Project Report

ilancer.com

I-Lance.com
(Freelancer hiring portal)

A Project Report
Submitted in partial fulfillment of the
Requirements for the award of the Degree

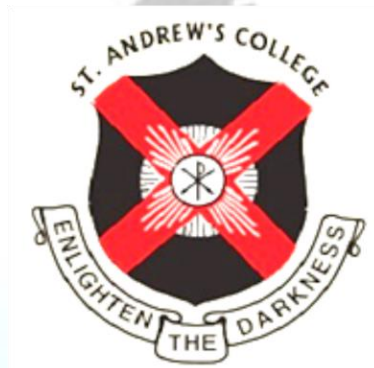**BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)**
By
Bosco Hilary Correa
Roll Number (5204)

Under the esteemed guidance of
Mr. Tirup Parmar
(Asst. Professor)

DEPARTMENT OF INFORMATION TECHNOLOGY
ST. ANDREW'S COLLEGE OF ARTS, SCIENCE & COMMERCE
St. Dominic Road , Bandra west (W)
Mumbai-400 050.
Maharashtra
Year (2018-2019)

PROFORMA FOR THE APPROVAL PROJECT PROPOSAL

PNR **No.: ……………………**   Roll no**: _____**

1. Name of the Student

    _____

2. Title of the Project

    _____

3. Name of the Guide

    _____

4. Teaching experience of the Guide_____

5.   Is this your first submission?   Yes ☐   No ☐

Signature of the Student   Signature of the Guide

Date: …………………   Date: …………………….

Signature of the coordinator

Date: …………………

ST. ANDREW'S COLLEGE OF ARTS, SCIENCE & COMMERCE
Affiliated to University of Mumbai
Mumbai, Maharashtra - 400 050.
Department of Information Technology

<u>CERTIFICATE</u>

This is to certify that the project entitled, "**I-Lancer**"(students or just graduated students from

college recruiter), is bonafide work of **BOSCO HILARY CORREA** bearing Seat No: **(5204)**

submitted in partial fulfillment of the requirements for the award of degree of

BACHELOR OF SCIENCE in INFORMATION TECHNOLOGY

from University of Mumbai.

Internal Guide   **Coordinator**

External Examiner

Date: **College Seal**

ABSTRACT

The aim of this project is to provide young college going students or freshers to earn money and provide their various services like photography, artistry, teaching, Coding, Videography etc. to clients. Also, the portal allows the freshers to create and also showcase their portfolios to others. So, the clients can compare all the freelancers side by side according to their domain. Also the portal provides the freshers with courses from the popular domains like udemy.com, lynda.com and Pluralsight.com. Even the portal pulls in the videos tutorials from YouTube.com.

The project is based on ASP.NET MVC5 as backend Framework with bootstrap decorating the frontend. We Use a Model View Controller architecture to keep our code segregated and avoid repetition of code, thus reusing the maximum amount of code. We also use Entity framework as our object relational mapper. For storing data we use SQL Express 12 with a central Database architecture. The application takes care of different modules and their associated reports, which are produced as per the applicable strategies and standards that are put forwarded by the administrative staff.

DECLARATION

I, Mr. BOSCO HILARY CORREA of St. Andrews College T.Y.B.Sc-I.T hereby declare that I have completed this project, 'ONLINE FREELANCER HIRING WEBSITE' , during the academic year 2018-2019.

This project work is done by me and is not a copy of any other work. This information submitted herein is true to the best of my knowledge.

Name and Signature of the Student

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1. INTRODUCTION

1.1 BACKGROUND

- There's no such online web portal or application that gives opportunity for the young and talented students graduating from the colleges of major cites to gain experience and master in their respective fields like Cooking, Web development, App Development, Accounts, Designing, Painting and many more.

- Also, there's no region-specific portal where you can hire freelancers at a reasonable price.

- There's no place where freelancers (Students) build their portfolio as well as could provide their services and master in their crafts.

- The portal also provides the freelancers with the required training in their respective field.

- The portal needs to be a bridge between freelancers and the hirers.

- The existing portals don't allow to report false users. Whereas this portal will allow the users to report someone for inappropriate behavior. And the admin will take the required action on those reported behavior.

- The admin can also use affiliated links to get earnings on the course.

- The Admin can update and add in new courses

1.2 OBJECTIVES

- At present, there is a job-crisis and it's very hard to find jobs for employees. Even if the employees are having good talent, they suffer in finding the right job.

- Also that is not easy for the recruiters to recruit perfect employees what they exactly want. Some employees are employed, but not at the place where they really should be.

- This website is a portal that connects the freelancers (students/ freshers) with the people that need freelancing services.

- Also, this website also helps freelancer (students/ freshers) to showcase their portfolio in a presentable way.

- Website provides the freelancers with the option of training themselves with the courses available on Udemy, Edx and Coursera.

- The negotiation between client and freelancers could be done via Emails or one to one(in some cases).

1.3 PURPOSE AND SCOPE

1.3.1 Purpose

- We have developed the hiring-portal. This portal can handle data of freelancers who are looking for jobs and the people who are looking to hire these freelancers.

- This portal gives categories so that the hirer won't keep wandering around the website.

- Thereby, reducing the time of hirer and providing easy access to what he/ she requires.

- The classic Functionality of this Application focuses on data storage. However, the means to retrieve and analyze data, to extract, transform and load data, and to manage the data dictionary.

- An administrator is provided through which can enter Recruiter's record /type of jobs/jobseeker's description.

- The portal allows the freelancers to maintain their portfolios. And have them easily displayed for the hirer.

- There is also reporting mechanism in the portal, where the user can report other report. Then the administrator can remove the user i.e. delete their account and take appropriate actions on them.

- The portal also provide freelancer with necessary training if he/she requires it.

- The administrator can also control which courses the freelancer can take.

1.3.2 Scope

- This system can run only on Windows platform (IIS server only).

- Supported only in My SQL database.

- No security of data (No backup).

- Does not deal with payments.

- No Push notifications.

- Can only hire and register from the given/ provided categories.

- No division according to regions.
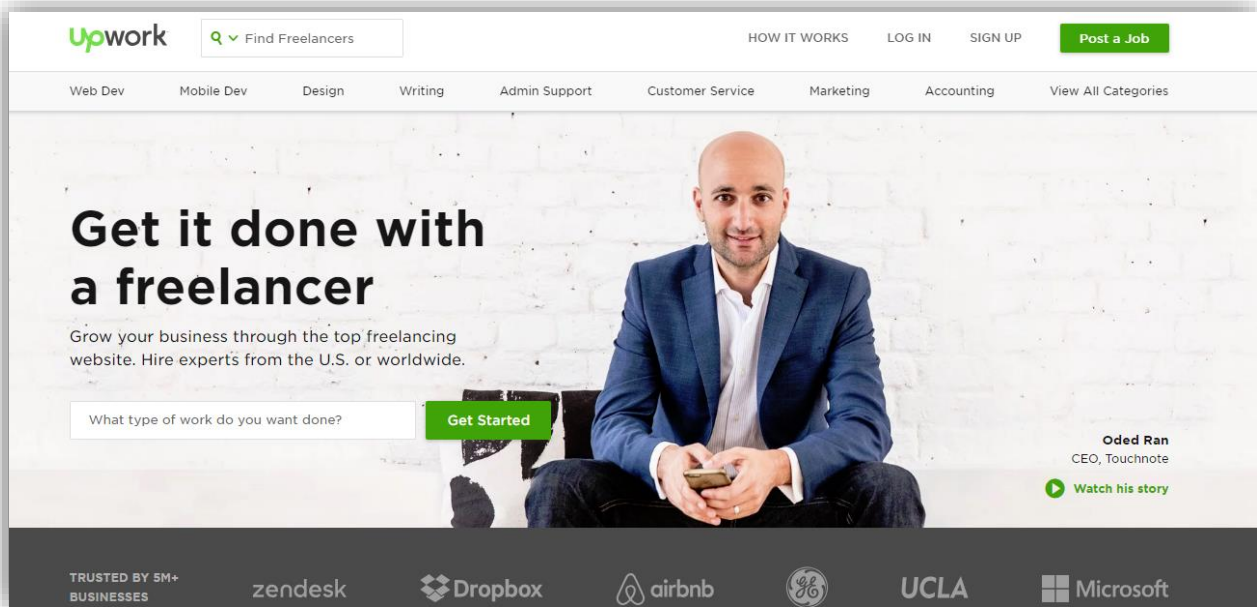
- Supportive language is only English.

2. SYSTEM ANALYSIS

2.1 EXISTING SYSTEMS

- The existing way to hire someone was to ask your mates/ family/ friends etc. for recommendations or go places to fix a thing or to get a service.
- If a freelancer wants to start his business he/ she could only start with recommendations and has to very much depend on other people for getting work rather than getting hired on the basis of the previous works.
- Other existing systems were online websites.
- The major websites are:
    - Upwork.com
    - Freelancer.com
- There is a lot off waste of time and energy in these methods
- The existing systems lack features like providing training to those who need it
- The systems are designed in such way that the fresher cannot start and only the experienced people can get the jobs.
- There is no portfolio management system in these portals.

Disadvantages:
- Non-availability of data when required.
- Resume sent manually, it is a waste of papers and consumes a lot of time
- Difficulty to search for required task vacancy.
- It takes a long time for clients.
- In this existing system the hiring person may or may not get to see the previous works of the service provider.
- There was no portfolio management system in hiring website.
- There is no training provided for the freelancers
- Jumbled User interface.

(Upwork.com)

(Freelancer.com)

2.2 PROPOSED SYSTEMS

- The proposed system is a web-based application i-lancer.com (hiring portal) which allows applicants and employers to register their details.
- The hirers can simply browse through the collection of freelancers.
- And view their previous works (portfolio) And contact them.
- The freelancers can create their portfolio on the portal and can showcase them
- The portal also has way to provide training to under train freelancers and also help them to get their profile UpToDate with the new things and ways to their crafts.
- The proposed system is based on ASP.NET MVC 5 and SQL Express.
- The proposed system can allow users to report other users for their inappropriate behavior may be online or may be in person.
- The admin can ban the reported users from accessing the portal anymore.
- The admin can add and remove courses from the course list

Advantages:

- Ease of posting job vacancy by freelancers.
- Ease of filtering of the freelancer according to the domain.
- Provides freelancers with the required training.
- Provides the freelancers a path to showcase their portfolios.
- Ease of communication between job seeker and employer
- Easy reporting mechanism.
- Quick easy and to the point UI.
- Clients can hire freelancers purely on the base of skills they have.

  (i.e. looking and judging them from their portfolios.)

Screenshots of project

I-Lancer.com

Hi!

[I WANT TO HIRE]   [I LANCE]

Index page

I-Lancer.com

Login for freelancer

[LOGIN]   [REGISTER]

Index page for freelancer
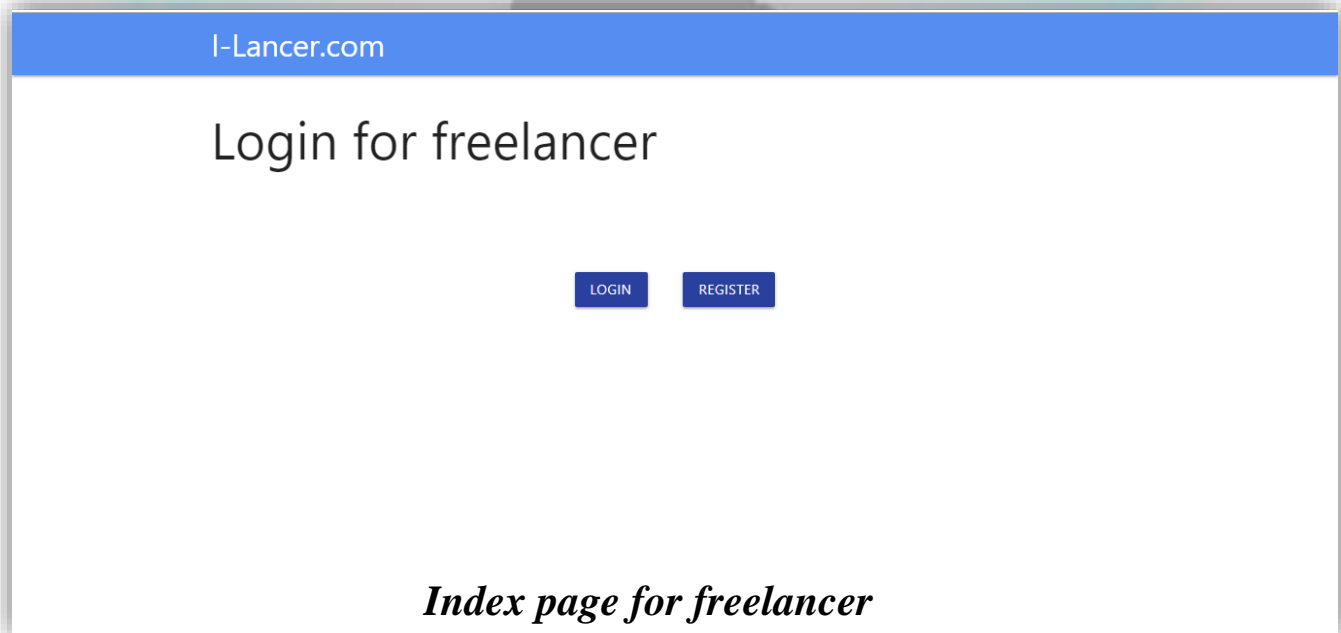
I-Lancer.com

Login for Hirers

LOGIN   REGISTER

Index page for freelancer

I-Lancer.com

Name

password

LOGIN

Login Page

2.3 REQUIREMENT ANALYSIS

- The goal of the requirement analysis and specification phase is to clearly understand the customer requirements and to systematically organize the requirements into a specification document.

