

## AUTOMATIC PRICE NOTIFIER

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**Abstract:** *The development of the E-commerce websites mostly depends on the customer satisfaction and the service providence of the online shopping websites. By studying some of the factors that impact customers for online shopping we found that Sometimes e-Commerce websites provide flash sales which are of very short span, which will make the detection of the product price very difficult. So, in-order to resolve this issue, our web application will let the user enter a specific amount in other words a desired price for a particular product. Then our web application will check the price of the product in shorter periods. So whenever the price of the product reaches the user's desired price, the user will be notified. A survey's performance has shown that most people after utilising our product have now begun to use online shopping websites regularly and are now more interested in buying items over the Internet. Price and confidence have now become the main drivers of online shopping growth. Discounts and reliable delivery systems have attracted consumers to shopping online, and more.*

**Key Words:** Price Notifier, Web Scraping, Beautiful Soup, Web Page Content Extraction, E-commerce

### 1. Introduction

Online shopping is the way in which customers buy products or get the services from a seller in real time without any brokers, sales man or some other intermediate persons over the Internet. The Internet is a very simple and cost-effective way to market their goods. Product quality is not only good but transactions are also safer, because of all these reasons people shift towards e-commerce. [1] The basic meaning of online shopping means going online, landing on a seller's website, selecting a product and getting the product through delivery, the buyer either pays for the goods or service Online with or after payment by credit card or debit card. Because of their convenience like fast, simple and easy many customers prefer online shopping. Online shopping also saves people time and money and lets them do a little more work during that time and money.

E-commerce benefits service providers or small business people who can't open their own shop or have trouble buying a small room in a large shopping mall. [2] Consumer trust in online shopping is an issue that commands ever more attention. Three main factors of online shopping are competence, integrity and benevolence. Competence refers to a company's ability to fulfill promises made with the consumers who trust their organization. Integrity means a company is behaving systematically, efficiently and honestly. Benevolence is the ability of a company to hold consumer interests like its own self-interest and indicates concern for the welfare of the customers. E-business has greatly helped companies globalize worldwide.

[3] The success of Internet-based businesses in the B-2-C (Business-to-Consumer) segment in recent years has been impressive. It is widely projected that the business-to – Consumer segment will also be geared to a spectacular growth. It also discusses several considerations that could direct organizations in choosing an acceptable business model. [4] Risk perceptions regarding internet privacy and security have been identified and issues for both new and experienced users of internet technology. This paper explores risk perceptions among consumers about online shopping activity. [5] The many firms undertaking e-commerce projects do not appreciate or evaluate them in normal ways and they are not discussing how businesses can deal with the many perspectives involved. And briefly defines how some companies deal with security in the internet. [6] **The** main goal for online shopping is customer satisfaction. Price and the Trust are becoming increasingly important in online shopping. As price is one of the main factor, by using our application the user can be notified whenever the product reaches his desired price

### 2. Existing System

Every E-Commerce website has an option called “Add to Cart” just like a shopping cart. Any user can able to save the product to the cart and can review later whether to buy it or not. Some Ecommerce websites like flipkart will notify the user whenever the there is a change in the price of that product. The drawbacks of this approach is that only a few ecommerce web sites like

flipkart will provide this kind of feature and decrease in the price does not mean the product has reached the users desired price

### 2.1 Disadvantages

The notify feature is not available on majority of web sites like amazon, snapdeal

The user has to open website every time to check whether the price of the product is decreased or not.

### 3. Proposed System

There are situations for the customer to find the product's price is not in his expected price, so he need the product for his expected price, for that he searched for another couple of websites but he can't find the best price for the particular product. So, he need to check the website every time weather the product is dropped to his satisfactory price or not. This continuous checking is a bit ugly and un-comfort for the customer.

The project is primarily developed using python3 which has a wide community support and many built in packages that support web scraping. Three main packages used in the project are requests which is mainly used to send http requests using python. The http request returns a response object with all the response data. Smtplib is a Python package that is used to send emails to any computer connected to the Internet. Server-This server runs on your SMTP server

SMS Gateway to send the SMS text messages to the customer. The software we use to send SMS messages are Python3, Fast2sms web API, Source Twilio python support library, version 6.0.0 or later.

Now, for website we are using the html, css, JavaScript and Angular.

