A Project Report On

STIPEND

(An Online Plateform for Buisness Work)

Submitted in partial fulfillment

By

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Under the Guidance of

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CERTIFICATE

This is to certify that **Ankur Gupta** of B.Tech Pre-final year (CSE) have carried out a project work on **"Stipend(An Online Plateform For Buisness Work")** under the guidance of **Mr. Abhilash Sharma, Sr. Lecturer** in CSE Department in Meerut Institute of Engineering & Technology, Meerut (Affiliated to U.P. Technical University, Lucknow) is a bonafide record of work done by them in mini-project lab during the year 2008 – 2009.

Prof. Sunil V.K. Gaddam
Head of C.S.E. Department

Mr. Abhilash Sharma
Sr. Lecturer of C.S .E. Dept.
(Internal Guide)

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ABSTRACT

Enterprises are inreasingly developing small applications/utilities to automate some or the other operation. This has lead to lots of data duplication inside applications. For instance an attendance application will duplicate all the data from payroll application. This duplication of data leads to problems such as duplication of records, loss of data integrity etc. There are existing solutions such as enterprise application bus and web services which allow integration of applications into a framework. But implementing these technologies have there own challenges.

Stipend paltform is an attempt to build applications where data is treated as first class citizens. The aim of the project is to build data aware application which will expose data to other applications whenever needed. For instance a contact application will expose its data to invoice application so as to avoid duplication of storing client contacts. The second attempt will be to try to embed application as widgets in other applications. So, the contact app should be able to expose the search widget, which can be used by invoice application to allow searching of contacts while creating an invoice.

All application can be deployed as individual applications and an exhange engine will allow the administrator to connect applications to each other. Applications can be deployed on multiple servers and connect to each other by specifying the URI of the application.

Module Description

1. Stipend Invoice:-

Stipend Invoice is the easiest way to invoice your customers. It helps create, send and manage your invoices online. Using Stipend Invoice you can track customer payments and also accept online payments from customers. In this section let's take a quick look at some of its invoicing features:-

1.1 Send Elegant Invoices:-

Send elegant invoices using invoice templates. Make use of our readymade invoice templates or create your own custom invoice templates. Continue sending invoices in the format you want, don't allow the invoicing service to enforce the invoice format.

1.2 Collect online payments:-

Ensure faster payments from customers by allowing them to make online payment to your invoices. With Stipend Invoice, accepting online payments from customers is very easy and the workflow is completely automated.

1.3 Track invoices & payments:-

Track all your invoices. Quickly see the ones that are paid and the ones that are still open. Easily narrow down to the invoices that are past their due date and take appropriate action. You can also track all customer payments and automate sending of payment thank-you mails to your customers.

1.4 Automate follow-up:-

Configure auto reminders in the service and avoid following up each and every individual invoice manually. You can configure up to three auto reminders, specify the days after which each of these reminders has to be sent and to whom it has to be sent.

1.5 Automate recurring invoices:-

Make use of our recurring profiles and automate sending of re-occurring invoices to your customers. Just specify the frequency along with other invoice details and we take care of sending it periodically.

1.6 Assess late fees automatically:-

Configure the late fees rules in the service and have it access the late fees on your invoices automatically whenever there is a delayed payment. Don't go through the pains of calculating and re-calculating the late fees again and again on your invoices.

1.7 Stay on top of your business:-

Get instant access to the various important information, like the invoice aging report, customers who give you more business, items that sells the most, sales made in a particular month etc. and get benefitted.

1.8 Estimates:-

Using Stipend Invoice you can create, send great looking quotes or estimates to your customers. You can keep track of the entire transaction history and also get benefited by streamlining the work flow.

2. Stipend Project:-

Stipend Project is the easiest way to manage projects. It helps create and manage your projects online. Using Stipend Project you can track the progress of the project & take various decisions according to them. In this section let's take a quick look at some of its features:-

2.1 Create resource:-

Create project resources and allocate cost and weight to them.

