



# INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X

Impact factor: 6.078

(Volume 6, Issue 3)

Available online at: [www.ijariit.com](http://www.ijariit.com)

## Internship finder application

Ameesha Saxena

[ameesha99saxena@gmail.com](mailto:ameesha99saxena@gmail.com)

Babu Banarasi Das National Institute  
of Technology and Management,  
Lucknow, Uttar Pradesh

Richa Sharma

[richa.sharma.ar@gmail.com](mailto:richa.sharma.ar@gmail.com)

Babu Banarasi Das National Institute  
of Technology and Management,  
Lucknow, Uttar Pradesh

Harsh Chaturvedi

[harshdaksh05@gmail.com](mailto:harshdaksh05@gmail.com)

Babu Banarasi Das National Institute  
of Technology and Management,  
Lucknow, Uttar Pradesh

Harshit Bhadouria

[harshit.bhadouria@gmail.com](mailto:harshit.bhadouria@gmail.com)

Babu Banarasi Das National Institute  
of Technology and Management,  
Lucknow, Uttar Pradesh

Ankita

[ankitaprajapati8353@gmail.com](mailto:ankitaprajapati8353@gmail.com)

Babu Banarasi Das National Institute  
of Technology and Management,  
Lucknow, Uttar Pradesh

### ABSTRACT

*The current technological prowess allows for the creation of a plethora of products and services. The age of internet has given the people ample opportunities that weren't present before. The typical student has to look for a number of sources to get a desired internship during the college days, the finding process is hectic and thus calls for serious assistance. This is where the need of an internship finder application arises. The following document will shed some light on the important aspects of having an internship finder application.*

**Keywords**— Internship Finder Application, Python 3, Frontend, Backend, GUI, Data Scrapping, Machine Learning, Android (UI)

### 1. INTRODUCTION

The advent of newer technologies has given the human population an edge against a number of opponents in their daily lives. A significant portion of this added edge comprises of elements such as efficient processing of information, and faster result rates. Today, a number of students use the internet for a plethora of works. The average time spent by a student looking for a solution to a given problem varies from a matter of seconds to minutes as well.

What he/she needs in today's digital age is a tool that will help him/her in finding the best available options for commencing the internship. An internship finder application fits the list of requirements that a student possesses. One can find efficient results in the blink of an eye. Sorting through the humongous links on the internet one by one is time taking and ill-suited for the student of digital age. Things have to be fast enough, delays are often accompanied by poor.

Having an application that caters to the specific needs of people also gives rise to the creation of multiple applications that can

serve the common population at the same time as well. This allows technology to reach a larger section of the demographic. It also allows the researchers to commence their work on multiple avenues that haven't been ventured before.

The Internship Finder Application is all about helping the students in finding the right kind of internship which they need. Given the nature of changing trends in the educational sector these days, one has to take every fruitful opportunity into consideration. This is where the role of such an application comes into play. The necessity itself is the driving factor behind the creation of this application.

### 2. NEED FOR SUCH AN APPLICATION

It has been observed that students need online services more than ever before. The internet provides them with a number of options to choose from, but there comes a time when the student doesn't find the appropriate tool needed for his/her educational work.

The need of such an application arose after assessing the features of a number of websites. The parameters used to assist the students with their studies have been at times, not enough. There are certain aspects that haven't been addressed yet, and perhaps this is a major reason behind the application's existence today. If one lists down the necessities that lead to the development of such an application that would help the students in getting along with their internships, it would be as follows.

#### 2.1 The existence of such applications in general is lesser than expected

If one looks at the current state of such applications, he/she will find the number of such applications to be lesser than the counterparts. Today, even the Google Play Store boasts a plethora of applications for every other need, however, when it

comes to the existence of an application such as an Internship Finder, the same cannot be said in that case.

## 2.2 The need of the hour

It is true under all circumstances that the existence of this application was made possible only after realizing the fact that such applications didn't exist before, and even if they did, the features weren't appealing to begin with. The modern-day student has to look for multiple avenues to get along with the current curriculum.

## 2.3 The addition of newer features

As mentioned above, the chances of having an application that possesses features required by the students is fairly slim. This was yet another factor that led to the development of this application. Certain features were added that in turn gave the application a needed edge against the pre-existing applications.

## 2.4 The ease of accessibility

A huge population of the society uses smartphones every now and then for some or the other work. Students likewise spend most of their time looking for solutions on the same device as well. A number of these applications are strictly restricted to PC-based usage became the key reasons behind the creation of this application.

## 3. THE CREATION PROCESS

The development process of this application has been an interesting ordeal in itself. The plethora of tools used in the creation of the skeletal structure to the final working modules have helped in the creation of this project. Given below are the steps involved in the creation of the Internship Finder Application.