- The main activities carried out during requirements analysis and specification phase are of two types as follows: Requirements gathering and analysis Requirements Specification

- The main purpose of the requirements analysis activity is to analyze the collected information to obtain a clear understanding of the product to be developed, with a view to removing all ambiguities, incompleteness, and inconsistencies from the initial customer perception of the problem.

- The SRS document is the final outcome of the requirements analysis and specification phase.

- There are 3 main types of problems in the requirements that the analyst needs to identify and resolve:

  - **Ambiguity**

  - **Inconsistency**

  - **Incompleteness.**

- We use google forms to conduct survey to analyze our software requirements.

[Link of the google forms]

For employers (Hirer)

https://goo.gl/forms/yaClMHjDRrcznZiF3

For Freelancers

https://goo.gl/forms/0SBB5KpaP0yQ520h1

Questions	Freelancer	Hirer
What is the type of software that you what to develop	Ans. Portal that can provide us daily jobs	Ans. A portal that gives us options to choose freelancers to do our work
What should be the type of portal?	Ans. A website or app	Ans. Website or app
What is the basic and most important feature that you want?	Ans. Provide jobs	Ans. Provide services.
What are the features you want? List points.	Ans. 1.Provide training 2.Report users 3.View who is hiring 4.Notify when hiring 5.Portfolio management 6.Provide jobs.	Ans. 1. Side by side comparisons of freelancers 2. Report for inappropriate behavior 3. View their previous works
What is your experience in your field	Ans. Fresher	NA
What's the problem with existing systems	Ans. Bad UI and does not provide training	Ans. Bad UI and no reporting mechanism
Do you have any system specifications?	Ans. No.	Ans. No
What are extreme level features?	Ans. Provide daily jobs with high income.	Ans. Video call interview
Do you need organization level login?	Ans. No	Ans. No
Do you prefer ads on the portal or premium and ad free experience	Ans. Free	Ans. Free
Do you prefer a theme?	Ans. Yes	Ans. Yes

Features	Priority			
Community forum			Low Priority	
Browse by Type	High Priority			
Adding portfolio	High Priority			
Viewing portfolio	High Priority			
Notifying Freelancer about the work opportunity	High Priority			
Chat feature to discuss the deal			Low Priority	
Provide Professional Training		Medium Priority		
Interview Freelancer via video chat				Ignorable
Reporting the inappropriate behavior	High Priority			
Adding Reviews	High Priority			
Verifying Freelancers or Hirers with code	High Priority			

2.4 HARDWARE REQUIREMENTS

Minimal Hardware Requirements for end user:

• Intel Pentium 4.1GHz processor

• 512MB SDRAM

• 1GB Hard disk space

• Internet Connection

• Key Board

• Mouse

Minimal Hardware Requirements for Developer:

• Intel i3 5th generation

• 4GB RAM

• 500GB Hard disk space

• Internet Connection

• Key Board

• Mouse

2.5 SOFTWARE REQUIREMENTS

Minimal Software Requirements for end user:

• Modern OS

• Browser

Minimal Software Requirements for Developer:

• Windows 7(or higher)

• Microsoft Visual Studio 2017(or higher)

• Microsoft .Net Framework 4(or higher)

• Entity framework 5

• IIS

2.6 JUSTIFICATION OF SELECTED TECHNOLOGY

<u>ASP.NET</u>

- ASP.NET provides a unified Web development model that includes the services necessary for you to build enterprise-class Web applications. ASP.NET is part of the .NET Framework and enables you to take full advantage of the features of the common language runtime, such as type safety, inheritance, language interoperability, and versioning.

- **<u>ASP.NET MVC</u>** is an open-source software from Microsoft. Its web development framework combines the features of MVC (Model-View-Controller) architecture, the most up-to-date ideas and techniques from Agile development and the best parts of the existing ASP.NET platform. This tutorial provides a complete picture of the MVC framework and teaches you how to build an application using this tool.

- By the time ASP.NET MVC was announced in 2007, the MVC pattern was becoming one of the most popular ways of building web frameworks.

- In April 2009, the ASP.NET MVC source code was released under the Microsoft Public License (MS-PL). "ASP.NET MVC framework is a lightweight, highly testable presentation framework that is integrated with the existing ASP.NET features.

<u>Benefits of ASP.NET MVC</u>

Following are the benefits of using ASP.NET MVC –
- Makes it easier to manage complexity by dividing an application into the model, the view, and the controller.
- Enables full control over the rendered HTML and provides a clean separation of concerns.
- Direct control over HTML also means better accessibility for implementing compliance with evolving Web standards.
- Facilitates adding more interactivity and responsiveness to existing apps.
- Provides better support for test-driven development (TDD).
- Works well for Web applications that are supported by large teams of developers and for Web designers who need a high degree of control over the application behavior.

3. SYSTEM DESIGN

3.1 MODULE DIVISION

Freelancer Section

Home Module

- User enter account details to become a member.
- Verifies the freelancers by sending email.
- Profile view.
- Edit information like payroll and phone no.
- Can change password.

Portfolio Module

- Can View Portfolio.
- Can add to Portfolio.
- Can use portfolio API.
- Can use portfolio embedded plugin.
- Share their portfolio to other people.

Email Module

- Can sends email to admin.

Courses Module

- Can view the course that are added by the admin.
- Can go to the website to which the courses are sold.

Notifications Module

- Can view the different job offerings from the Employers.
- Can accept, reject or keep on waiting.
- Can view the location on the map (Google Maps).
- Can message the hirer directly (via WhatsApp).
- Can Generate invoice.

Report module

- Can report any employer with email.

Review Module

- Can view the given reviews

Community Module

- Can see recent 50 posts.

- Can add your post.

- Can see all your posts.

- Can see how many views they have.

Hiring Section

Home Module

- User enter/edit their account information and primary contact details.

- Change passwords (via Email).

- Activation emails send it to the user after registration.

- Profile view.

- View last hired.

- Report and review last hired.

Hiring Module

- Can view the freelancers category-wise.

- Can sort them category wise.

- Can search them with any parameter.

Details Module

- Can see their portfolios.

- Can see their reviews given by other hirers.

- Can see their payroll.

- Can see other details.

Notify Module

- Can add the meetup details.

- Sends freelancer mail (Automatically).

Report module

- Can report any employee/ freelancer.

Review Module

- Can write a review to freelancers they have hired.

Mail Module

- Mail admin.

View Hired

- Verified code.

- View hired status.

- Add review.

- Add report.

Admin Module

Home Module

- Add new admin.

- View Email address of current admin.

Freelancers Module

- Can view the list of all the employees.

- Can delete the reported User.

Hirers Module

- Can view all the Employers list.

- Can delete the reported employer.

Mail Module

- Can see the mails form users.

Statistics Module

- View all the OLAP.

- View Graph.

- Predict the future decisions.

- Print the analysis.

Report Module

- See reported users.

- Sort them to see the number of offenses.

- View their date of complain.

- View from and against.

- View their offense.

- Search via any parameters.

Courses Module

- Can add to the list of the courses.

- Can view all the list of projects.

Reported Users Module

- Can view the list of reported users.

Community Module

Post-list Module

- View posts by the freelancers.

Post Module

- Read whole article.

- See date and time when posted.

- View read.

View-Portfolio Module

- View portfolio module.

- Hire them.

- Get sharable URL.

3.2 DATA DICTIONARY

A data dictionary, or metadata repository, as defined in the IBM Dictionary of Computing, is a "centralized repository of information about data such as meaning, relationships to other data, origin, usage, and format".

Oracle defines it as a collection of tables with metadata. The term can have one of several closely related meanings pertaining to databases and database management systems (DBMS):

- A document describing a database or collection of databases

- An integral component of a DBMS that is required to determine its structure

- A piece of middleware that extends or supplants the native data dictionary of a DBMS My Database: Microsoft SQL server Table Structure for

Migration History

Worker Table

Name	Type	Constraints	Description
W_Id	Int	Primary key	Freelancer ID
W_fname	Varchar (50)	Not null	Freelancers first name
W_lname	Varchar (50)	Not null	Freelancers last name
W_Email	Varchar (50)	Not null	Email address
W_Profession	Varchar (50)	Not null	Profession of freelancer
W_Phone	Varchar (10)	Not null	Phone no of freelancer
W_DOB	Datetime	Not null	Date of birth of freelancer
W_Ismailverified	Bit	null	Value for email Verification
W_Activationcode	Uniqueidentifier	null	Activation code
W_password	Varchar (100)	Not null	Encrypted password
W_Expsal	Nchar (10)	Not null	Expected Salary
W_ResetPasswordCode	Nchar (100)	null	Password reset code

Hirer Table

Name	Type	Constraints	Description
H_Id	Int	Primary key	Hirer ID
H_fname	Varchar(20)	Not null	Hirer first name
H_lname	Varchar(20)	Not null	Hirer last name
H_Email	Varchar(20)	Not null	Email ID
H_Phone	Varchar(20)	Null	Phone no
H_DOB	Varchar(20)	Not null	Password
H_Ismailverified	Varchar(200)	Null	Value for email Verification
H_Activationcode	Varchar(200)	Null	Activation code
H_password	Varchar(20)	Not null	Encrypted password
H_Organiztion	Varchar(20)	Null	Organization or company name
H_ResetPasswordCode	NCHAR (100)	Null	Reset Password Code

Notifications Table

Name	Type	Constraints	Description
N_Id	Int	Primary key	Notification ID
W_Id	Int	Foreign key	Freelancer ID
H_Id	Int	Foreign key	Notification text
N_msg	Varchar (100)	Not null	Notification message
N_Wname	Varchar (50)	Null	Worker name
N_Hname	Varchar (50)	Null	Hirer name
N_Time	Datetime	Null	Notification generated time.
N_otp	Uniqueidentifier	Null	OTP
N_Dplace	Varchar (50)	Null	Decided Place
N_Ddate	Varchar (50)	Null	Decided Date
N_Dtime	Varchar (50)	Null	Decided Time
N_station	Varchar (50)	Null	Station selected
N_pin	Int	Null	Pin Code
N_status	Varchar (10)	Null	Workers Status
N_Street	Varchar (70)	Null	Street nearest
N_district	Varchar (20)	Null	District
N_Code	Varchar (10)	Null	Verification Code

Portfolio Table

Name	Type	Constraints	Description
Pr_id	Int	Primary key	Portfolio ID
W_id	Int	Foreign key	Freelancer ID
Pr_imgLink	Varchar(50)	Not null	Portfolio Image link

Administrator Table

Name	Type	Constraints	Description
Admin_id	Int	Primary key	Administrator's ID
A__email	Varchar(50)	Not null	Administrator's email