2.2 Create team :-

Create a team from the available resources. Stipend project lets you arrange teams in a hiearchy by allowing you to create team from exisitng teams. So you can have a team of managers with each manager managing a team in turn.

2.3 Create task and milestones :-

Create tasks and assign them to key milestones of the project. Mange and track project progress from a central place. You can view the percentage completion of the project. Assign expected dates, revised dates and actual dates to tasks to help you track project slippage

2.4 Project break down :-

Create work break down structure and resource break down structure to track the project completion and resource allocation.

2.5 Project reports:-

Create gnatt chart and PERT charts to visually represent the project status, length of acitivity and time spent on it. Create S-curves to track project developemnt rate.

3. Stipend Contacts:-

You can maintain your customer and contact information in Stipend Invoice so that it comes handy during quote or invoice creation. You can also very easily import this information in any standard format. This section of the tour walks you through some of these features-

3.1 Organize customer information:-

Quickly add or import your customer and contact information and organize them. With support for most of the standard formats for customer/contact import - Outlook Express CSV, vCard, CSV, TSV etc., you can be rest assured that you need not re-enter or duplicate this information in Stipend Invoice.

3.2 Send reports to clients:-

Send clear, unambiguous reports to your clients. Easily generate and send the monthly customer statements, balances reports and the invoice aging summary.

3.3 Easily browse through your contacts:-

You can easily browse through your customers and contacts. You can also use the search functionality to quickly narrow down to a particular customer or contact that you are looking for.

4. Stipend Time Sheet:-

In the Project Management world, timesheets can act as a valuable source of knowledge about how much effort is put for a task to get complete. This in turn helps the project team to reduce time spent and improve overall project management. With timesheets you can gain information on time, cost, productivity in real time which enables you to make informed decisions.

4.1 Benefits of Stipend Projects – Timesheet:-

(a) Provide real-time reports and collaboration to improve project tracking and reduce time spent.

(b) Allow the team to manage a project and enables the members to identify time spent for a task.

(c) Streamline the project management process and control the performance of a project.

(d) Simplify the timesheet and expense report entry process, making it a very user friendly tool.

(e) Record actual hours against your projects which enables you to manage and identify slipping deadlines.

4.2 Log Time Spent:-

Timesheets may record the start and end time of tasks, or just the duration. It contains a detailed breakdown of tasks accomplished throughout the project. You can log details of each task like date, hours spent, billable status etc.

Stipend Projects allows you to:

(a) Get visibility into team members day-to-day actions and tasks lists.

(b) Let the project team to log hours and minutes spent on each task.

(c) Build timesheet reports to bill your clients and generate payrolls for the team.

4.3 Export in different formats:-

Export all your timesheet data in just a single click and send them to your clients / project managers / partners to get a glance of the accomplished tasks of a project for subsequent billing, payroll or project cost estimation.

4.4 Create Invoice for clients:-

Create invoices from timesheet and send it for client payment. In just a single click on Create Invoice option available as part of Timesheet it will load all your timesheet as invoice using Stipend Invoice.

With Stipend Projects you can,

(a) Create and track invoices you issue to your clients for payments

(b) Determine what you're owed, by whom and when it's due

(c) Analyze payment history, notify new invoices, save time and collect money

(d) Show Billable / Non-Billable hours

5. Support:-

In this module, we will provide support to our customers, if they have any problem in using this software. It will also consist of frequently asked questions. If there is some need then a forum can also be added to the support section for discussion about this software.

6. Reports:-

This module will be used for generating daily reports, weekly reports & yearly reports.

7. Settings:-

In this module we will provide different settings, so that the user of this software can change the settings according to their needs.