### 3.1 GUI Design

The Graphical User Interface design or the GUI design revolves around the creation of the front end geometry. The different aspects such as the setting up of the height, width, etc. are usually done here. For this application the usage of Tkinter toolkit has been deemed necessary. Using this toolkit, the creation of text boxes, specification of geometrical details, etc. have been made possible. The Tkinter [1] toolkit is instrumental as it provides the initial structure upon which the software is going to work. The first foundation of the skeletal structure starts with this process.

### 3.2 Table Formation

The next step after the creation of the interface is the creation of a database for the storage of data in a sequential manner. Based on different keys and parameters, the database successfully holds ample data which in turn is sorted by different aspects. Since every element has something special for its identity, the sorting process therefore becomes viable. In simpler words, the process of table formation commences here. For this purpose, SQLite's usage was given the paramount importance. With the completion of this process, the application now holds the capability of containing data in a sequential manner.

### 3.3 Class Definition

The term class definition here refers to the creation of various different sects within the lines of codes that perform different actions as per the given data. Class definition is a crucial process which involves the creation of different modules as well, these modules end up defining the different sections of the input based windows or pages of the application. The pages range from a login based page, a register based page and all the way to the final result page. Using the `_init_` constructor, the different

pages have been given their respective definitions. The calling of this constructor is for the sole purpose of creating an object in the program. Using the constructor, pages like the login page and the register page have been made possible.

### 3.4 Email Management

Email management comprises of the sending and receiving of emails on a system. The best way to define such a system is by using a protocol that goes by the name of SMTP. The term SMTP [2] stands for Simple Mail Transfer Protocol and it provides the basic tools necessary for email management. In this application, email management has an important place as it sends necessary information to the users of this application. The processes involved in the changing or setting up of newer passwords, confirmation of the user's profile, etc. are managed via emails.

### 3.5 Data Scrapping

Scrapping [3] enables the software to collect useful data which in turn can be sorted in such a manner that provides the user with the desired results. Being a subject of the backend process, data scrapping is nonetheless crucial for the application to collect data from various websites and other online portals. Using list in Python, the collected information is then stored in a dictionary in the form of a CSV file. CSV is better known as Comma Separated Values, such a file stores data in lines. The values, as the name suggests, are separated by a comma in between. Scrapping forms the essential portion of the application alone, without having to deal with scrapping, one cannot even think about having an application that searches for the result from a vast array of data.



### 3.6 Finder Page

The finder page is where the user puts in the parameters required for the initiation of the search process. Using the different parameters such as the location of the internship, stipend, etc. the search process can be narrowed down to a given list of options available for the user. The different parameters also enable the usage of newer tools that can help the finding process in a number of ways as well.

### 3.7 Sentimental Analysis

The term NLP stands for Natural Language Processing [4], it actually helps in determining the patterns and meanings from text based data. It also forms the important part of Machine Learning, the sentiment analysis here is done to sort the search results on the basis of user reviews. The best reviews are placed on the top, followed by the ones with decent reviews. Machine learning has enabled the team in creating a one of a kind application that can do things which weren't possible before. This process is usually contained within the backend of the program.

### 3.8 Android Interface

Perhaps the final step in the creation of this application is the development of an Android-based interface for smartphone usage. Since a huge population uses smartphones daily for some or the other work, an Android interface enables the Android users to gain access to the application on their smartphones as

well. Using Android Studio as the creation tool, the application can now be morphed into a concise package which in turn can be uploaded on the Google Play Store. And depending on the marketing strategies, the application can be made available as a free ware or with a price tag.

#### **4. THE WORKING**

The application has been created in such a manner that the processes involved in finding the best results is self-explanatory. A user on coming across the application will be able to guide himself/herself through the various pages and obtain the results in the process.

The working of this application is simple and easy to understand. One can understand the intricacies as he/she goes through the following steps.

##### **4.1 The Login Page**

The first page that a user will come across while using this application will be the login page. Here the user can get access to the further pages of the application if he/she is already registered for the same. The login page asks the user for two inputs namely.

- (a) The username
- (b) The password

##### **4.2 The Registration Page**

If the user hasn't registered before, then the registration page shall appear, asking for the details of the user. Upon mentioning the details, the user will be redirected to the Login Page again to get himself/herself verified. Once verified, the user can be allowed to proceed ahead. The registration page contains the following fields which have to be filled by the user in order to get himself/herself registered.

##### **4.3 Name**

The name of the user has to be mentioned here in this field. One particular fact should be noted and it states that the user should not get confused between the name and username. Both the aforementioned fields are different as one can always have a different username but not the real name. Hence, the name field is an essential one.

