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# Recyclotron : Destination to Sell E-junk

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## Abstract:

We live in a world which generates tones of e-Waste every year, and people generating it often are clueless about whom to sell it to and how to sell it. There exist several websites but they do not offer instant cash and act as medium between seller and buyer(like Quickr and OLX) , and the product needs to wait for ages before going to its buyer or sometimes does not get bought at all. In this paper, we present an innovative and fairly effective ways to address the above situation by creating an easy solution of disposal. The paper aims at developing an efficient and coming of age platform to buy and sell e-junk. On one hand, it provides cash instantly to the sellers and on the other, connects to a network of buyers who recycle e-Junk and reuse them to their benefit.

Keywords — **recycling, e-junk, web technology, business**

## INTRODUCTION

India, one of the most crowded countries in the world, is also one of the biggest electronic waste producers. Electronics waste, or e-waste, includes computers, scanners, fax machines, cables, and cell phones—basically anything digital that is no longer used by its possessor. The rapid urbanization and economic developments in the country accelerate an appetite for electronics. According to the United Nations, there are more mobile phones than toilets in India. That said, electronic waste is also a lucrative market. United Nations Environment Programme states that illegally traded and dumped electronic waste is worth $19 billion annually. It taps into this lucrative market in one of the world's most electronic waste rich economies. They purchase old mobile devices, fix and resell them through their online platform. The first post-user step in a responsible e-waste management system is reuse, which entails finding a new use or a new user for the old electronic gadget. By minimizing the amount of energy expended to reclaim materials for usefulness, this method is the most environmentally sustainable. There exists several websites for the same but they have not been successful in terms of providing with instant cash to the seller.

We intend to create a user-friendly online interface for sellers of old electronic goods, companies buying E-Waste and for employees and employers of Recyclotron. This online platform enables people to sell and get instant cash for their old gadgets and E-Waste buying companies can buy E-Waste. The websites also encourages the people to understand the value of recycling E-Waste and get them actively involved in the same**.** The purpose of this document is to present a project report on electronic waste recycling as a financially rewarding business. We find that the e-waste business is highly profitable from the economic as well as environmental perspective. There are some established success stories around the world as well as a few in India.

The paper is a challenge of creation of a proper business model. The problem the website aims to address is unique and unparalleled, something that if implemented at a large scale will be a beginning to hassle free recycling of e-Waste. The website will show all products in categorized manner. Customer can browse any product for its price and other details and can order the product. Orders needs to accompany with shipping & billing details. The customer gets paid on the spot by cash on

selling of their e-product. The main purpose of the system is to enable customers and buyers to browse and order or sell from any part of the world and hence increasing business scope.

## PROBLEM STATEMENT

The tonnes of e-waste generated creates a huge situation of e-waste disposal management for which a proper solution hasn't been proposed yet. So, the best way to manage e-waste is by re-using or recycling it as much as possible. For the same, we create a portal where users get to sell their e-junk mainly comprising of mobile phones and laptops and receiving instant cash for it. This e-junk is then bought by either individuals or recycling companies for their requirements.

The main purpose of the website is firstly to be able to calculate the worth of the electronic good to be sold for the seller and then to coordinate a pick-up from home for which job scheduling algorithms are put in use.

## NEED FOR SUCH SERVICES

TABLE 1
PRE - EXISTING APPLICATIONS

| Name of the competitor | What they do? | Why they haven't done this yet? |
|---|---|---|
| OLX | OLX offers free local classified ads in India. OLX is the next generation of free online classifieds. OLX provides a simple solution to the complications involved in selling, buying, trading, discussing, organizing, and meeting people near you. | Their purpose of finding the company is absolutely different while we view ourselves as a recycling company, they view themselves as classified company which happens to cover a small subset of our purpose. |
| Quikr | Quikr is an Indian classified advertising platform. It was founded by Pranay Chulet and Jiby Thomas in 2008 | Their purpose of finding the company is absolutely different while we view ourselves as a recycling company, they view themselves as classified company which happens to cover a small subset of our purpose. |
| InstaCash | InstaCash provides selling price for used/old smartphones, second hand mobiles phones online with instant payment & home pickup facility. | While it provides cash instantly for old mobile phones, it does not encompass all gadgets, nor does it involve big commercialised recycling company |
| KarmaRecycling | They are similar to InstaCash, but go beyond, phones to laptops and tablets. | They do not offer cash instantly, nor do they offer plans to big recycling companies. They do not allow the selling of old gadgets to people. |