A_password	Varchar(50)	Not null	Password

Report Table

Name	Type	Constraints	Description
R_Id	Int	Primary key	Report Id
W_Id	Int	Foreign key	Freelancer ID
H_Id	Int	Foreign key	Hirer's ID
R_Report	Varchar(50)	Not null	Report text
R_date	Datetime	Null	Report time
R_from	Varchar(50)	Not Null	Report from
R_against	Varchar(50)	Not null	Report against

Review Table

Name	Type	Constraints	Description
R_Id	Int	Primary key	Review ID
W_Id	Int	Foreign key	Freelancer ID
H_Id	Int	Foreign key	Hirer ID
R_Review	Varchar (150)	Not null	Review text
Rating	Int	Not null	Rating
R_paymethd	Varchar (20)	Null	Payment method
R_Edate	Date	Null	Date of Review
W_fname	Varchar (50)	Null	Reviewee's name
R_Payd	Varchar (30)	Null	Amount payed
H_fname	Varchar (50)	Null	Reviewer name

Course table

Name	Type	Constraints	Description
C_id	Int	Primary key	Course ID
C_name	Varchar(100)	Not null	Course Name
C_website	Varchar(100)	Not null	Website name
C_link	Varchar(200)	Not null	Website link
C_Author	Varchar(40)	Not null	Course Author

MailDB Table

Name	Type	Constraints	Description
M_id	Int	Primary key	Mail Id
M_mess	Nvarchar(750)	Not null	Mail
M_Form	Varchar(50)	Not null	Mail from
M_Subject	Varchar(100)	Not null	Mail subject
M_Time	Datetime	Null	Mail time

Post Table

Name	Type	Constraints	Description
Pst_id	Int	Primary key	Post Id
Pst_Title	Varchar(100)	Not null	Post title
Pst_post	Nvarchar(MAX)	Not null	Post
Pst_time	Datetime	Not null	Post time
Pst_Shtpost	Varchar(100)	Null	Short Post
Pst_read	Int	Null	Read/ Views
Pst_wprof	Varchar(50)	Null	Freelancer's profession
Pst_Wmail	Varchar(55)	Null	Freelancer's Mail

Pin Table

Name	Type	Constraints	Description
Pin_id	Int	Primary key	Pin ID
P_loc	Varchar(50)	Not null	Location of places
P_pin	Int	Not null	Pin code
P_dist	Varchar(50)	Not null	District

Station Table

Name	Type	Constraints	Description
St_id	Int	Primary key	Station ID
Station	Varchar(50)	Not null	Station name

Status Table

Name	Type	Constraints	Description
Sts_id	Int	Primary key	Status ID
Status	Varchar(50)	Not null	Status

Profession Table

Name	Type	Constraints	Description
P_id	Int	Primary key	Profession ID
Profession	Varchar(50)	Not null	Profession name
value	Varchar(50)	Not null	Value for calculation
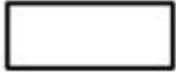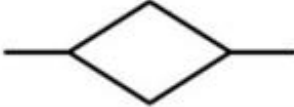
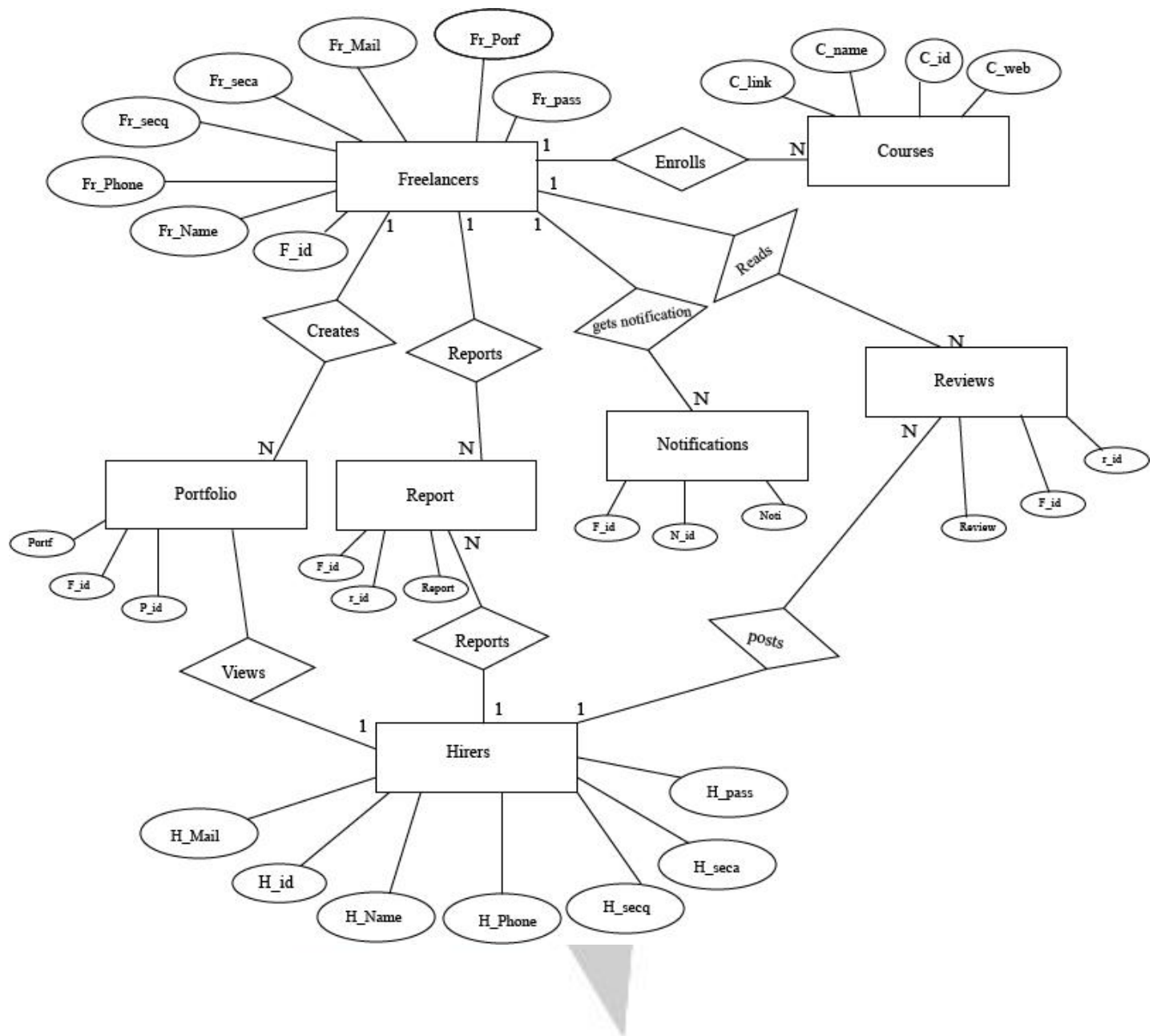# 3.3 Entity Relationship Diagram (ER diagram)

An entity-relationship model is a systematic way of describing and defining a business process. The process is modeled as components (entities) that are linked with each other by relationships that express the dependencies and requirements between them, such as: one building may be divided into zero or more apartments, but one apartment can only be located in one building. Entities may have various properties (attributes) that characterize them. Diagrams created to represent these entities, attributes, and relationships graphically are called entity–relationship diagrams. An ER model is typically implemented as a database. In the case of a relational database, which stores data in tables, which represent the entities? Some data fields in these tables point to indexes in other tables; such pointers represent the relationships.

STEPS FOR CREATING AN ER DIAGRAM

- Determine the data entities.

- Generate the list of potential entity relationship.

- Determine relationship between entities. \

- Develop individual ERD.

ER DIAGRAM SYMBOLS AND THEIR MEANINGS

▭	Entity
◇	Relationship
⬭	Simple Attribute
⬯	Multivalue Attribute
⬭⬭⬭	Composite Attribute
⬭	Derived Attribute

Entity Relationship diagram

3.4 DFD & UML

3.4.1 Data flow Diagrams

Data flow diagram is graphical representation of flow of data in an information system. It is capable of depicting incoming data flow, outgoing data flow and stored data. The DFD does not mention anything about how data flows through the system. There is a prominent difference between DFD and Flowchart. The flowchart depicts flow of control in program modules. DFDs depict flow of data in the system at various levels. DFD does not contain any control or branch elements.

Types of DFD:

Data Flow Diagrams are either Logical or Physical.

• Logical DFD

    - This type of DFD concentrates on the system process, and flow of data in the system.

• Physical DFD

    - This type of DFD shows how the data flow is actually implemented in the system. It is more specific and closer to the implementation. DFD Components DFD can represent Source, destination, storage and flow of data using the following set of components –
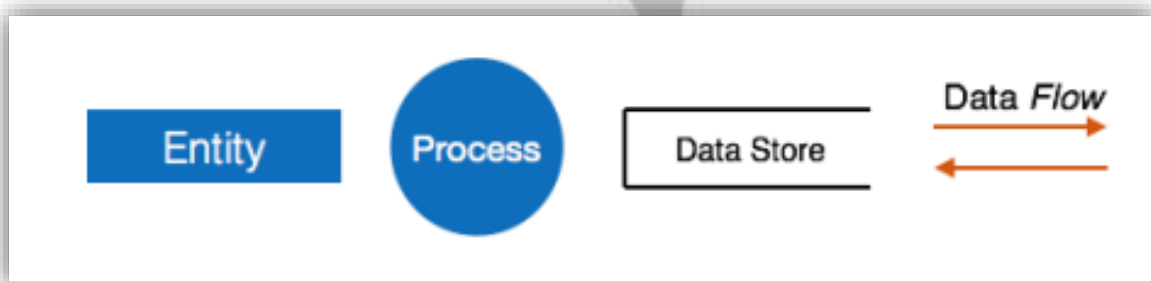
• Entities

- Entities are source and destination of information data. Entities are represented by a rectangle with their respective names.

- Process
  - Activities and action taken on the data are represented by Circle or Round-edged rectangles.
- Data Storage
  - There are two variants of data storage - it can either be represented as a rectangle with absence of both smaller sides or as an open-sided rectangle with only one side missing.
- Data Flow
  - Movement of data is shown by pointed arrows. Data movement is shown from the base of arrow as its source towards head of the arrow as destination
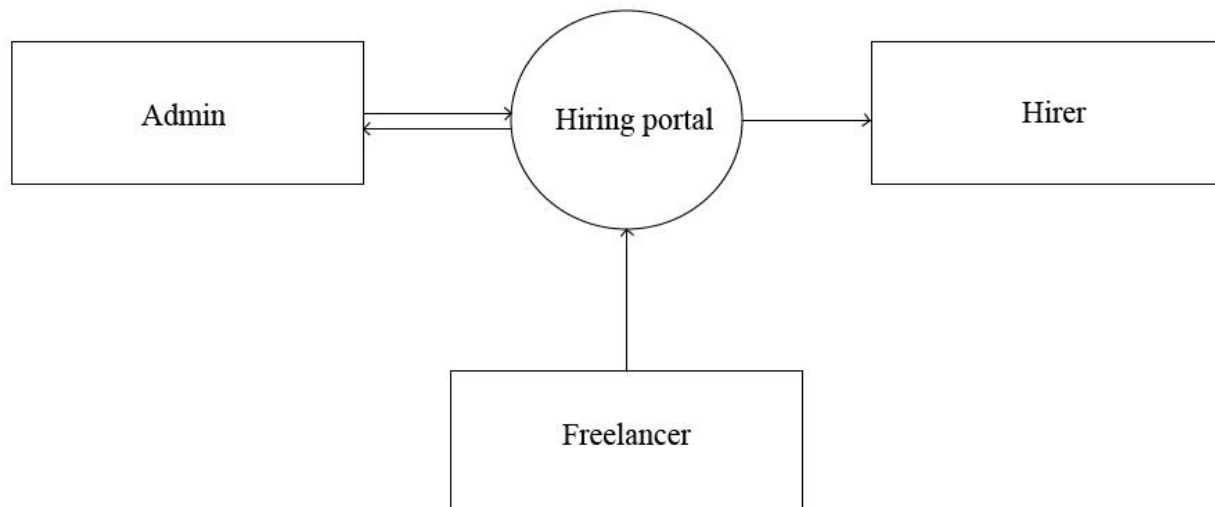
Dataflow diagram level 0