Requirement Analysis

Requirement analysis is done in order to understand the problem, which the sofware system is required to solve. The problem could be automating an existing manual system like manual Telephone Directory System or developing a new automated system based on user needs or a combination of both. For large systems, which have to perform a large number of tasks with multiple features, it is very important that the system requirements are very clearly understood by discussing with the potential users. This task involves several meetings between the client/user and the system developer. In order to minimize the communication gap, especially for large project, **Software Requirement Specifications** are finalized between the client and the system analyst.

Hardware Requirements:-

CPU	**:**	Pentium-iv
RAM	**:**	A minimum of 64 MB RAM is recommended
HDD	**:**	A minimum of 10 GB is recommended
INTERNET	**:**	An Internet Connection

Software Requirements:-

Front End	:	Python 2.5, jquery
Server	:	CherryPy
Database Server	:	MySQL
Templating Engine:		Mako
Object Relational Mapper:		Dejavu
Form Validation Package:		Formencode
Browser	:	IE 6 or more/Firefox/Opera/Chrome

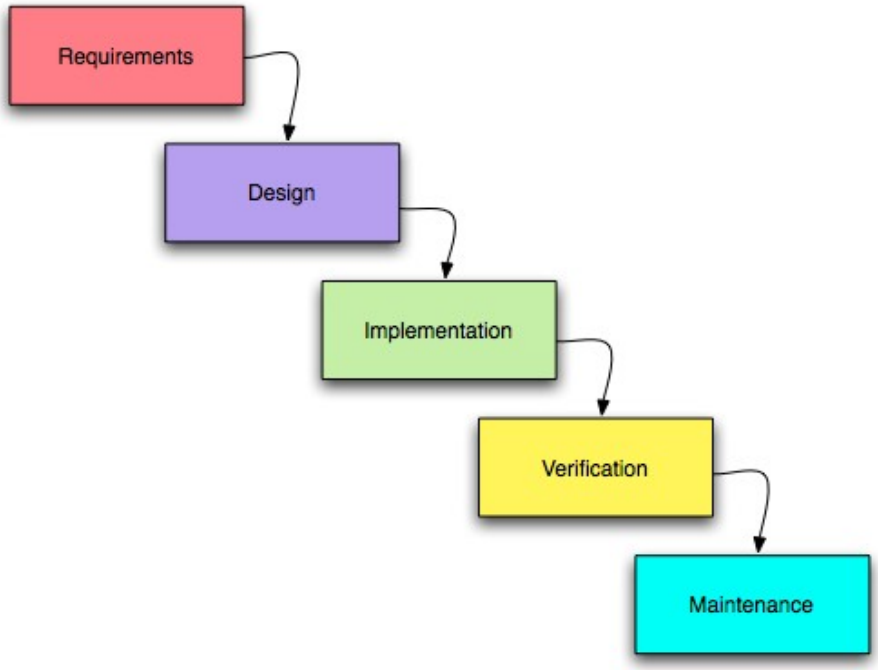
Operating System:-

LINUX

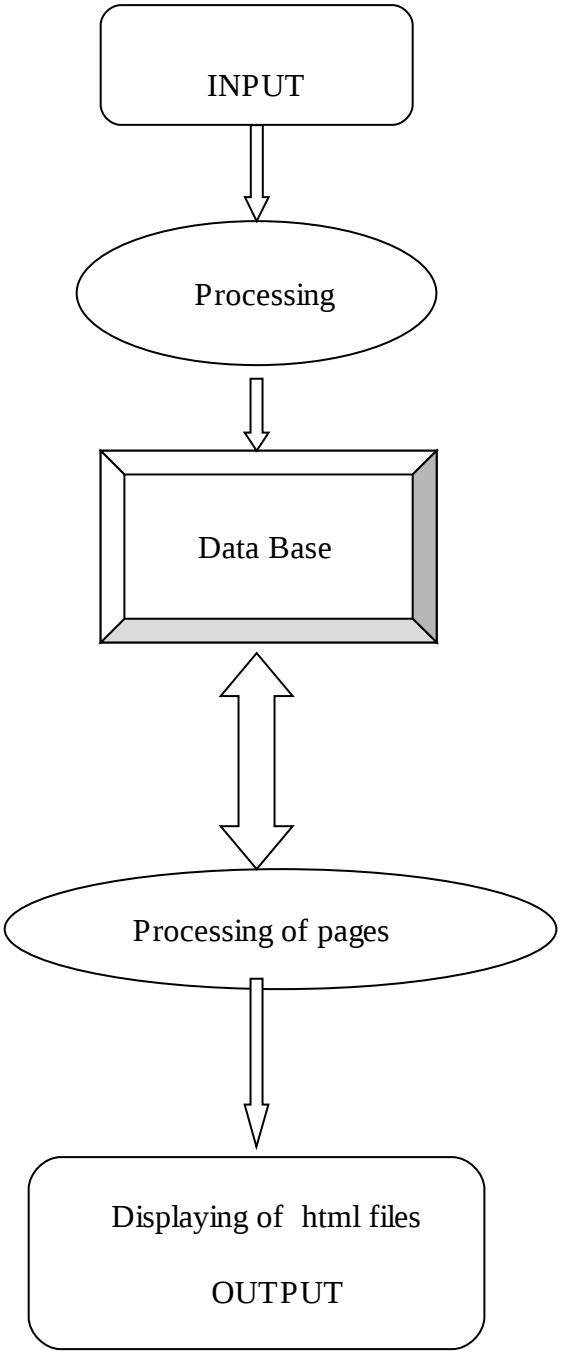
Methodology Adopted

The following approach is used to design the system. This is called “classic life cycle” or “software development life cycle”. The linear sequential model suggested a symmetric, systematic, sequential approach to software development that begins at the system level and progress through analysis, design, coding, testing and maintenance.

In login verification module we are checking the authenticity of the person who is using this application. The person who is using this application should enter correct userid and password to authenticate himself.



STRUCTURAL ANALYSIS:-



SYSTEM MAINTENANCE AND EVALUATION

SYSTEM MAINTENANCE

Software maintenance is the last phase in the software Engineering process that eliminates errors in the working system during its work span and to tune the system to any variations in its working environment. The system requires maintenance as there may be changes and requirements in the organizational needs, government policies, hardware and software environment etc. often small system deficiencies are found as a system is