AngularJs is a leading framework for building JavaScript heavy single page based web applications because the single page applications or SPA's load the entire content of a site within a single page this single page is usually an index.html file which means that once the main page is loaded clicking on links will not reload the entire page but simply update the sections within the page itself. USAToday.com is a great example of this technology being used in modern websites browser all the data to build a page – which includes the HTML, CSS and JavaScript files, and then browser then does the work of building the final template that displayed in a webpage. On the other hand, the more traditional applications that use PHP or Java, the server is responsible for all the heavy lifting which includes accepting the requests, fetching the data, along with building the final page. But depending solely on the server in this way leads to higher usage fees along with slower loading times when websites are seeing a heavy traffic rise. In addition to the speed and efficiency improvements, Angular allows us to write code much more succinctly than using plain JavaScript.

### 3.1 Advantages

- User need not to go to website every time to check the changes in price of the product.
- High notifying accuracy.
- Efficient result prediction.
- High consistency

### 4. Approach

The user will initially enter the product url in the home page of our web application. On clicking next, by using python requests package we will send an http request to the user specified product url. Then in response we will get the entire response code, html, css, and java script of the entire product web page. Then on that product page our requirements are the title and the price of the product .So to extract the required items we will use a python package called Beautiful soup. Beautiful soap is used to parse the web page. Then by checking the id or class in which the required information is been stored we can extract that information.

But this kind of approach will only work for web sites that store data in html format like amazon, Snapdeal, flipkart. Some of the web sites like myntra, ajio will store information in json format embedded in java script. So for extracting the java script we have to modify the code to search for the json id.

Then in the second web page we will show the extracted details of the product like title price. And we will ask the user their phone number, mailid, desired price for notifying him.

So when the user submits that details we will store that details in a python nested lists. Then for every 10 minutes our server will check for the product price. The reason we are checking for exactly 10 minutes because generally flash sales will last for at least 15 minutes. So if we check for every 10 minutes we can check them. If the price of the product is less than or equal to desired price then the user will be sent both a message and a mail. The message is been sent using fast2sms webapi and the email is been sent using python smtplib package. And the moment the customer received the message all his details like phone number and mailid will be deleted to reduce the storage.