Dataflow diagram level 1

| Freelancer | Details of freelancer | Register | freelancerdb |

Verification of login → Login

Edit and change details → Profile

Details of the courses ← learn ← Coursedb

Notifications ← Read notification ← Notificationdb

Complains → Report → Reportdb

Read Review ← Reviewdb

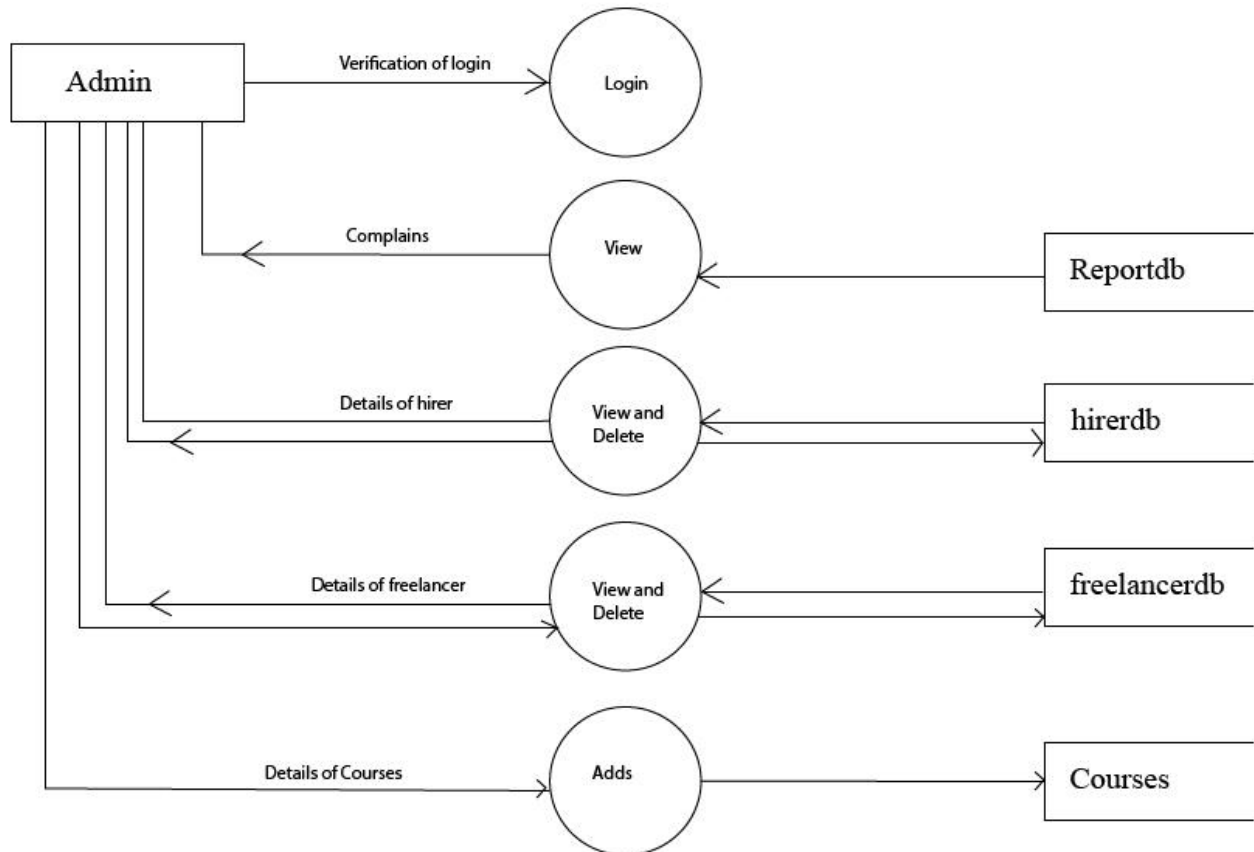Images and text ← Create and update Portfolio ← Portfoliodb
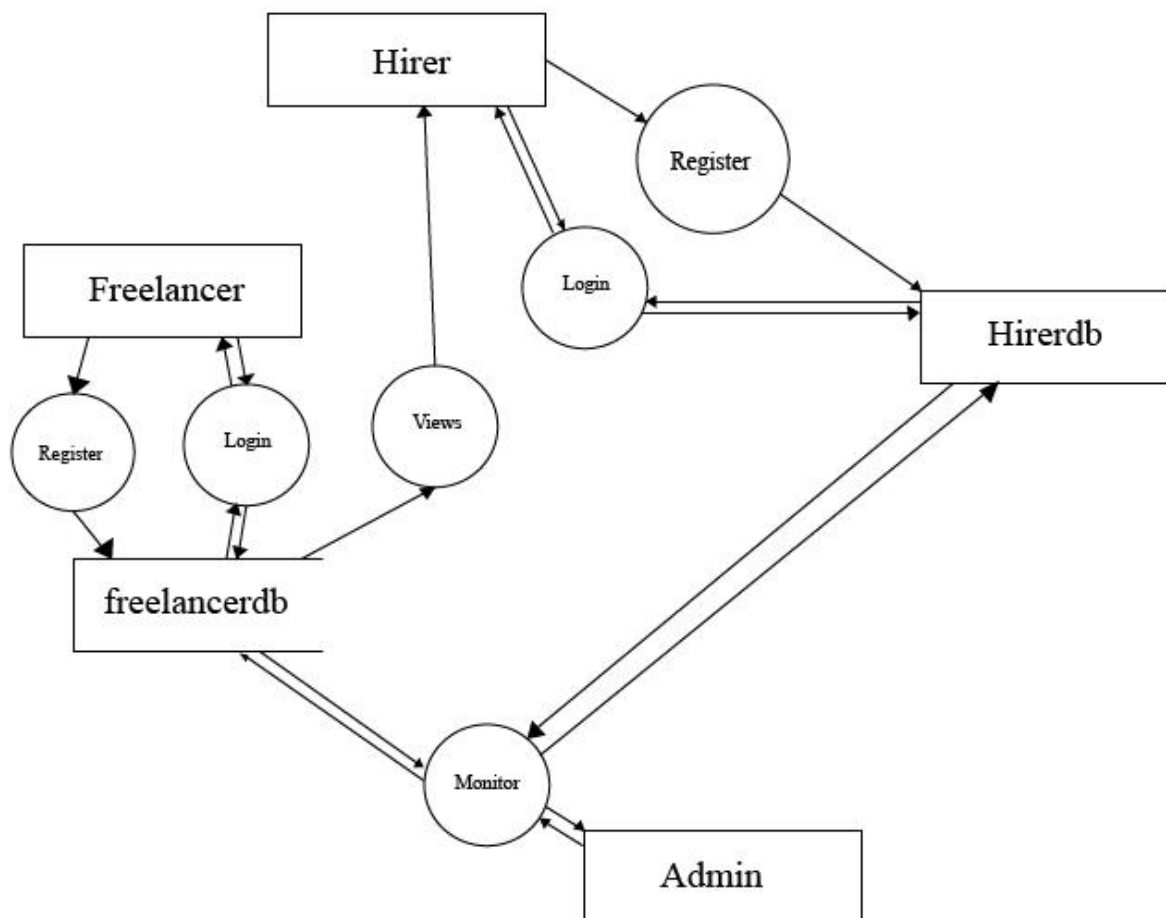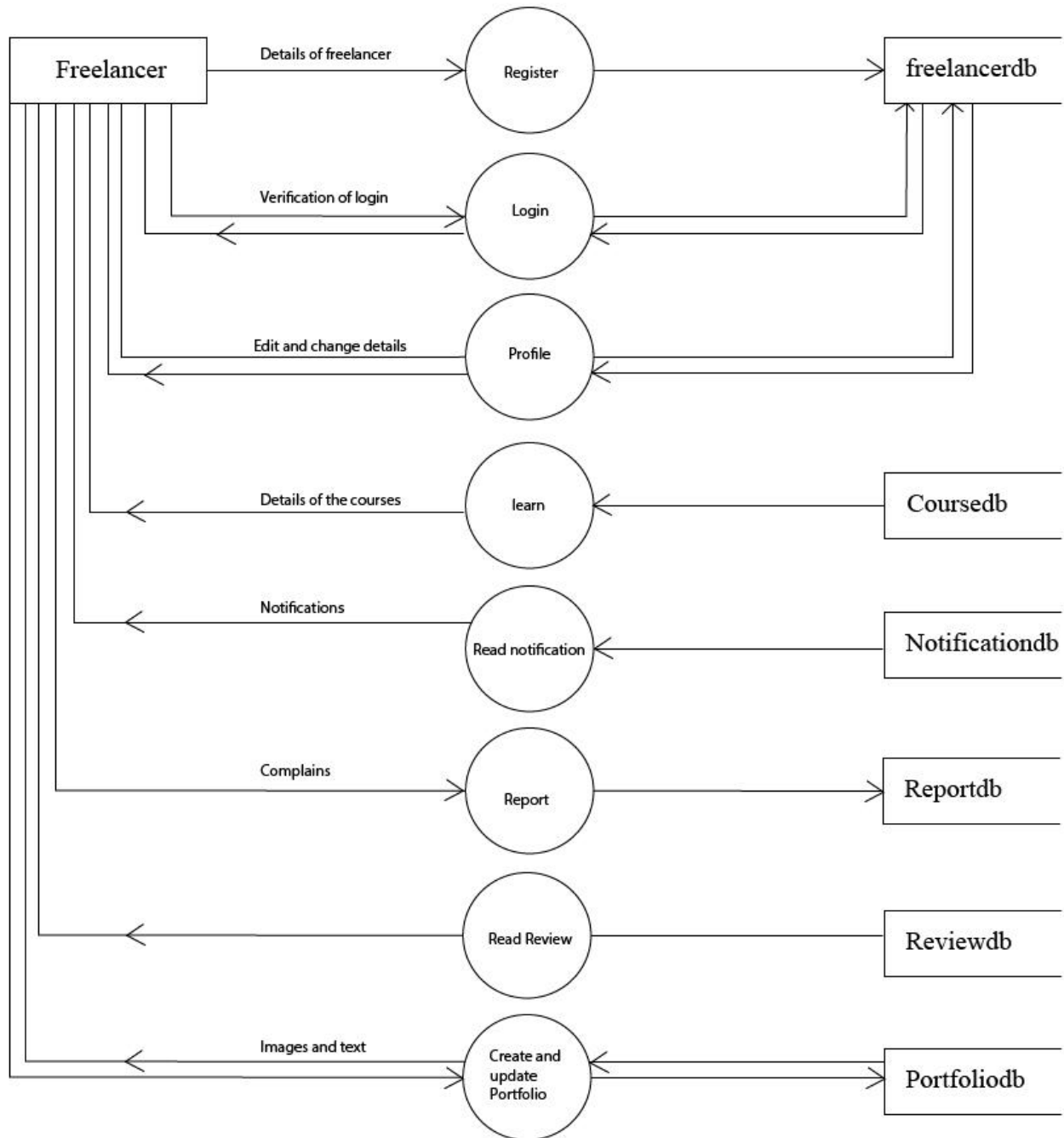
Dataflow diagram level 2(a)
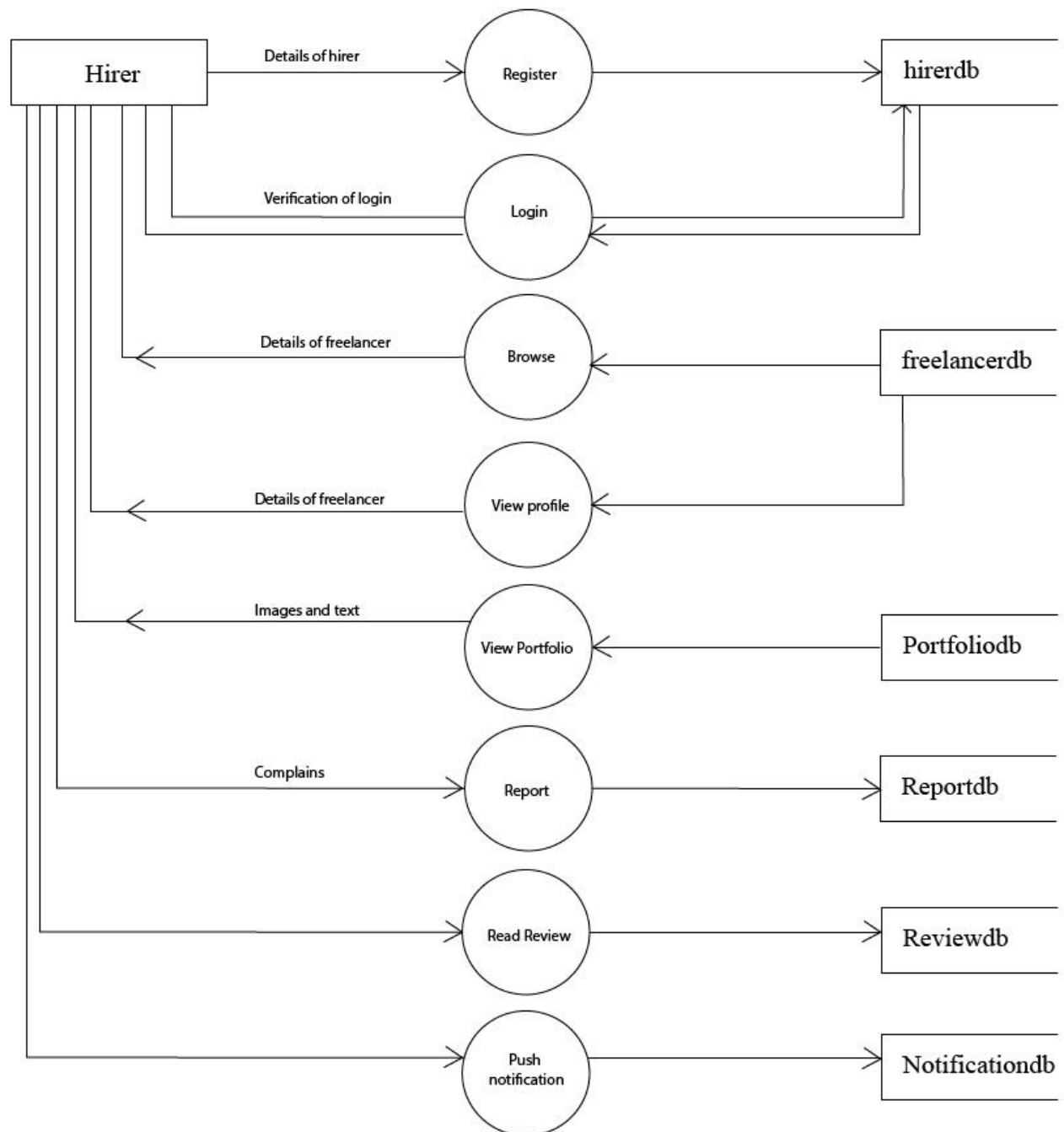
Dataflow diagram level 2(b)