##### **4.4 Username**

This field is essential as well as it contains the user defined name that will be displayed to the user. The username will also be an important field as it will be instrumental in the login process, alongside the password field. This field can contain the name as per the user's choice. The field is flexible as it can have alphabets and numerals present together. However, one should be careful while mentioning his/her username with the proper characters.

##### **4.5 Password**

Password is one such field that is perhaps the most crucial of all. Usernames and real names can be shared but the same cannot be said in the case of passwords. A user can mention his/her password in this field which in time will be used for the login process. The password field is a crucial field and mentioning the wrong password, once registered, will prompt the user.

##### **4.6 Retype password**

This field is more of a precautionary field as compared to the main fields. Here, the user is supposed to type in the previously mentioned password. A mistake in doing so will lead to a mismatched password, and in turn, it will prompt the user to correct the password. This precautionary field acts as the final confirmation of the password before the submission of details.

##### **4.7 Email**

The name of the field is self-explanatory, in this field the user is supposed to enter his/her email ID. The email ID can belong to any domain; however, it should be a valid one as well. Upon mentioning the email ID, the user will be prompted by the system that his/her profile has been registered in the database of the application.

Upon the completion of this process, the user has to click on the REGISTER ME button present at the bottom of the page. Another important aspect to be noted is the fact that upon mentioning the details in the registration page, the user will receive an email confirming the profile's registration. Once the registration is done, the user will be redirected to the login page for entering the username and password. This is done to establish a security protocol.

In such a situation where the user has forgotten his/her password, all he/she needs to do is click on the Forgot Password button, this will generate a link and it will be sent to the user via an email. The email, when accessed will direct the user to a separate window where a new password can be mentioned. Once that process is over, the user can then access the portal again with the newly generated password.

##### **4.8 Finder Page**

The final page that requires the user to enter some values in the boxes is the finder page. Here the user is required to mention the various parameters upon which the internship results will be displayed. Upon mentioning the parameters, a list of related results will be shown to the user.

The finder has been crafted in such a way that the student will easily mention the details. Since a number of students today look for internships, they know the specific requirements needed for them to join one[6]. The Finder Page contains a set of entries which are mandatory under all circumstances. These fields have to be filled, if one prefers leaving a field empty, the result displaying process might not proceed with the given requests.

This has been done to ensure that the entries end up creating a viable filter which in turn will provide the user with the needed results.

This page carries a list of entries that have been tailored as per the students' needs. The following fields have to be filled by the student in order to get the desired set of results.

##### **4.9 Field**

This field has been put in the finder page in order to establish the first element of the collective filter. The Field here refers to the type of internship which the user is looking for. It can vary as per the needs of the user as well, for example: Data Entry, Medical, Civil Engineering, Computer Science, Software Development, Digital Marketing, Content Writing, etc. There are an abundant fields which can be useful to the user. Therefore, one can set a designated field and establish the first element of the collective filter.

##### **4.10 Duration**

As the name suggests, this field shall contain the length for which the user wants to do the internship. The least count present in the list is for 1 month. However, the chances of having such an internship is highly unlikely. Therefore, for the most part, an internship should last for a duration of 3-6 months. The duration of the internship will also serve as an added element to the filter.

**4.11 Location**

As the name suggests, another filter to make the search process easier is the location of the internship itself. One might prefer choosing a given city or a state for doing the internship. A prime example for entry in such a field can be New Delhi. Since students often choose a location that serves as a potential hub for internships, the inclusion of New Delhi as an example makes it all the more viable to begin with. The finder will also look for the internships present near the mentioned location, if an internship isn't present in the place mentioned before, the search area will increase and the areas closest to the mentioned city/state will be displayed to the user.

**4.12 Stipend**

A lot of internships in today's world are either paid or unpaid in nature. If a student looks for an option that allows him/her to earn some bucks as well, that'll definitely be considered a viable option. However, a lot of internships do not provide the student with a stipend, what they do offer is experience and certification though. These two things are extremely important for a student as he/she might lose the money in time, but not the skills acquired. In the stipend field, the user will come across a pair of radio buttons, the options available are as follows.

