**PROJECT REPORT**

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR

# Course -CSD 5025(Capstone Project)

**ADVIFITY**



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**OBJECTIVE**

The main objective of Advifity website is to provide jobs to maximum number of individual. User can search any type of job by typing the name of the category and apply to the same. Search will be based on different kind of keywords and we will also provide autocomplete to enhance search functionality. The main focus of the website is to provide recent openings in job market so that individuals can get jobs as soon as possible.

Advifity is a free online advertisement website that helps job recruiters to post job on website and job seeker can apply on the same. This project will have different categories of jobs and search will be based on these categories. Jobs can be categorized on the basis of type as well like full time, part time and co-op. Users can post free ads and reply to ads on this website by contacting the advertiser. This website will allow users to post free ads, find what they are looking for and by connecting people in a faster, simpler and easier and cheapest way.

Advifity website is a new form of online advertising site just like posting advertisements in newspaper, magazine, etc. Lots of companies providing classified site for free of charge. Online job posting sites provide you many user friendly features and also it is free to post advertisement.

We have done this project using PYTHON as front-end and MySQL as back-end easing the effort of user.

Job categories can be divided into the following categories:

* [Marketing](https://www.intechnic.com/blog/best-examples-of-website-goals-and-objectives/#marketing-website-goals)
* [Sales](https://www.intechnic.com/blog/best-examples-of-website-goals-and-objectives/#sales-website-goals)
* [Customer Support](https://www.intechnic.com/blog/best-examples-of-website-goals-and-objectives/#customer-satisfaction-website-goals)
* Web Designer
* Web Developer (Front-end and Back-end Developer)
* Graphic Designer
* [IT](https://www.intechnic.com/blog/best-examples-of-website-goals-and-objectives/#it-website-goals) Technician
* [Operations](https://www.intechnic.com/blog/best-examples-of-website-goals-and-objectives/#operations-production-goals)
* [HR](https://www.intechnic.com/blog/best-examples-of-website-goals-and-objectives/#hr-website-goals)

User can search for any job without even login and if user wants to apply to the same job then user can apply to these jobs by login only.

# 

# FEASIBILITY STUDY

A feasibility study is a test of system proposal according to its workability, impact on the organization, ability to meet user needs and effective use of resources. Apart from these, an initial investigation is launched to study the present system, evaluate the possible application of computer based of methods. Selecting a tentative system, evaluate the cost and effectiveness of the proposed system, evaluate the impact of the proposed system, existing personal and ascertain the need of new personal.

To define an improved information system, the study group must understand the information requirements of the organization. This understanding may be obtained by determining what is currently being done and of investigating through interviews and analysis what information is needed to be provided that is not being furnished by the existing system . Data on the cost of operating the current system needs to be collected in order to make a cost benefit for a new system.

The objective of feasibility study is not to solve the problem, but to acquire a sense of its scope. During the study, the problem definition is crystallized and aspects of the problem to be included in the system are determined, consequently costs and benefits are estimated with greater detail at this stage. The result of the feasibility study is a system formal proposal. This is a simply a form of documenting or detailing the nature and scope of proposed solutions. The proposal summarizes what is known and what is going to be done. Three key considerations involved in the feasibility analysis:

1. Economic Feasibility
2. Technical Feasibility
3. Behavioral Feasibility
4. Operational Feasibility
5. Social feasibility
6. Time feasibility

## ECONOMIC FEASIBILITY:

* Economic analysis is the most frequently used method for comparing the cost with the benefit or income that is expected from developed system.
* In the existing system, many people are involved in the process but in the proposed system, number of persons involved be reduced drastically. So the proposed system is economic.
* In the existing system, storage of all these records should be arranged and security should be provided for the records. In the proposed system, separate security arrangement is not needed since the software provides security and maintenance is simply and hardly needs one or two person to operate the system.

## TECHNICAL FEASIBILITY:

* The feasibility center on the existing computer system (software, hardware) and to what extend it can support the proposed addition.
* In the proposed system, data can be easily stored and managed in database management system software.
* The results for various queries can be generated easily.