Dataflow diagram level 2(c)

3.4.2 UML Diagrams

Use case Diagrams

Overview

- To model a system the most important aspect is to capture the dynamic behavior. To clarify a bit in details, dynamic behavior means the behavior of the system when it is running /operating.

- So only static behavior is not sufficient to model a system rather dynamic behavior is more important than static behavior. In UML there are five diagrams available to model dynamic nature and use case diagram is one of them.

- Now as we have to discuss that the use case diagram is dynamic in nature there should be some internal or external factors for making the interaction. These internal and external agents are known as actors.

- So, use case diagrams are consists of actors, use cases and their relationships. The diagram is used to model the system/subsystem of an application.
- A single use case diagram captures a particular functionality of a system. So, to model the entire system numbers of use case diagrams are used.

Purpose

- The purpose of use case diagram is to capture the dynamic aspect of a system. But this definition is too generic to describe the purpose.
- Because other four diagrams (Activity, Sequence, collaboration and State-chart) are also having the same purpose. So, we will look into some specific purpose which will distinguish it from other four diagrams.
- Use case diagrams are used to gather the requirements of a system including internal and external influences. These requirements are mostly design requirements.

  - Used to gather requirements of a system.
  - Used to get an outside view of a system.
  - Identify external and internal factors influencing the system.
  - Show the interacting among the requirements are actors.
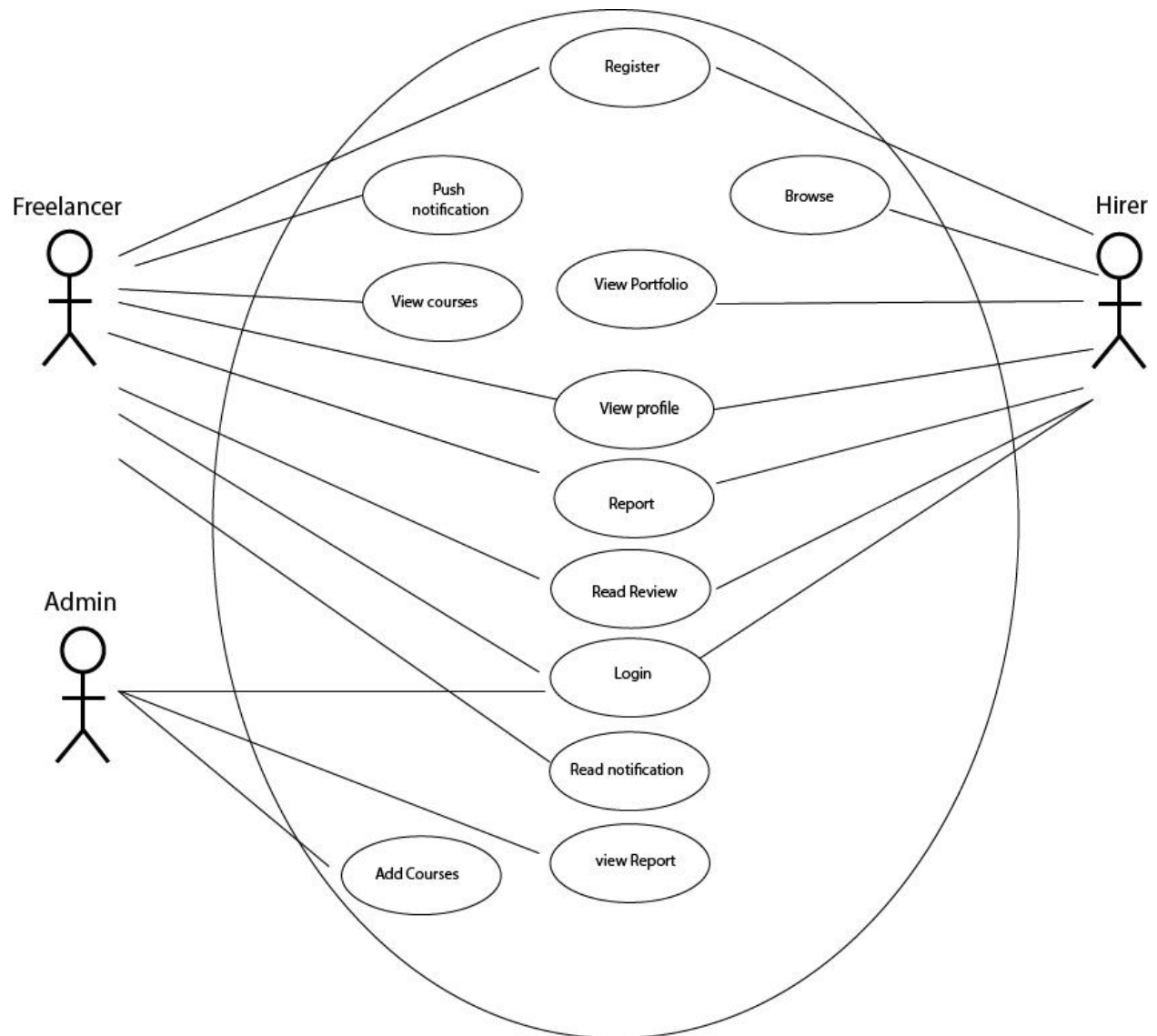
Use case diagram

State transition Diagrams

1. A state diagram, sometimes known as a state machine diagram, is a type of behavioral diagram in the Unified Modeling Language (UML) that shows transitions between various objects.

2. A state machine is any device that stores the status of an object at a given time and can change status or cause other actions based on the input it receives.

3. States refer to the different combinations of information that an object can hold, not how the object behaves.

4. In order to understand the different states of an object, you might want to visualize all of the possible states and show how an object gets to each state, and you can do so with a UML state diagram.

State diagram symbols and components

- Event

  An instance that triggers a transition, labeled above the applicable transition arrow. In this case, "classes end" is the event that triggers the end of the "Being taught" state and the beginning of the "Final exams" state.

- Exit point

  The point at which an object escapes the composite state or state machine, denoted by a circle with an X through it. The exit point is typically used if the process is not completed but has to be escaped for some error or other issue.

- First state

A marker for the first state in the process, shown by a dark circle with a transition arrow.

- State

  A rectangle with rounded corners that indicates the current nature of an object.

  State
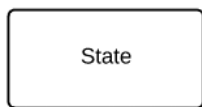
- Terminator

  A circle with a dot in it that indicates that a process is terminated.
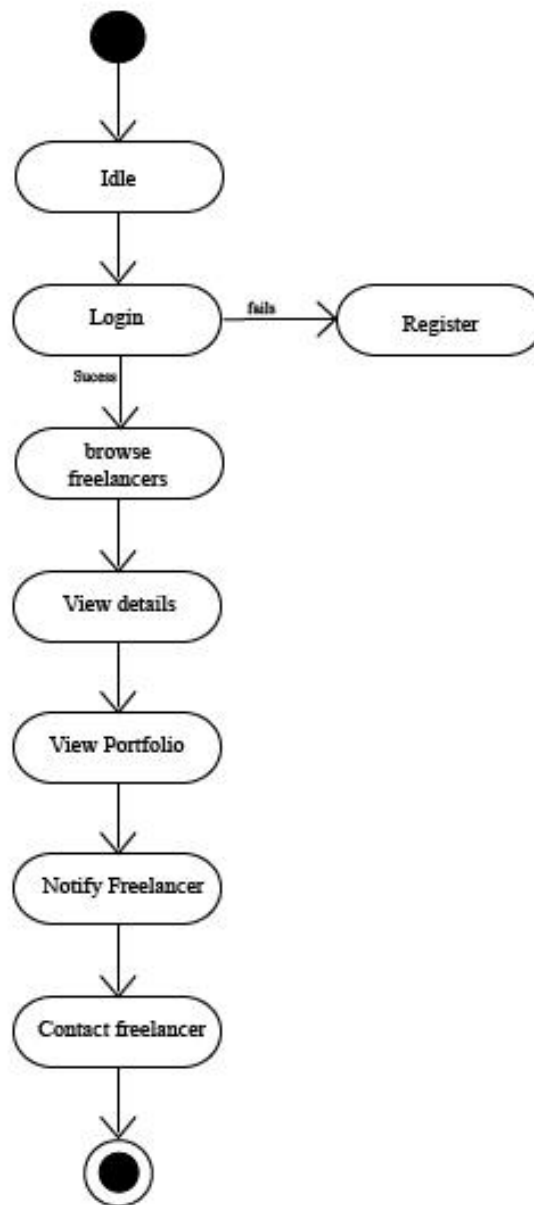
Activity diagram

Activity diagram is basically a flowchart to represent the flow from one activity to another activity.

The activity can be described as an operation of the system.

Admin Module.