## METHODOLOGY

The following section outlines the basic methodology followed in the development phase of this paper. The paper has been developed using the waterfall process model and has a two part aim. The first part deals with developing a platform to sell and buy mobiles and laptops and the second part deals with creating optimal algorithm for calculation worth of goods that are bought and sold.

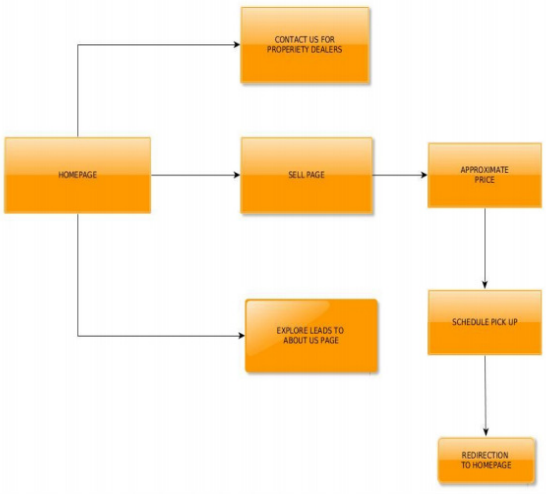
The methodology is as follows:

1. First of all, classify the various types of weaknesses in the current recycling websites.
2. Then research various parameters responsible for these weaknesses.
3. Make a tabular format of various reasons responsible for the inefficiencies encountered in the current emergency departments.
4. Design a methodical approach to remove or mitigate these reasons in order to improve upon the existing service providers.
5. Incorporating these efficient mechanisms in the form of an app or website.

6. Code Development:
   Stage 1: The first stage of code development consisted of flow diagram, various views and coherence with the backend. Predominantly, the basic idea of working of the website was obtained and wireframes designed.
   Stage 2: The second stage consisted of development of the front-end that is easy to use and reaching any page does not require more than 5 clicks, which in itself was difficult to ensure. The views were made similar looking to ensure familiarity.
   Stage 3: Forms and the Django database was created.
   Stage 4: Creation of a fully functional backend.

## ARCHITECTURE/FRAMEWORK

The planned system can be visualized by the following flowchart:




Hardware Requirements:

| | |
|---|---|
| Operating System | Ubuntu 16.04 |
| Processor | Intel i5, 6th Generation |
| RAM | 16 GB |
| GPU | ATI Radeon |
| Graphics Card Ram Size | 8 GB |

Software Requirements:
The following is required to view the website on a given system:
- Node.js v8.4.0
- Django
- Python

## SAMPLE DESIGN AND IMPLEMENTATION

### 1. Home Page

On visiting the site, you can explore all its features and what all it offers to the users to be sold and bought.