Therefore, the system is technically feasible

## BEHAVIORAL FEASIBILITY:

* People are inherently resistant to change and computer has known to facilitate changes. An estimate should be made of how strong a reaction the user staff likely to have towards the developments of computerized system.
* In the existing system more manpower is required and time factor is more but in the proposed system, manpower and time factors are reduced .So, the remaining numbers are engaged with some other important works. An SRS is basically an organization's understanding (in writing) of a customer or potential client's system requirements and dependencies at a particular point in time (usually) prior to any actual design or development work.

**OPERATIONAL FEASIBILITY**

People are inherently resistant to change, so this study find out willingness and ability of management, employees customers, suppliers and so on to operate, use and support a proposed system. Due to User - Friendly forms, Interaction with Electronic site will be a success in terms of Operational Feasibility.

**SOCIAL FEASIBILITY**

Social feasibility is a determination of whether proposed projects will be acceptable to the people and customers or not. The users who are going to use this system are ready to accept the system because they know that the proposed system will increase their efficiency and productivity.

**TIME FEASIBILITY**

Time feasibility is a determination of whether a proposed project can be implemented fully within the stipulated time frame. This project can be completed within six months so it is acceptable.

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# REQUIREMENT ANALYSIS

Requirement analysis task is a process of discovery, refinement, modeling and specification. Both the developers and customers take an active role in requirement analysis. Requirement analysis is a communication intensive activity. Requirement analysis can be divided into:

* Problem Recognition
* Problem Evaluation & Synthesis

**Problem Recognition**

The goal of this step is recognition of basic problem elements as indicated by the customer. The basic purpose of this activity is to obtain a thorough understanding of the needs of the client and the user, what exactly is desired from the software and what are the constraints on the solution.

**Problems of the existing system:**

* Security can’t assured
* Delay in storing and retrieving information
* Time Constraint

**Problem Evaluation & Synthesis**

Once the problems are identified, evaluation process begins. After evaluation of the current problem and desired in formations, the analyst synthesis one or more solutions.

* Security can be assured
* Cost effective
* No chance of errors
* Time Efficient

## HARDWARE REQUIREMENTS

The hardware for the project should be selected in such a way that it should give the maximum optimal result .Hardware requirements are as follows:

* Processor : Dual core Processors or higher
* 2GB RAM
* 2 GB Hard Disk or more
* SVGA Color Monitor
* Keyboard
* Mouse
* Modem

## SOFTWARE REQUERMENTS

The software requirements include the software that is required for working. Software requirements are as follows:

The website must be reliable with:

* All Windows OS
* Web Browser Mozilla Firefox and Google Chrome(Firebug as a development tool)
* Editor Notepad++ or Visual Studio or Sublime Text
* Apache with MySQL
* Python 2.7 and Django 1.8 installations

**Communication Interfaces**

* Supports by web browsers (Google Chrome, Mozilla Firefox)
* Contains forms for queries, information etc.

**Technologies**

* Frontend Technologies: HTML5, CSS3, JAVASCRIPT, JQUERY, AJAX
* Backend Technologies: Python 2.7, MySQL and Apache Server
* Framework: Django 1.8 with MVC

**MODULES**

**User (Employers and Job Seekers) Module**

There are two categories of the users. First category belongs to **employer** who will register himself on the website, and then they will be able to post new jobs for the job seeker. This post will contain the category of the job, job description, and type of job.

On the other hand second category of users will be able to search and get information about the jobs by contacting the job recruiter that meets their requirements. User can search the jobs without being registered but can contact the recruiter only after being a registered member.

**Administrators Module**

This module is secured with user ID and password. This module will be prohibited to use by the regular user. The purpose of this module is to perform activities like maintenance, and watch the legality of system. The administrator can also remove job ads if they do not contain all necessary information.

Also admin can check the feedback of the visited users and improve the functionality of the website to a great extent. Also adding product ads and other valuable information related to the proper functionality of the product.

**Advance Search Module**

In this module, user can search the products by typing the name of the category, subcategory or type of the jobs as required by the user as per the needs of the user.

**Contact Us Module**

Visitors can contact the administrators, in case he has any query or suggestions, he can send it to the administrator and then administrator will respond to his query correspondingly.