Freelancer Module
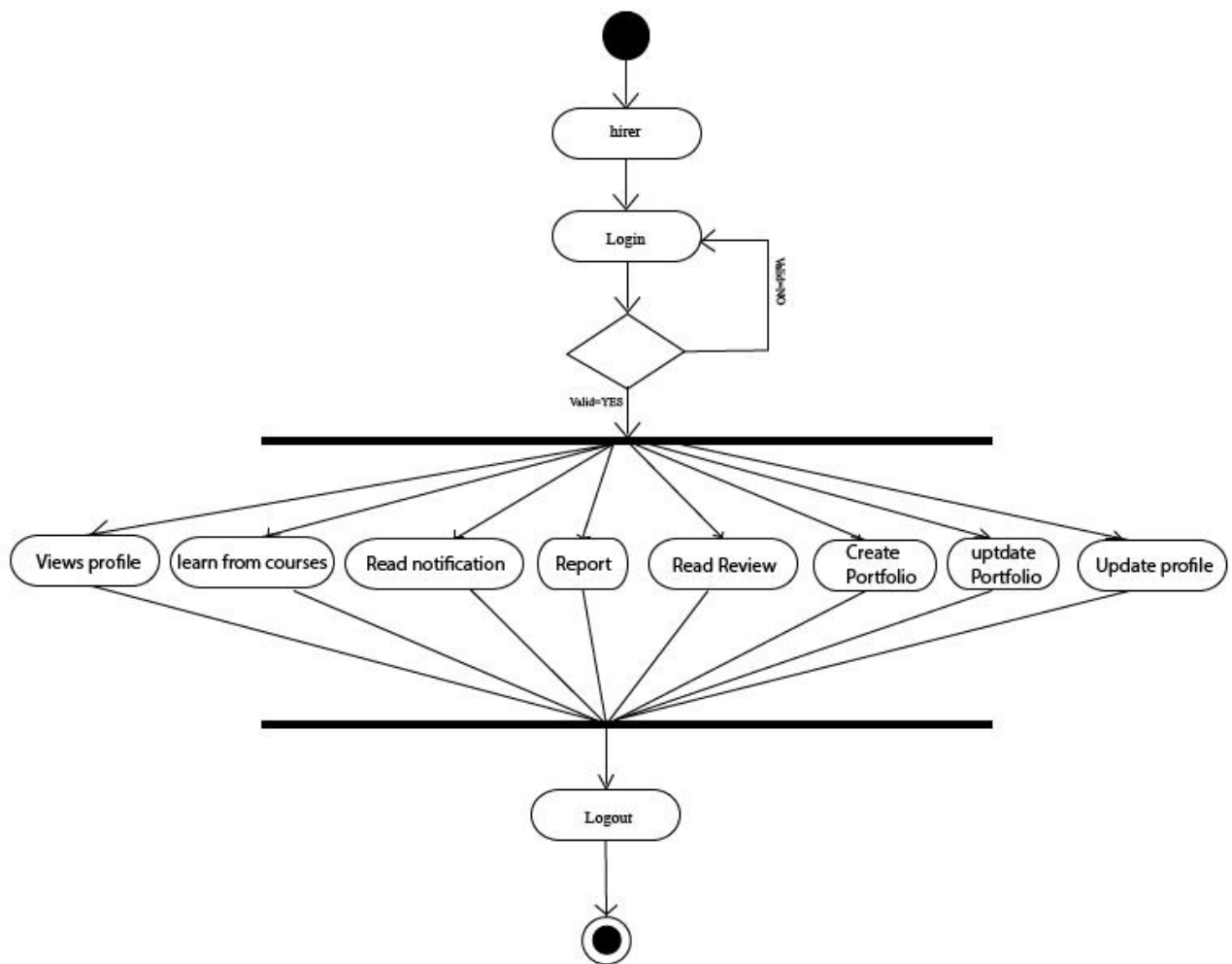
Hirer Module

Class diagram

- Class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects.

Freelancers

- F_id
- Fr_Name
- Fr_Phone
- Fr_pass
- Fr_seca
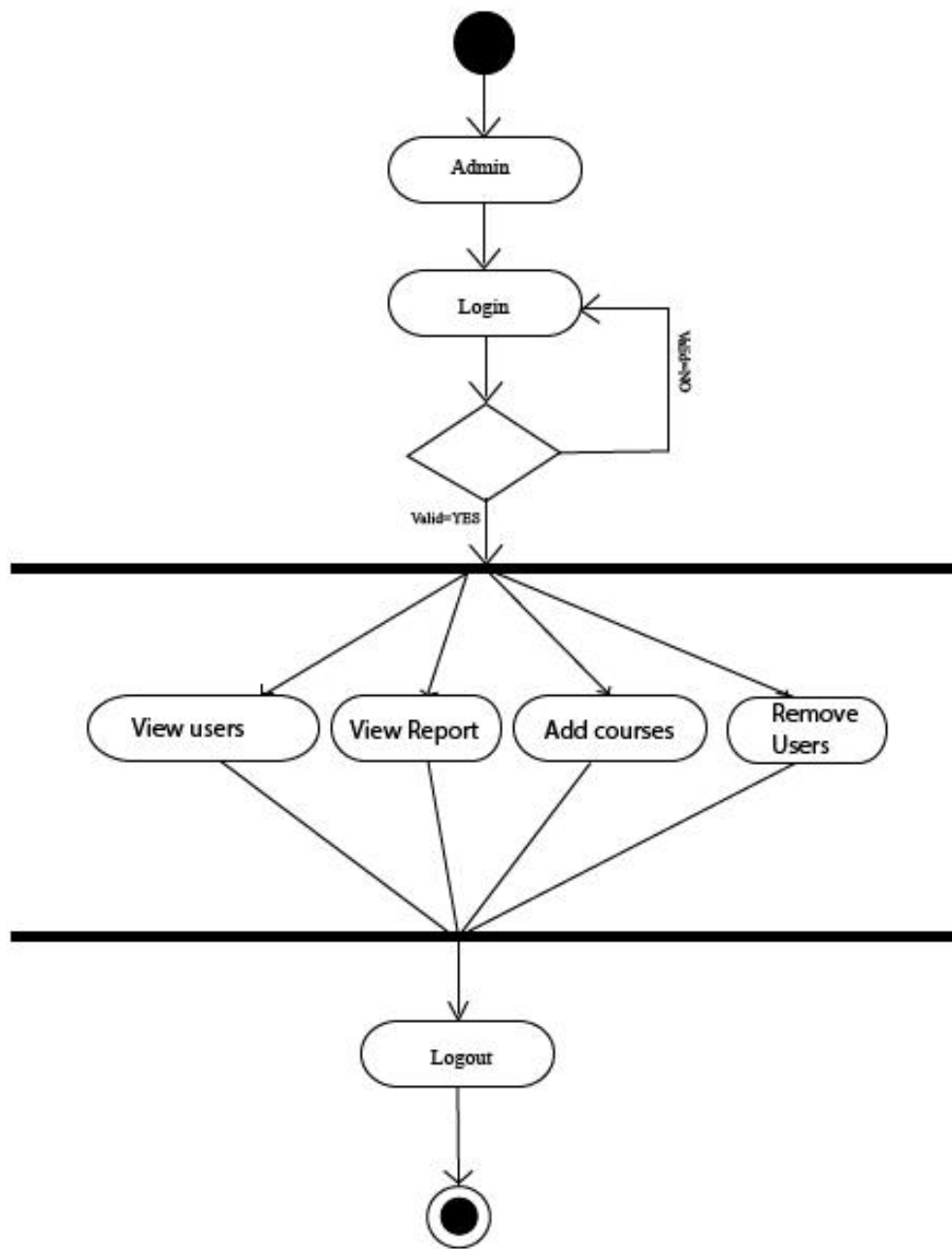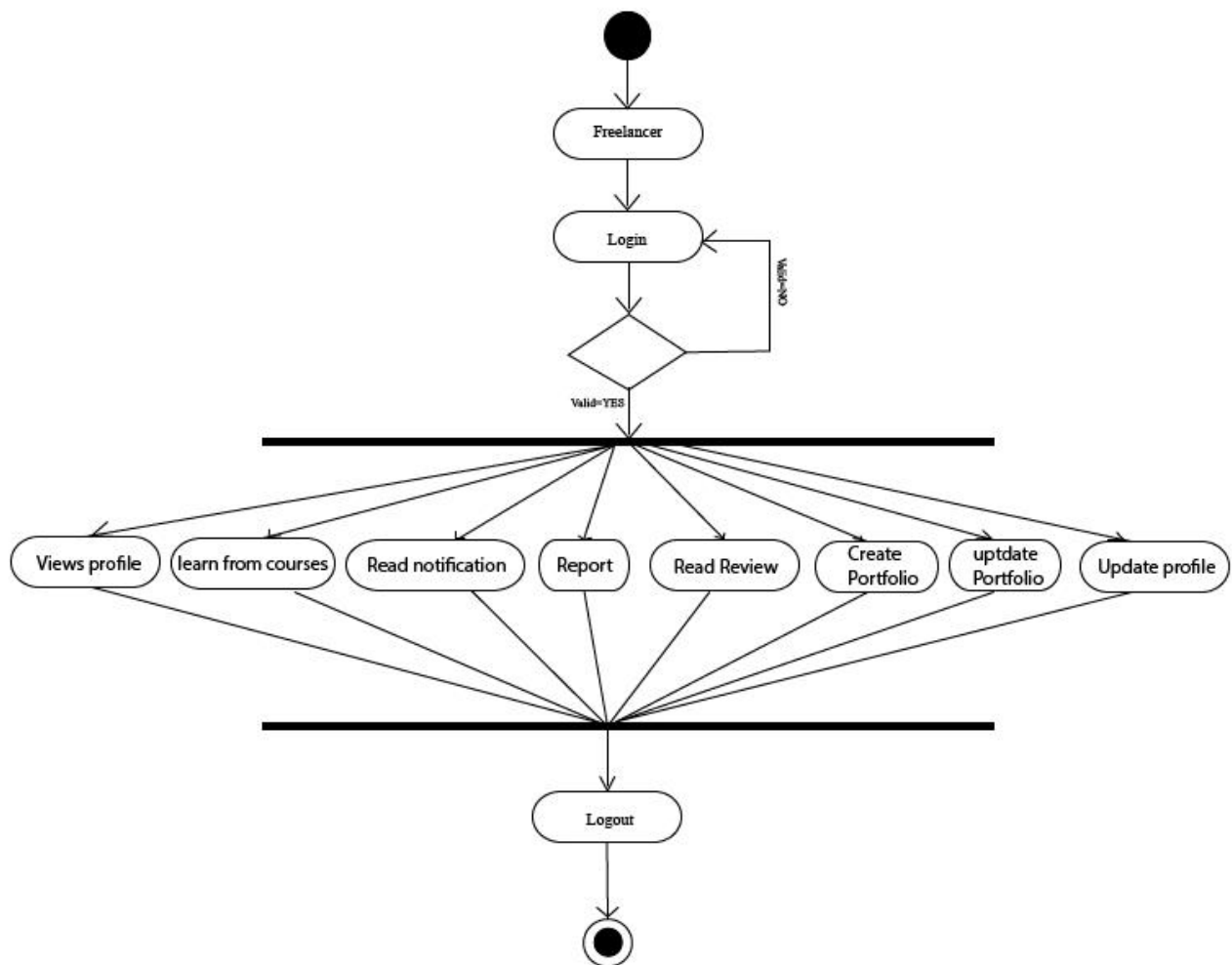- Fr_Mail
- Fr_Porf
- Fr_secq

+Register()
+Login()
+Viewcourses()
+getnotification(F_id,H_id)
+ViewPortfolio()
+AddPortfolio()
+Viewprofile(F_id)
+Report(h_id)
+getReview(F_id)

Notifications

- N_id
- Noti
- F_id

+ ShowNoti(F_id,H_id)
+ AddNoti(F_id,H_id)

Hirers

- H_id
- H_Name
- H_secq
- H_Phone
- H_Mail
- H_seca

+Register()
+Browse()
+getPortfolio(F_id)
+View profile(F_id)
+Report(F_id)
+showReview(F_id)
+pushNotification(F_id, H_id)
+Login()

Reviews

- F_id
- r_id
- Review

+ ShowReviews(F_id)
+ AddReviews(F_id)

Report

- F_id
- r_id
- Report

+ ShowRep(F_id,H_id)
+ AddRep(F_id,H_id)

Courses

- C_link
- C_name
- C_id
- C_web

+ ShowCourses()
+ AddCourses()

Portfolio

- Portf
- F_id
- P_id

+ ShowPortfolio(F_id)
+ AddPortfolio(F_id)