- Paid
- Unpaid

**4.13 Type**

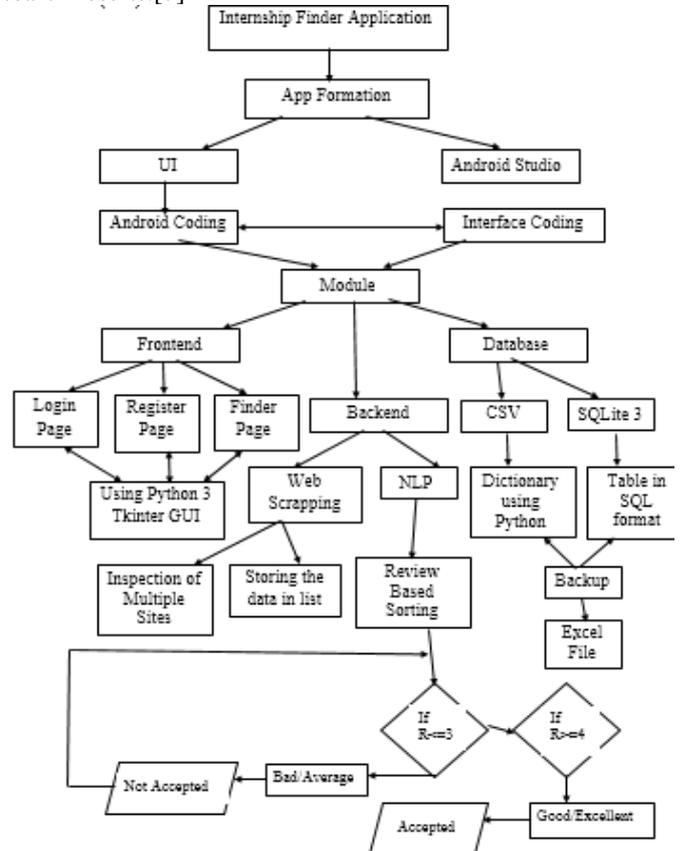
The type of internship mentioned here refers to the mode of internship which the student is willing to join. Some internships can be done from the comfort of home while some on the other hand are strictly restricted to the organization's venue or an institute. The user will once again be presented with a pair of radio buttons, the options present in these radio buttons can be listed down as follows.

- Full Time
- Work from Home

Using these options in the finder page, the student can decide what type of an internship he/she is looking for. Once all the

parameters have been set, the student can then proceed towards the FIND button at the end of the page.

Another important fact to be noted here is that the search results aren't only confined to the parameters set by the user alone, the results will also be displayed to the user on the basis of the reviews. Using machine learning and NLP, the sentiment analysis will be performed on the data, this will provide the already existing filter a final layer and in turn will give refined search results.[7]



**Fig. 1: Working**

**Table 1: Comparison**

S. No.	Features	Internship Finder Application	Other internship applications available
1.	Data extraction from multiple websites	The application uses data scrapper for the extraction of useful data from multiple websites and online portals.	Most portals or applications use a single filter to display the best results. They can vary from portal to portal.
2.	Usage of data science	The application uses various machine learning tools to make sure that the user receives the best set of results from the search process.	The usage of data science is limited in most portals and websites.
3.	Displaying the set of best results	The application doesn't just display a single result as the best result, it rather displays a set of results from multiple websites which have been deemed the best for the user.	For the most part, only a handful of applications display a set of results. Most applications or portals display single results which might vary from time to time.
4.	Can be morphed into an Android application	The application has been morphed into an Android based application with all the features similar to that of the one present while using a PC.	Only a few popular Android applications such as Internshala.com [5], Freelancer.com do exist.
5.	Usage of NLP for result evaluation	The application uses the concepts of ML to deduce the best results based on user reviews. Sentimental analysis makes this process possible. It helps in getting accurate and efficient results.	The usage of sentimental analysis is fairly new to most applications or portals.

The aforementioned table has shed some light on the comparison aspect of things. It is a necessary step nonetheless as comparison does tell a lot of things about the application at hand as well as the one with which it is being compared to. While examples like Shine.com, Internshala.com, Freelancer.com, etc. do possess a plethora of basic features, the Internship Finder Application on the other hand does possess a full-fledged array of features that make it a viable choice nonetheless.

## 5. TOOLS USED IN THE CREATION OF THE APPLICATION

The application has been created with a plethora of tools to begin with. These tools have been instrumental in establishing the useful modules which, in turn have helped the team in the creation of this application. The list of tools used in the creation process of this application can be listed down as follows.

### 5.1 Programming Language

The programming language used in the creation of this application is Python 3[8]. With its extended libraries and user friendly command structure, Python 3 is perhaps one of the best platforms upon which the creation of newer software can be made possible. Python 3 also has a multitude of extensions that help the programmer in the creation of a software. The frontend and backend of the application has been developed using this language and its modules.

### 5.2 Web Browser

The web browser responsible for assisting in the creation process is none other than Jupyter Lab. The flexibility provided by the notebook plus its compatibility with most web browsers made this package the perfect tool for the assistance in the creation of this application.