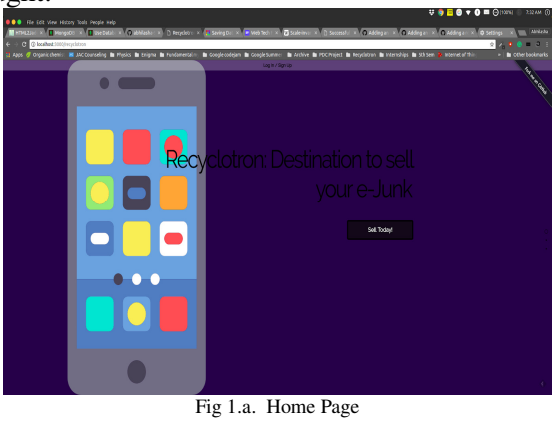



Fig 1.a. Home Page

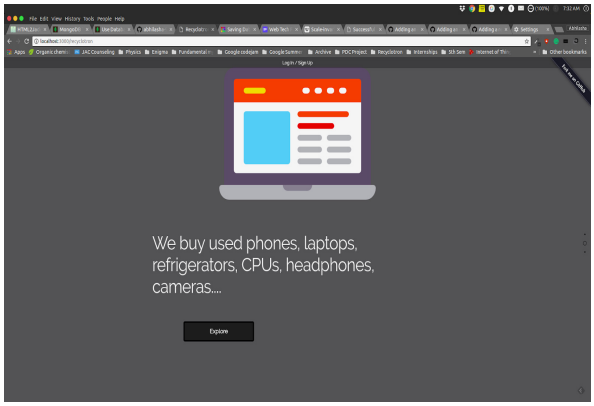



Fig 1.b Home Page

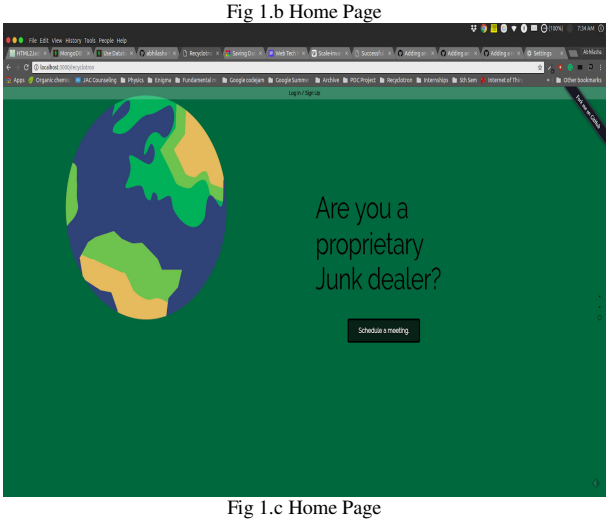



Fig 1.c Home Page

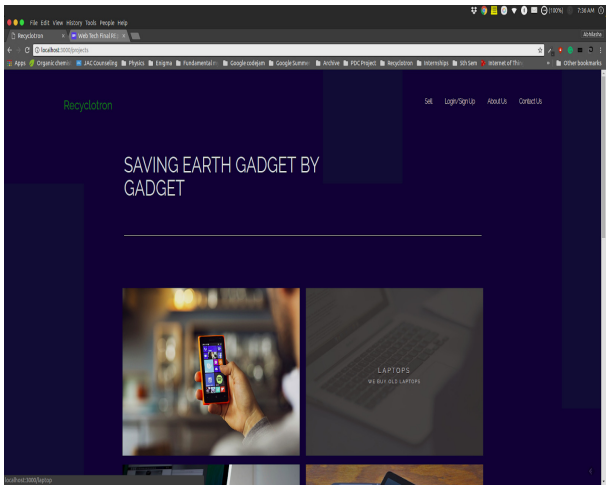



Fig 1.d Home Page

## 2. Registration form for new user

Name, email, password, address are taken as input for registering new user.

If he is already registered then he can directly login. All the input information will be stored in a login table in the database.

All test cases for authentication were tested.