Sequence Diagram

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.
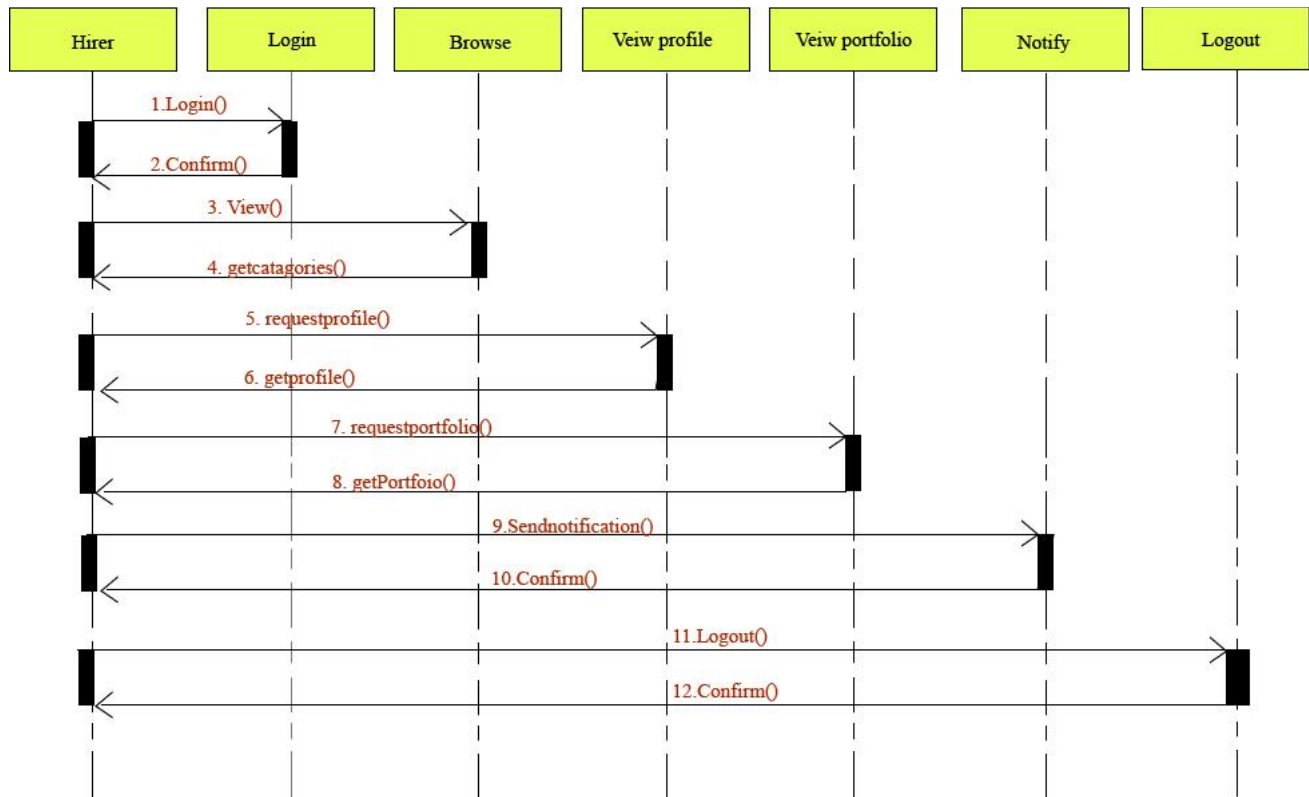
Chapter 4. Implementing and testing

1. USER INTERFACE

Hirer's Login

iLancer.org

Hirer's Login

Email ID

Password

Remember Me

☐

Login   Register Now!

Forgot Password?

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Select Language ▼
Powered by Google Translate

Hirer's Registration

iLancer.org

Hirer's Registration

First Name

Last Name

Email ID

Contact No.

Date of birth

dd-mm-yyyy

Password

Confirm Password

Company(If any)

☐ **Agree licence, terms and conditions to register**
View Terms & conditions

Register   Already registered

Hirer's dashboard

Details Verification Code page:

Review Page

iLancer.org

Write a review

Write your opinion(30 words max):

Ratings:

(0)-Very very Bad 😡   ▼

Amount paid: Mode of payment:

                                Cash   ▼

Back to List   Post

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Report Page

iLancer.org

Report

Describe in less than 30 words:

Back to List   Report

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Edit Profile Page

iLancer.org

Edit details

Date of birth

dd-mm-yyyy

Contact No.

9594355887

Company(If any)

sfaf

Back to List   Create

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Mail Admin page

iLancer.org

Mail Admin

Subject:

Your Message for Admin:

Back Send

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List of freelancers

iLancer.org

Developers List

Hello, **bosco98123@gmail.com**   Logout

Show 10 ▼ entries   Search:

First Name	Last Name	Expected Wage	
Bosco	Correa	1	Go to Profile
Bosco	Correa	10000	Go to Profile
Denver	Gomes	20	Go to Profile
Jaden	Deo	20000	Go to Profile
Stelina	Daniel	20	Go to Profile

Showing 1 to 5 of 5 entries   First Previous 1 Next Last

Freelancer's profile (Hirer's View)

iLancer.org

Freelancer's Profile

First Name: Bosco
Last Name: Correa
Email ID: bosco98123@gmail.com
Profession: Developers
Contact No.: 9594355887
Date of birth: 02-11-1995
Expected Wage: 1

Hire | Portfolio
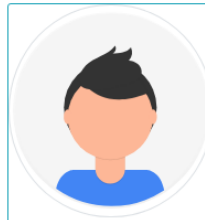
Bosco

Expected pay: 1 ₹
Average rating: 3.0 ⭐

Reviews

This my third test review for Bosco
- Bosco (31-01-2019)
⭐⭐⭐

test
- Bosco (01-02-2019)
⭐⭐⭐

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Select Language ▼

View Portfolio

iLancer.org

View Portfolio
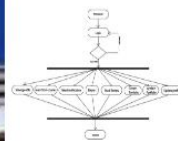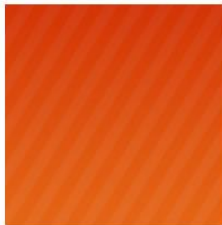
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Select Language ▼
Powered by Google Translate

Set a meet

iLancer.org

Set a meet

Describe your interest:

Enter your Exact meet location (Adviced to meet over a public location ie easily recognizable)

Date: Time:

dd-mm-yyyy

nearest railway Station :

Ambernath ▼

Pin Code:

Back   Set a meet

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Select Language ▼
Powered by Google Translate

Reset password

iLancer.org

Reset Password

Email ID

Submit

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Select Language ▼
Powered by Google Translate

Freelancer's Login

iLancer.org

Freelancer's Login

Email ID

Password

Remember Me
☐

LOGIN   Register NOW!

Forgot Password?

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Select Language ▼
Powered by Google Translate

Freelancer's Registration

iLancer.org

Freelancer Registration

First Name

Last Name

Email ID

Profession

Developers ▼

Your field isn't visible (Tell us!)

Contact No.

Date of birth

dd-mm-yyyy

Expected Wage

Password

Confirm Password

☐ **Agree licence, terms and conditions to register**

View Terms & conditions

[Register]   Already registered?

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Select Language ▼
Powered by Google Translate

Freelancer's dashboard

iLancer.org

Dashboard

Welcome **bosco98123@gmail.com**

Community   Menu ▾   Logout

Details

Name : Bosco Correa
Expected Wage : 1
Profession :Developer
Phone No : 9594355887

Inbox

test after test More details
fsasfasfasfa More details
sf More details
Website More details
This is sample More details

Reviews

test
-Bosco (14-03-2019)   ⭐⭐⭐

This my third test review for Bosco
-Bosco (01-02-2019)   ⭐⭐⭐⭐⭐

test   ⭐⭐⭐

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Add to portfolio

iLancer.org

Portfolio Add

Add One image at a time

Upload Image:

Choose File No file chosen

Add to your asset

View portfolio(Freelancer's View)

iLancer.org

bosco98123@gmail.com's ,

Portfolio View

Get sharable URL:
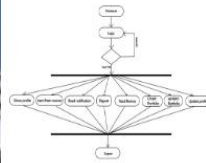
| http://localhost:63180/home/PortfolioView/4 | Copy |

Developers corner

Get embeded code for website:

| <iframe src='http://localhost:63180/home/PortfolioView/4' name='iframe_a' : | Copy |

JSON `API` :
Your Secret API Link:

| http://localhost:63180/home/PortfolioAPI/4 | Copy |

Documentation:

- Your API link is unique Do not share with any one.
- It contains a unique id for each portfolio item.
- Also contains link for the image/Work/ portfolio.
- The link should be bound with our website name while implementing i.e.
  http://localhost:63180

Portfolio API (JSON)

← → C ⓘ localhost:63180/Home/PortfolioAPI/4   ☆

[{"Pr_Id":3,"Pr_imgLink":"~/Image/img02191950301.jpg"},{"Pr_Id":4,"Pr_imgLink":"~/Image/images[52]194220852.jpg"},{"Pr_Id":19,"Pr_imgLink":"~/Image/a190934576.png"},
{"Pr_Id":27,"Pr_imgLink":"~/Image/infurnusmega-proto194128259.png"},{"Pr_Id":28,"Pr_imgLink":"~/Image/infurnusmega-transform190546627.png"}]

Edit profile information

iLancer.org

Worker

Date of birth

dd-mm-yyyy

Contact No.

9594355887

Expected Wage

1

Save   Back to List

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Select Language ▼
Powered by Google Translate

Notification Details page:

iLancer.org

Verify Hirer   Set Status   Your current status: Accept

From : Bosco Correa
Hirer's Email : bosco98123@gmail.com
Hirer's Contact: 9594355887
Hirer's organisation: Mosaic
Nearest railway station: Vidhyavihar
Scheduled Date: 1998-05-06 **Scheduled Time:** 12

Address: Jolly gymnkhana, , 400086

Maps 🗺️   Chat

Message:

test after test

Generate Invoice

Set Status page:

iLancer.org

Change Status

Change your status :

Accept ✔   ▼

Set status   Back   Send Hirer Notifiction

Send Hirer Whatsapp message:

Send the following to +91 95943 55887 on WhatsApp

SEND

Hello *Bosco,* Im your Freelancer(*Bosco*) that you have hired on _ilancer.org_! Hope to see you at _*Jolly gymnkhana around N-12*_Regurads Bosco_

Verify Hirer:

iLancer.org

Verify Hirer

Enter OTP (Case sensitive):

Submit

Reset Password:

iLancer.org

Reset Password

Email ID

Submit

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Send email to Admin:

iLancer.org

Mail Admin

Subject:

Your Message for Admin:

Back Send

Generate Invoice:

Ilancer.org

Bill Id: 50

Freelancer's name: Bosco

Hirer's Name: Bosco

Hired date and Time: 14-03-2019 19:12:58
Place Decided: Jolly gymnkhana
Date decided: 1998-05-06
Time Decided: 12
City:

Actual amount on website: 1

generation date and time: 19-03-2019 17:56:02

Amount paid:

[   ] [enter]

[Paid]

View Courses:

iLancer.org

View Courses

Show [10 ▾] entries   Search: [   ]

Course Name	Website name	Course author	Link
Complete Coloring and Painting Course	Udemy	Scott	To The website
Indian Cooking Paid	Udemy	Jyoti Sawant	To The website
Some course	http://localhost:63180	Bosco	To The website
The Complete 2019 Web Development Bootcamp (Paid)	Udemy	Angela Yu	To The website
Writting (paid)	Udemy	Jhon Doe	To The website

Showing 1 to 5 of 5 entries   First   Previous   1   Next   Last
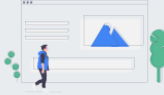
Forum/Community Home page(Freelancer's View):

iLancer.org

Forum

Add | My posts

test by chris

my text ever since the 1500s, ...
11-03-2019 17:32:16

Read More

This is test 2

Contrary to popular belief, Lo ......
09-02-2019 15:51:32

Read More

Forum Freelancer's(self) post:

iLancer.org

My Posts

This is test 2

Contrary to popular belief, Lo ......
09-02-2019 15:51:32

Delete | Read More

This is test 3

Contrary to popular belief, Lo ......
03-02-2019 16:27:37

Delete | Read More

Delete Post:

iLancer.org

Are you sure you want to delete this post?