## 5. Implementation Results

### Home Page

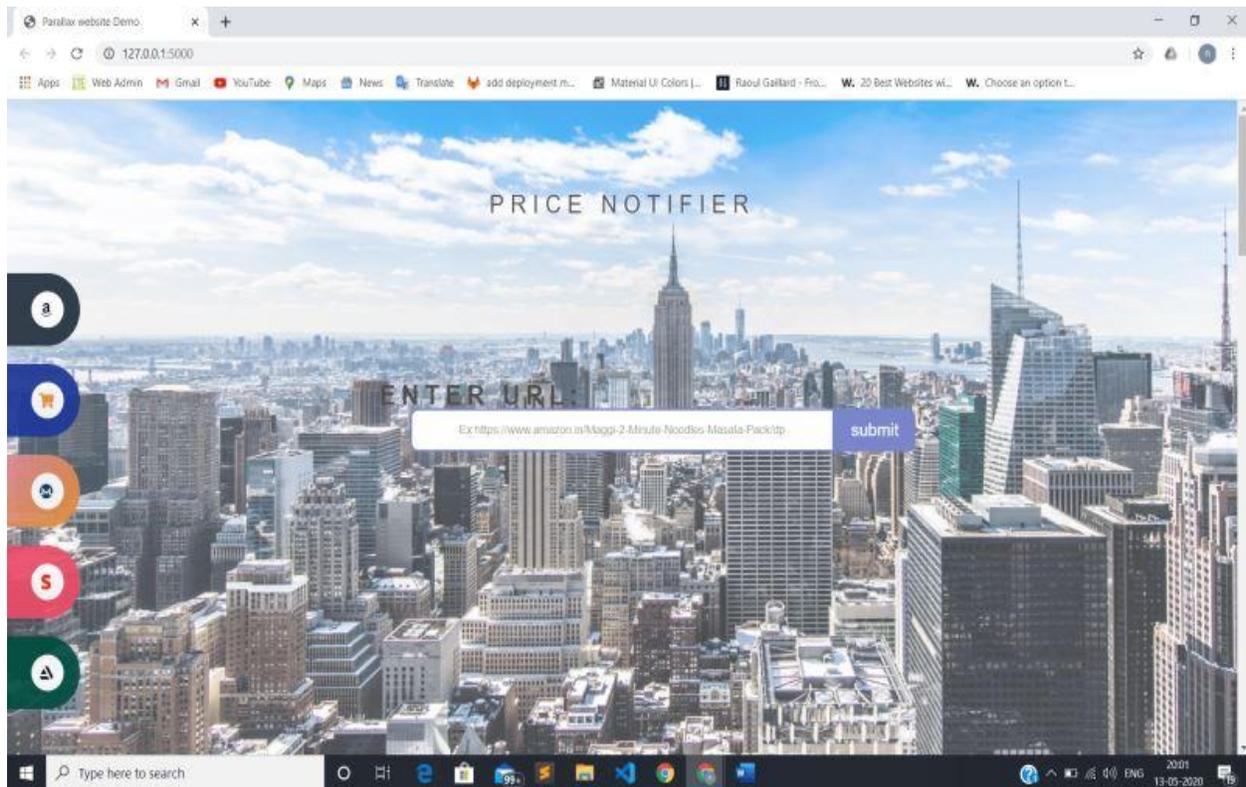


Fig 5.1

Copying product's URL form website:

The user will copies the URL of selected product from website.



Fig 1.2

Pasting URL in Text-box:



Fig 1.3

Showing product Details:



Fig 5.4

The website will show the price and title of the product by scraping the entire URL related to website and then the user will be provided by text-boxes to enter his Desired-price, PhoneNumber, EmailId.

Software starts its work followed by showing the details of the user:

Finally when the user gives his desired price and other details, The software will start's rechecking and sends the notification to the user which says "Our software has started rechecking..."



Fig 5.5

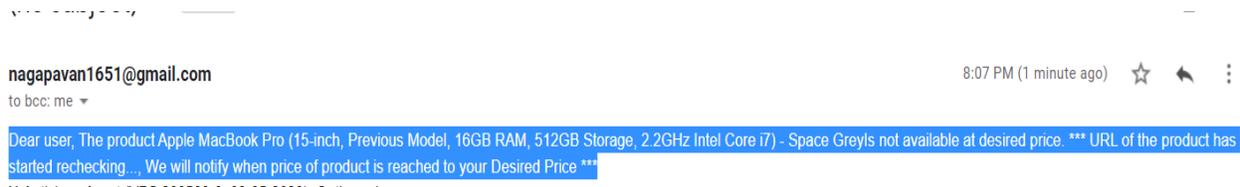


Fig 5.5.1

Rechecks the URL:

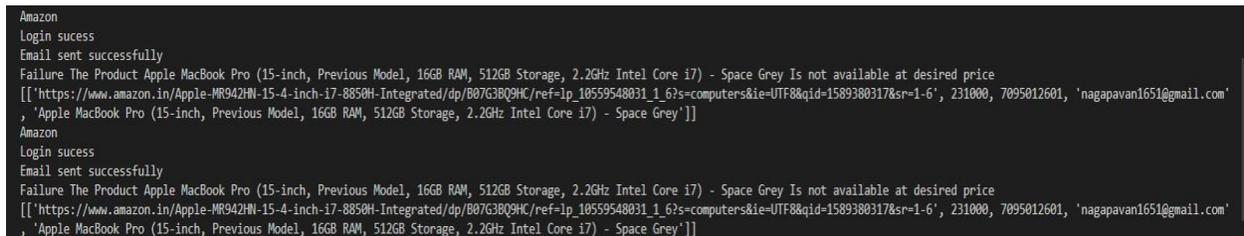


Fig 5.6

This is the output when the Current price of the product is greater than the Desired Price of the customer. When current price is not reached to the desired price then the program will recheck the entire URL given above for infinity number of times with "count 1","count 2" ... This rechecking will continue until the current price is less-than or equal to the desired price.

1. Email:

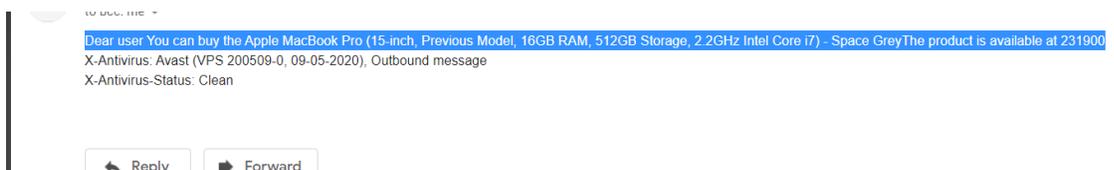


Fig 5.7

2. SMS Notification:



Fig 5.8

This is the output when the current price is less than desired price given by the customer

### CONCLUSION

Our web application will take the user preferred product url and his desired price. Then we will check for the product continuously if it reaches the desired price then the user will be notified via email and a text message. Since we are deleting the details after sending notification our web application is very efficient. Regardless of the Ecommerce web site we can notify the user with a majority of e commerce web sites.

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