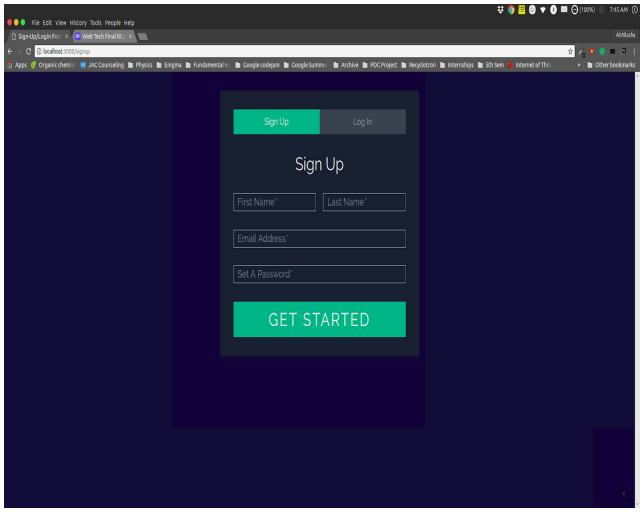



Fig 2 Signup Page

**2. Registering new user**
parameters email id and password will be sent to server, further authentication will be performed.

After entering the data, control will be directed to server. Server will store the data to the login table.

**3. Login table in database**
In database, Login table is created. It consists of field like Sr No., full name, email id, password, and time stamp.
Once register button is clicked, control will be transferred to the server.
There will be one more table for storing location of person, i.e. latitude and longitude for showing their location on map. Once register button is clicked, control will be transferred to the server. There will be one more table for storing location of person, i.e. latitude and longitude for showing their location on map.

**4. Login form for the registered users**

Once user has registered, he can login to website, authentication will be performed by server. Login table is used for verifying correct records. We are online server. On OnClick event of login button control will be transferred to the server.
Connectivity is carried out using Django. For server connectivity, we need Server IP address .Since we are using localhost as server, IP is static. Two

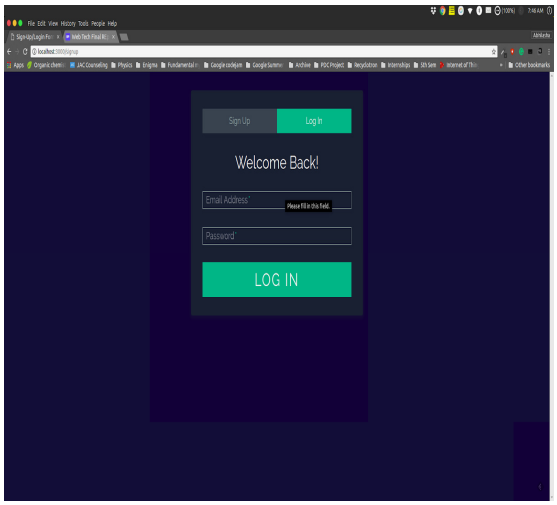
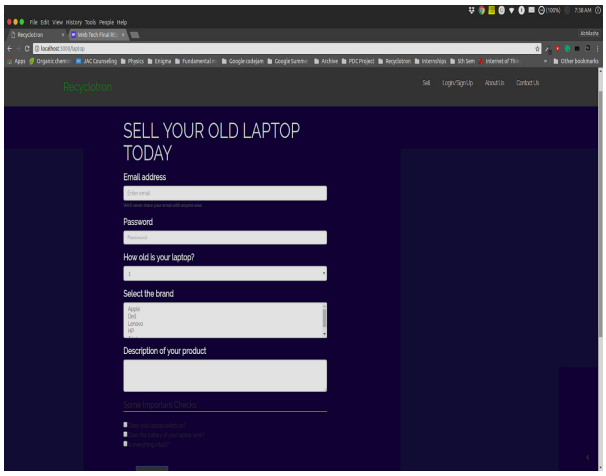



Fig 3 Login Page

### 5. Selling mobiles and laptops

The email address, home address and password and details about the e-junk is inputed from the user to coordinate pickup timing and calculate the worth of the electronic goods.




## CONCLUSION AND FUTURE WORK

This paper is makes the process of recycling e-junk all the more easier and lucrative, and therefore also encouraging people to reuse and recycle e-junk as much as possible. The future work consists of being able to maintain a robust and fully functional express app along with advanced features like google analytics, and personalised dashboards for every user.

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