**Feedback Module**

Visitors can give their views regarding the working of the website and whether it is user friendly or not any problems faced by the user, whether the website loaded fastly or slow.

**Categories Modules**

This module contains different categories like Desktops, Laptops, Mobile Devices, Accessories and Tablets. On selecting a particular category, a user can look for different subcategories and related models listed under the main category.

**Job Posting Modules**

This module can be accessible by job seekers and employers as job seekers can access jobs if they want to apply on those jobs and employer can post new jobs, edit exiting jobs and even delete jobs which are not relevant.

**DATA FLOW DIAGRAMS**

Data Flow Diagram is used to define the flow of the system and its resources such as information’s. DFDs are a way of expressing systems requirements in graphical manner. DFD represents one of the most ingenious tools used for structured analysis. It has the purpose of clarifying system requirements and identifying major transformations that will become programs in the system design. It is the major starting point in the design phase that functionalities decompose the requirement specification to the lowest level of detail.

**DFD SYMBOLS:**

In the DFD, there are four symbols

1. A square defines a source(originator) or destination of system data
2. An arrow identifies data flow. It is the pipeline through which the information flows
3. A circle or a bubble represents a process that transforms incoming data flow into outgoing data flows.
4. An open rectangle is a data store, data at rest or a temporary repository of data.

**Data Flow Diagrams**

* Data Flow Diagrams (DFD) is used to show how data flows through the system and the process that transform the input data into output. Data flow diagrams are a way of expressing system requirements in a graphical manner. DFD represents one of the most ingenious tools used for structured analysis. It is also known as bubble chart.
* The DFD at the simplest level is referred to as the context analysis diagram. These are explained by level, each explaining its process in detail. Processes are numbered for easy identification and are normally labelled in block letters. Each data flow is labeled for easy understanding.

**LEVEL 0 DFD**

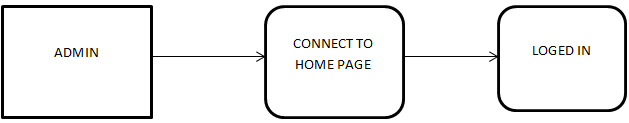
Login Response

**Web Server**

**User**

Details Request

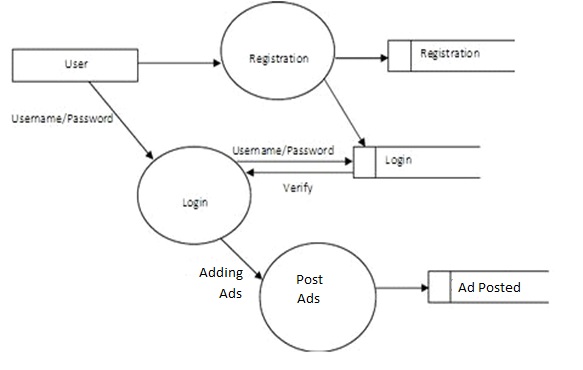
**Figure 1**



**Figure 2**

## LEVEL 1 DFD

LEVEL 1 DFD USER



**Figure 3**

**LEVEL 1 DFD** ADMIN

**JOB CATEGORIES**

CREATE

DELETE

UPDATE

VIEW

**JOB POSTS**

CREATE

DELETE

UPDATE

VIEW

APPROVE

ADMIN

**JOB TYPES**

CREATE

DELETE

UPDATE

VIEW

**USERS**

CREATE

DELETE

UPDATE

VIEW

**Figure 4**

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**E-R DIAGRAM (ENTITY-RELATIONSHIP)**

E-R Diagram is effectively used in the applications that are primarily database applications. The main focus of E-R modeling is the data items in the system and the relationships between them. It aims to create a conceptual schema for the data for the user’s perspective. The schema can later be used during the development of the database.

There are five main components of an ERD:

* **Entities**, which are represented by rectangles. An entity is an object or concept about which you want to store information.



* A **weak entity** is an entity that must defined by a foreign key relationship with another entity as it cannot be uniquely identified by its own attributes alone.



