

University of Texas at Dallas

**B.E** in Computer Science and Engineering **GPA**: 8.54/10.0 2009-2013

Anna University, India

**WORK EXPERIENCE**

*Senior Software Engineer* |***Trimble***  2013-2016

**PROFESSIONAL PROJECTS**

* *Positioning*

Designed an iOS application that communicates with a hardware external receiver for obtaining sub-meter accuracy positioning to enhance customer experience. This connects to an external accessory and obtains relevant positioning information to display onto the GUI after post processing using C/C++ modules.

* *Image Processing and Computer Vision*

Conducted a feasibility study for a research project in Image Processing and Computer Vision using the OpenCV library and integrated the OpenCV C++ library with iOS application.

* [*EAM Works*](https://itunes.apple.com/us/app/eam-works/id1116966678?mt=8)

Asset management iOS application designed using Xamarin to assist the delivery of maintenance works in the field. This application was implemented using C# in the cross platform IDE Xamarin Studio for easy integration of Android and iOS with UI designed using XAML.

* [*Trimble Unity*](https://itunes.apple.com/us/app/trimble-unity/id968379363?mt=8)

Application project in iOS that uses GNSS and mapping technologies to locate and assess the condition of critical infrastructure assets in a region and help maintain the infrastructure up to date. This uses ESRI maps combined with GNSS to help with asset management and work order management. One of the highlights of the application is a fully dynamic GUI designed to change with the work order and its parameters which are sent down from the server.

**ACADEMIC PROJECTS**

* Developer of a Search module for the Computer Science Department Intranet at Sri Venkateswara College of Engineering, Anna University.
* Event organizer and developer of online treasure hunt events – Mine the Turing and Crawl into Kernel held at the Computer Science department at Sri Venkateswara College of Engineering, Anna University.

Runze Zhang

The university of Texas at Dallas, 800W Renner Rd #0722

Mobile:469-543-7276 Email:rxz160630@utdallas.com

**EDUCATION Anhui University of Technology** Maanshan, China Major: B.S.E. in Information and Computing Science Sept 2012-June 2016 GPA: **3.3** Rank: **8/65**

The University of Texas at Dallas Richardson, Texas

Master of Science in Computer Science Aug 2016-

**Main Courses:**

Operating System Data Structure

Compilers: Principles, Technique, and Tools Visual Programming Principle and Interface Technique of Computer Discrete Mathematics

**RESEARCH EXPERIENCE**

**Title:***Model and Simulation on Biofilm development of Pseudomonas aeruginosa based Two Di- mension Cellular Automation* 2013

**National Level Student Research Training Program** Team Leader

**Supervisor:** Professor Hou Weigen

**Objective:** It is good for traditional biology experiment, if the computer software could be designed.

**Main Job:**

* Collect the data of biology experiment;
* Design modelling;
* Simulate the modelling by using Mathematics.

**Title:** *Based on Synthetic Biology to Research Microbial Fuel Cell* 2014

**Supervisor:** Lecturer Xu Hao

**Objective:** Using the principle of biology to design a microbial fuel cell system which could reduce environment pollution.

**Main Job:**

* Collect the suitable oxidation-reduction reaction;
* Collect the suitable organism;
* Get DNA;
* Increase PRC to produce current;
* Test the effect of power supply.

**Title:** *Redesign Natural Biological System* 2013-2015

**iGEM Competition** Team Leader

**Supervisor:** Professor Xu Xiangrong

**Objective:** Learn the principle of natural biological system to create new biological system.

**Main Job:**

* Mathematical modelling;
* Synthetic biology experiment;
* Analyse the data of experiment.

**Title:** *Research a New Way of Software Registration and Authorization* 2015

**Challenge Cup Competition** Team Leader

**Supervisor:** Professor Liu Hongshen

**Objective:** Design a new platform to provide dynamic serial number.

**Main Job:**

* RSA encryption algorithm;
* VC programming;

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| --- | --- | --- |
| **ARTICLE PUBLISH** | **Title:** *Research of Path Planning Based on Synthetic Biology and DNA Computer*  **The Date of Publish:** Aug 23, 2015 |  |
|  | **The First Author** |
|  | Published to **ICSESS** in English and **Industry Control Computer** in Chinese |
| **COMPUTER** | **Programming Languages:** C/C#, Java |  |
| **SKILLS** | **Softwares:** MATLAB, Mathematica, Lingo, LATEX, Microsoft Office  **OD,** |  |

* Install register informat