brought into operation and changes are made to remove them. System requirements may be revised as a result of system usage or changing operational needs. Perhaps oversight that occurred during the development process need to be corrected. Often the maintenance need arises to capture additional data for storage in a database or in transaction files or perhaps it may be necessary to add error detection features to prevent system users from in adversely taking an unwanted action.

Maintenance of the system after it is installed is concerned with an additional factor in hardware. Once the system is delivered and installed there is a brief warranty period during which time the vendor is responsible for maintenance. This is a typically a 90 day period after that time the purchaser has the option of acquiring maintenance from various sources. Maintenance source excepting vendor is also available from companies specializing in providing the service, called third party maintenance companies.

When the system is installed, it is generally used for long period. The average life of system is 4-6 years, with the eldest applications often is used for over 10 years. The need for debugging and correcting errors or failure on an emergency basic is comparatively low: less than 20% of the task of correction. System and organization are in constant state of flux; therefore the maintenance of the system also involved adoptions for earlier version of software.

Approximately 20% of all maintenance work is performed to accommodate changes in report, files and database.

Maintainable Design

The points to reduce the needs for maintenance are:

- More accurately defining the user's requirements during the system development.
- Assembling better system documentation.
- Using more effective methods for designing process logic and communicating it to project team members.
- Making better use of existing tools and techniques.
- Managing the system engineering process effectively.

The maintenance for Integrated Advertising System was performed with the above-mentioned points as the underlying principles and according to the demands of the users.

COST AND BENEFIT ANALYSIS

The benefits of this project include four types:

- **Cost – saving benefits**

This project reduces in administrative and operational cost. Because of reduction of use of paper the cost of test reduces.