* **Actions**, which are represented by diamond shapes, show how two entities share information in the database.



* In some cases, entities can be self-linked. For example, employees can supervise other employees.  
  
* **Attributes**, which are represented by ovals. A key attribute is the unique, distinguishing characteristic of the entity. For example, an employee's social security number might be the employee's key attribute.   
  

A **multivalued attribute** can have more than one value. For example, an employee entity can have multiple skill values.



A **derived attribute** is based on another attribute. For example, an employee's monthly salary is based on the employee's annual salary.



* **Connecting lines**, solid lines that connect attributes to show the relationships of entities in the diagram.
* **Cardinality** specifies how many instances of an entity relate to one instance of another entity. Ordinality is also closely linked to cardinality. While cardinality specifies the occurrences of a relationship, ordinality describes the relationship as either mandatory or optional. In other words, cardinality specifies the maximum number of relationships and ordinality specifies the absolute minimum number of relationships.



**ER- Diagram of Advifity**

Applies/posts

**M N**

User

Post

**N**

Belongs to

**1**

Category

# TESTING

Testing is the process of executing the program to find if there are any errors. It is the final verification and validation activity. In testing phase, we have tried to affirm the quality of the product. We have also tried to eliminate errors in the previous stages.

In the code testing the logic of the developed system is tested. For this every module of the program is executed to find an error. To perform specification test, the examination of the specifications stating what the program should do and how it should perform under various conditions.

The testing steps performed in “**Advifity”** are given below:

* Unit Testing
* Integration Testing
* System Testing
* Validation Testing
* Acceptance Testing

## 

## UNIT TESTING

In unit testing different modules are tested against the specifications produced during the design of the modules. Unit testing is essential for the verification of the code produced during the coding phase, and hence the goal is to test the internal logic of the modules.

The testing is carried out during the programming itself. After designing and coding each form they are run to see whether there are any anomalies. Some of the various test cases used to test the system are as follows:

* Test cases are given for testing against requirements of the unit being tested.
* Test case for path or branch covering.
* Test case for data flow coverage.
* Testing with classes of bad data

In unit testing the program unit that make up the system are tested individually. Unit testing focuses first on the modules, independent of one another to locate errors. Here in “**Advifity**” unit testing contains testing like user registration test, login test, user updating test, add post test, update post test, delete post test, apply post test etc. This enables to detect in coding and the logic with in the module alone. This testing is also used to ensure the integrity of data stored temporarily.

## INTEGRATION TESTING

Integration testing is systematic technique for constructing the program structure, while at the same time conducting test to uncover errors associated with interfacing. That is the program is constructed and tested in small segments, which makes it easier to isolate and correct.

Invalid modules are invariably related to one another and interact in a total system. Each portion of the system is tested against the entire module with both testing and live data before the entire system is ready to be implemented. When the individual modules were found works satisfactory, the system integration test was carried out. Data was collected in such a way that all program paths could be covered. Using this data a complete test was made. All outputs were generated. Different users were allowed to work on the system to check its performance.

So here in “**Advifity”** integration testing contains Administrative Module, Job Recruiter Module and Job Seeker Module.

## SYSTEM TESTING

System testing is a critical aspect of Software Quality Assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error. A good test is one that has a probability of finding an as yet undiscovered error. The purpose of testing is to identify and correct bugs in the developed system. Nothing is complete without testing. Testing is the vital to the success of the system.

## VALIDATION TESTING

At the culmination of the integration testing, the software was completely assembled as package, interfacing errors have been uncovered and a final series of software validation testing began. Here we test the system functions in manner that can be reasonably expected by users, the system was tested against system requirement specification. Different unusual inputs that the users may use were assumed and the outputs were verified for such unprecedented inputs. Deviation or errors discovered at this step are corrected prior to the completion of this project with the help of user by negotiating to establish a method for resolving deficiencies. Thus, the proposed system under consideration has been tested by using validation testing and found to be working satisfactorily.