### 5.3 Database Management

The database management has been done with the help of SQLite. The relational database has been handled by this tool, and hence it has enabled the team in creating a foolproof database that successfully contains relational data and sorts it as per the needs with ease.

### 5.4 Android Application Creation

This has been made possible with the help of Android Studio [9]. The Android Studio provides a list of useful tools and libraries which help the creator in deploying newer methods, plus the creativity of the developer can also be assisted with the different modules present in the package.

### 5.5 Testing Tool

Machine learning has been inculcated in this project with the help of NLP or Natural Language Processor. It has helped in the creation of advanced filtering options that have enabled the application to deliver the desired results to the user [10].

## 6. TOOLS USED IN THE CREATION OF THIS ARTICLE

This article couldn't have been written weren't it for the tools that assisted throughout the research process. These tools have played a crucial role in the thorough research and completion of the document.

### 6.1 Writing Tools

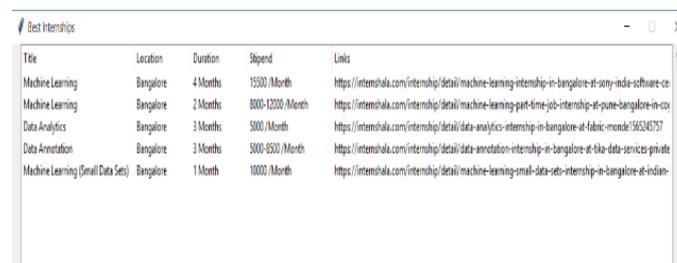
The primary writing tool used in the creation of this document is MS Word 2013.

## 6.2 Research Tools

The research has been made possible with the assistance of a plethora of tools such as Google, Google Chrome, Wikipedia, Internshala.com, Shine.com, and many more.

## 7. RESULT

The final outcome after all the processes is a list of results that are deemed favourable for the user. He/she can now choose an internship without the risk of having to deal with flawed results. Since it has been compiled by not one, or two, but many portals that deal with the same thing. It gives the best group possible.



Title	Location	Duration	Stipend	Links
Machine Learning	Bangalore	4 Months	15500 /Month	<a href="https://internshala.com/internship/detail/machine-learning-internship-in-bangalore-at-sony-india-software-co">https://internshala.com/internship/detail/machine-learning-internship-in-bangalore-at-sony-india-software-co</a>
Machine Learning	Bangalore	2 Months	8000-12000 /Month	<a href="https://internshala.com/internship/detail/machine-learning-part-time-job-internship-at-pune-bangalore-in-cs">https://internshala.com/internship/detail/machine-learning-part-time-job-internship-at-pune-bangalore-in-cs</a>
Data Analytics	Bangalore	3 Months	5000 /Month	<a href="https://internshala.com/internship/detail/data-analytics-internship-in-bangalore-at-fabric-mode/165246757">https://internshala.com/internship/detail/data-analytics-internship-in-bangalore-at-fabric-mode/165246757</a>
Data Annotation	Bangalore	3 Months	5000-9500 /Month	<a href="https://internshala.com/internship/detail/data-annotation-internship-in-bangalore-at-ika-data-services-private">https://internshala.com/internship/detail/data-annotation-internship-in-bangalore-at-ika-data-services-private</a>
Machine Learning (Small Data Set)	Bangalore	1 Month	10000 /Month	<a href="https://internshala.com/internship/detail/machine-learning-small-data-sets-internship-in-bangalore-at-indian">https://internshala.com/internship/detail/machine-learning-small-data-sets-internship-in-bangalore-at-indian</a>

## 8. CONCLUSION

The Internship Finder Application is one such application that will definitely help the modern-day students in their college lives. The ever-changing demands, coupled with the necessity of having skills in today's world have made it mandatory for students to be equipped with at least one skill.

Having an internship experience can prove to be an added edge for any student as companies these days hire people based on their skillset more than their grades. Skill development is an essential aspect which is where this application comes into picture.

Using this application, the students can become a part of an internship program hosted by either an institution, an organization, etc. The possibilities are nearly limitless. The inclusion of powerful modules that help the student in searching for an appropriate internship have been nothing short of an added bonus.

The development process has proven to be a challenging yet informative ordeal as the team has come across newer ways to tackle complicated problems. Solution scavenging and brain storming sessions have been instrumental in the completion and successful trial of this application.

This application is definitely a step ahead of the typical applications sharing the same aim. The ease of access itself is a major bonus that will serve the user well. For the most part, students will be using this application with ease, their queries regarding the processes involved in the registration as well as the finding procedures will be answered by the application through its simple and easy to understand steps.

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