- **Improve-service-level benefits**

Proposed system improves the systems' performance because the current system is based on manual processing while the proposed system is based on computer processing.

- **Improve-information benefits**

  It provides better information in breath space-time for decision-making

- **Time – saving benefits**

  It saves lots of time and provides the same result in very less amount of time.

TESTING

Testing:-

Testing plays a critical role in quality assurance for software. Due to the limitation of the verification method for the previous phases, design and requirement fault also appear in the code. Testing is used to detect these errors, in addition to the error it introduced during coding phase.

Testing is a dynamic method for verification and validation, where the system is to be tested is executed and behavior of the system is observed. Due to this testing observes the failure of the system, from which the presence of fault can be deduced. However, separate activities have to be performed to identify the faults.

There are two method of testing: **functional** and **structural**. In functional testing, the internal logic of the system under testing is not considered and the test cases are decided from the specification or the requirements. It is often called “Black Box Testing”. Equivalence class partitioning, boundary analysis, and cause effect graphing are examples of methods for selecting test cases for functional testing. In structural testing, the test cases are decided entirely on the internal logic of the program or module being tested.

As the goal of testing is to detect any errors in the programs different flavor of testing are often used. Unit testing are used to test a module or a small collection of modules and the focus is on detecting coding errors in modules. During integration testing modules are combined into sub-system.

Which are then tested? The goal here is to test the system design. In system testing and acceptance testing, the entire system is tested. The goal here is to test the requirement themselves. Structural testing can be used for unit testing while at higher level mostly functional testing is used.

In the project Monthly Materialization Report System we used the unit testing and functional testing.

System testing is a critical phase in systems implementation. Testing of a system involves hardware devices testing and debugging of computer programs and testing information processing procedures. Testing can be done with test data, which attempts to simulate all possible conditions that may arise during processing. The plane for testing are prepared and then implemented.

The testing methods adopted in the testing of the system were Independent Unit Testing and System Testing

System Testing (ST):-

It is a systematic technique for testing the whole integrated system. First all the modules are integrated to form a system and then this integrated system is tested according to the test plan initially prepared. It helps to uncover errors associated with interfacing. It also tests to find discrepancies between the system and its original objectives.

In the testing of IAS, both these testing methods were applied. The different units were initially tested independently, and then all the units were combined into one to form the system. This system was again tested. All the test conditions were planned in advance and documented in the Unit Test Plan (UTP) and System Test Plan (STP).

Software Testing is a critical element of software quality assurance and represents the ultimate review of specification, design and code generation. The increasing visibility of software as a system element and attendant “costs” associated with a software failure are Motivating force of well planned, through testing.

Testing Objectives:-

- Testing is a process of executing a program with the intent of finding errors
- A good test case is one that has a high probability of finding an as-yet-undiscovered error
- A successful test is one that uncovers an as yet undiscovered error

Test case design:-

The design of testing can be divided into two broad categories:

- Black Box Testing
- White Box Testing

Black Box Testing:-

When computer software is considered, black box testing alludes to tests that are conducted at the software interface. Although they are designed to uncover errors, black box tests are used to demonstrate that the software functions are optional, that input are properly accepted and output is correctly produced, and that the integrity of external information (e.g. a database) is maintained.

White Box Testing:-

White box testing of software is predicated on close examination of procedural detail. Providing test case that exercise specific sets of conditions and/or loops tests logical paths through the software. The main disadvantage with white box testing is even for smaller programs the number of logical paths can be very large.

Software Testing Strategies:-

Software testing is one element of a broader topic that is often referred to as Verification & Validation (V & V). Verification refers to the set of the activities that software correctly implements a specific function. Validation refers to a different set of activities that ensures that the software has been built is traceable to user requirements.

Using the test data following test run are carried out:

- Unit test.
- Integration test.
- Validation test.
- System test.