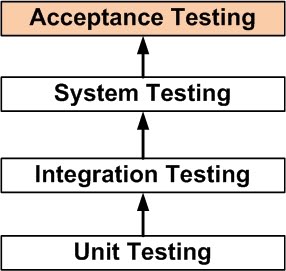
## ACCEPTANCE TESTING

**Acceptance Testing** is a level of the software testing process where a system is tested for acceptability

The primary goal of software implementation is the production of source code that is easy to read and understand.  Clarification of source code helps in easier debugging, testing and modification.  Source code clarification is enhanced by structural coding techniques, by good coding style, by appropriate supporting documents, by good internal comments and by the features provided in the modern programming language.

 In our implementation phase, source code contains both global and formal variables. It contains predefined functions as well as the user defined functions.  The result of the new system is compared with the old system and supposes the result is wrong the error must be debugged.

After the acceptance of the system by the user, the existing system must be replaced by this new system. Any user can work in this package very easily.  It does not require any intensive training for the user.  Procedures and functions in the system are very simple that anyone can understand and correspondingly act to the system with no difficulty.



**SELECTION OF TEST CASES**

For testing to be successfully, proper selection of test cases is essential. There are two different approaches to selecting cases- Functional Testing and Structural Testing**.**

In *Functional testing,* the software or the module to be tested is treated as a black box, and the test cases are decided bases on the specifications of the system or the module. For this reason this type of testing is also called “***black box testing***”. The focus here is on testing the external behavior of the system.

In *Structural Testing* the test cases are decided bases on the logic of the module to be tested. A common approach here is to achieve some type of coverage of the statements in the code. One common coverage criterion is statement coverage, which requires that test cases be selected so that together they execute each statement exactly once.

**Test Plan**

Testing is an extremely critical and time-consuming activity. It requires proper planning of the overall testing process. Testing process starts with a test plan. This plan identifies all the testing related activities that must be performed and specifies the schedule, allocates the resources, and specified guidelines for testing. The test plan specifies conditions that should be tested, different units to be tested, and the manner in which the modules will be integrated together.

**Steps Followed in Testing Overall Software:**

1. First of all, units testing was performed. Each and every module of the system was tested separately so that there are no syntax and logical errors.
2. Integration testing was performed next by combining tested modules into subsystems. Here we tested module interactions.
3. When the development of whole system was completed, we performed overall system testing to discover any remaining errors.
4. Next, we performed testing by installing the software in computer lab. After testing some errors, not uncovered earlier, were discovered. They are mainly field size errors and some other minor problems. All errors found were corrected.
5. At the end acceptance testing was performed.

**RESULTS**

This system will develop a system of improved facilities. The proposed system will eliminate or reduce these difficulties up to some extent.

* The website will attract many users to apply jobs online. So the information must be in order to keep tracking of these users and will be useful for the future reference.
* Job seekers will also get facilitated if website provides proper feedback of the previous listing of a particular recruiter.
* Administrator will enjoy the power to delete any advertisement, based on the user’s review, he finds that job seekers is not reliable or the job listed by that recruiter is not genuine. It will increase the credibility of the website.

Following are the results of proposed:

* It has the ability to add new admins and users.
* It helps to get details about the latest jobs being added along with reviews.
* It has the ability to provide username and password to each user.
* Users can view their Ads posted in their account details page.
* Admin can delete Ads if it violates the law.
* Admin can add new categories.
* Admin can delete old Ads for the jobs already being sold out.
* Admin can send important messages to the subscribed members through the newsletter panel.
* Registered user can post review about the listed jobs.
* Confidently and anonymity issues.

**CONCLUSION**

The Software developed is found to be working efficiently and effectively. It results in regular and timely action in posting, viewing and editing ads and account details. It can be observed that the information can be obtained easily and accurately.

The Software is made user friendly to the maximum so that any lay man can run the software provided he could access to the system via the login password.

The goals that are achieved by the software are:

* Instant access.
* Improved productivity.
* Optimum utilization of resources.
* Efficient management of records.
* Simplification of the operations.
* Less processing time and getting required information.
* User friendly.

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We have not submitted the matter embodied in this dissertation to any other university or institute for the award of any degree or for any other purpose what so ever.

This is to certify that the statement submitted by the above candidate is correct and true to our knowledge.

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