Delete | Back

View Post:

iLancer.org

This is test 2

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsum passage, and going through the cites of the word in classical literature, discovered the undoubtable source. Lorem Ipsum comes from sections 1.10.32 and 1.10.33 of "de Finibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC. This book is a treatise on the theory of ethics, very popular during the Renaissance. The first line of Lorem Ipsum, "Lorem ipsum dolor sit amet..", comes from a line in section 1.10.32. The standard chunk of Lorem Ipsum used since the 1500s is reproduced below for those interested. Sections 1.10.32 and 1.10.33 from "de Finibus Bonorum et Malorum" by Cicero are also reproduced in their exact original form, accompanied by English versions from

Article by: Bosco Correa

Date & Time:
09-02-2019 15:51:32
Profession Group:
Developers

Back   View portfolio

Add post:

iLancer.org

Add Post

Title:

Post:

Back   Post

Admin Login

iLancer.org

Administrator's Login

Email ID

Password

Login   Home

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Select Language
Powered by Google Translate

Admin Dashboard

iLancer.org

Dashboard

Welcome **bosco98123@gmail.com**

Logout

Logged in as
bosco98123@gmail.com,
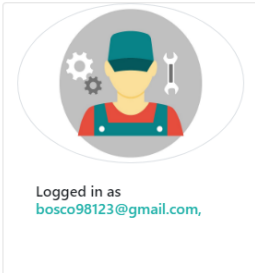
Inbox

Add Courses

Hirer lists

Freelancer lists

Report list

List Profession

Register New Admin

Statistics & reports

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Select Language ▼
Powered by Google Translate

Inbox:

iLancer.org

← Inbox

Show 10 ▼ entries

Search:

From	Subject	Message	M_time
A Name	Profession Request	Guide	02-02-2019 22:24:37
bosco98123@gmail.com	Subject from hi	hirer's message	02-02-2019 23:01:07
bosco98123@gmail.com	Subject1	Admin Help!afsf	02-02-2019 22:58:33
bosco98123@gmail.com	Subject	Admin Help!	02-02-2019 22:55:27
chrisdsouza07@yahoo.in	Chris GG	I'm GG Chris !	11-03-2019 17:34:54

Showing 1 to 5 of 5 entries

First   Previous   1   Next   Last

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Register New Admin:

iLancer.org

← New Admin registration

Email ID

Password

Register   Back

Add Course:

iLancer.org

← Add Courses

Course Name:

Course Website:

Course Link:

C_Author

Back **Add**

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Select Language ▼
Powered by Google Translate

View and Terminate Freelancer's account page:

iLancer.org

← Freelancer's list
Admin panel Freelancer's list

Show 10 ▼ entries   Search: [   ]

W_Id	First Name	Last Name	Email ID	Profession	Contact No.	Date of birth	W_Ismailverified	W_Activationcode	
4	Bosco	Correa	bosco98123@gmail.com	Developers	9594355887	02-11-1995	True ▼	9bf2c113-11dd-445d-89b0-08eb32b35ab1	Delete
6	Denver	Gomes	cjgomesdenver@gmail.com	Developers	9987665949	08-17-1992	True ▼	9bf2c113-11dd-445d-89b0-08eb32b35ab1	Delete

View and terminate Hirer's account page:

iLancer.org

← Hirerlist
Admin panel hirer's list

Show 10 ▼ entries   Search: [   ]

H_Id	First Name	Last Name	Email ID	Contact No.	Date of birth	H_Ismailverified	H_Activationcode	Organization	
8	Bosco	Correa	cjgomesdenver@gmail.com	9594355887	08-17-1992	True ▼	89bf9716-a7c2-4920-8f04-4275a1841d8f	Mosaic2	Delete
10	Bosco	Correa	bosco98123@gmail.com	9594355887	08-17-1992	True ▼	a1f7390e-090b-48d8-bd81-	Mosaic	Delete

Reports:

iLancer.org

←

Reports

Print reports

Statistics

Data Analysis

		Hirers	Freelancers	Admins	Posts	Offering	Courses
Value		8	7	1	4	12	5
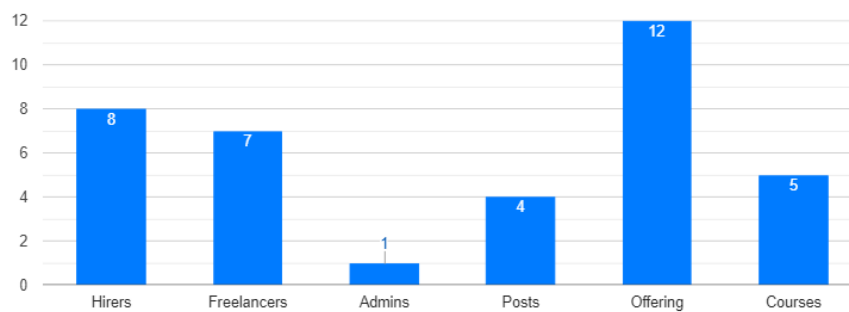
Time Series

Hire Tokens in last 5 months:

February	January	December	November	October
5	7	0	0	0

Aniticpated value for the future month from trend: 7

Suggestions based on Automated learning

►very strong marketing campaign emphasising reviewing is required.

►very strong marketing emphasising portfolios is required.

►Market/Encourage/Push people to Post.

►Acceptance rate is Average.

►Between 20-25 years is average.

Business Rules

For Freelancers:
- Each Account needs to have a unique Email-Id.
- We are just a platform, false information provided by the Users is viable for legal action by the Hirer or any copyright claming party.
- If an user is reported trice the account is eligible for permenant ban.
- If an account is reported an warning is issued.
- Email ID Verification is compusory for accessing the account.

For Hirers:
- Each Account needs to have a unique Email-Id.
- We are just a platform, we don't deal with payments.
- Email ID Verification is compusory for accessing the account.
- If an user is reported trice the account is eligible for permenant ban.
- If an account is reported an warning is issued.
- False information can be reported to your legal.

For Admin:
- Only exsisting admin can register new admin.

Test Case

Registration

Test No	Input	Result Expected	Actual Result
T1	Enter all details correct	Registration successful	Registration Successful
T2	Leave some fields empty	Show appropriate error message	Error message displayed
T3	Leave password text field empty or less than 6 letters	Show error message	Error message displayed
T4	Enter existing Email address	Display error message	Error message displayed
T5	Don't agree the license agreement	Do not allow to register	Registration disabled
T6	Enter DOB less than 18	Show error message	Error message shown
T7	Don't enter email address	Show error message	Error message shown

Login

Test No	Input	Result Expected	Actual Result
T1	Enter user name password correct	Login successful	Login Successful
T2	Leave user name empty	Show error message	Error message displayed
T3	Leave password text field empty or less than 6 letters	Show error message	Error message displayed
T4	Enter invalid password	Show no errors but no access given	no errors but no access given

Portfolio form

Test No	Input	Result Expected	Actual Result
T1	Select one picture	Successful	Successful
T2	Picture not given/ selected	Show highlight	Highlight shown

Verify hirer form:

Test No	Input	Result Expected	Actual Result
T1	Enter the verification code from freelancer	Show success message	Success message shown
T2	Enter invalid code	Show error message	Error message shown

Reset password form:

Test No	Input	Result Expected	Actual Result
T1	Enter valid Email ID	Show success message	Success message shown
T2	Enter Invalid/ Not registered Email ID	Show error message	Error message shown

Report form:

Test No	Input	Result Expected	Actual Result
T1	Enter a report from 20 – 500 letters	Successfully inserted	Success
T2	Leave report field blank	Show error	Error shown

Review form:

Test No	Input	Result Expected	Actual Result
T1	Enter a review from 20 – 500 letters	Successfully inserted	Success
T2	Leave review field blank	Show error	Error shown

Send notification form:

Test No	Input	Result Expected	Actual Result
T1	Enter all details correct	Notification send	Success
T2	Leave text or location field blank	Show error	Error shown

Software Engineering Process Model:

ITERATIVE WATERFALL MODEL
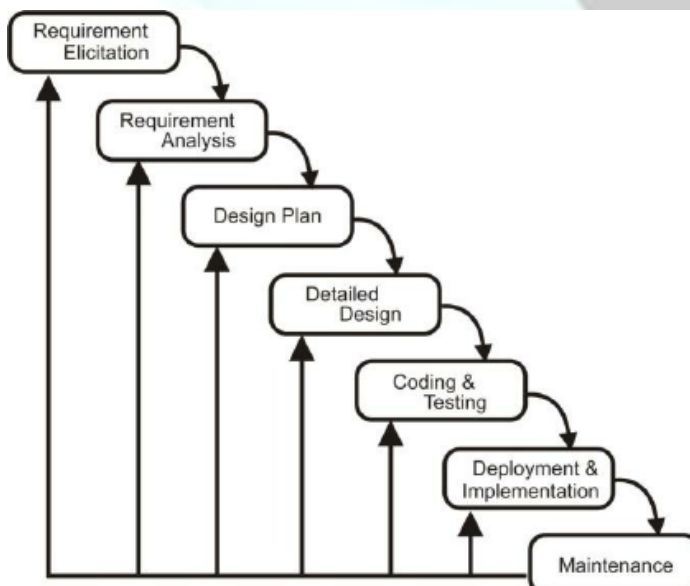
The waterfall model shows a process, where developers are to follow these phases in order:

    I.   Requirements specification (Requirements analysis)
    II.   Software Design
    III.   Integration
    IV.   Testing (or Validation)
    V.   Deployment (or Installation)
    VI.   Implementation & Maintenance

I. Requirements Specification:
The requirement and specification provided by client & list out all the functional requirement of website that would be implemented from my side was studied.

II. Software design:
The project has been divided into small modules and plan how we can design and implement the module as per the client expectation. First we have plan a database scheme of project, which would help me to go in correct flow, I have also design the DFD (Data flow design) to implement the website.

III. Coding and Unit Testing
The codes for every features is created. Such as the login form, change password, etc. Each module code is created. The testing of each form for each module is done individually such as the add student, add teacher is tested to check if the data entered gets saved in the database.

IV. Integration and System Testing
Each module is integrated such as after adding the student and teacher in the admin module, it is checked whether the accounts for the respective users is created. The system testing is performed keeping in mind the operational, functional and security and portability of the system. The entire system is tested for its functional requirements as well as non - functional requirements.

V. Software deployment:
After implementation & testing of whole website on local server, the website has been deployed on main server to get ready for launch.

VI. Implementation & Maintenance:
The Maintenance phase is the longest phase of the SDLC. In this phase the software is updated to:
-Fulfil the changing customer need.
-Adapt to accommodate change in the external environment.
-Correct errors and oversights previously undetected in the testing phase.
-Enhance the efficiency of the software.

Security Issues

- The data in the database is of prime importance and is the major security liability.

- The members must have a unique email id.

- Unauthorized users without permissions who have access to sensitive data can cause harm to educational institutions as a result of theft. There is a risk of the sensitive academic data will be leaked by staff.

- If adequate safety precautions are not taken when files and documents are shared in website, smartphones and tablets via internet networks, the information contained on them might gain access to the devices and get exposed to risks.

- When data is stored in computers or laptops, it has become so natural that people lose the information when files are accidentally deleted or even it could fall into the wrong hands.

Data Integrity and Constraints

W_Id	W_fname	W_lname	W_Email	W_Profession	W_Phone	W_DOB	W_Ismailverified	W_Activationc...	W_password	W_Expsal
4	Bosco	Correa	bosco98123@g...	asadf	9594355887	08-12-2018 00:0...	True	269bca80-ffe1-...	jZae727K08KaO...	20000
6	Denver	Gomes	cjgomesdenver...	Developer	9987665949	17-08-1992 00:0...	True	9bf2c113-11dd-...	WhkfpYPbENRt...	20
7	abc	xyz	stelinad27@gm...	Developer	454654134	01-12-4555 00:0...	True	8282ec75-07a9-...	bKE9UspwyIPg...	20
9	Jaden	Deo	jaden@test.com	Developers	9594355887	06-05-1988 00:0...	False	f77d6532-afb3-...	jZae727K08KaO...	20000
10	chris	patel	chrisdsouza07...	Chefs	9594355887	07-01-1999 00:0...	True	d81aed5c-311a...	vLFfghR5tNV3K...	10
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Under validation we have provided certain constraints and primary keys to few fields of the tables of the database used in application. This validation made at database level is listed below:

Required Field Validation: we use require field for fill the information compulsory in the project without this validation the data will not be submitted in the project.

Not null: Not null constraint is used restrict field to have null values. Few fields in our
Date: The valid date with valid format should be enter in the given textbox.

Email: The @ Symbol is required in this field otherwise it will not work properly.
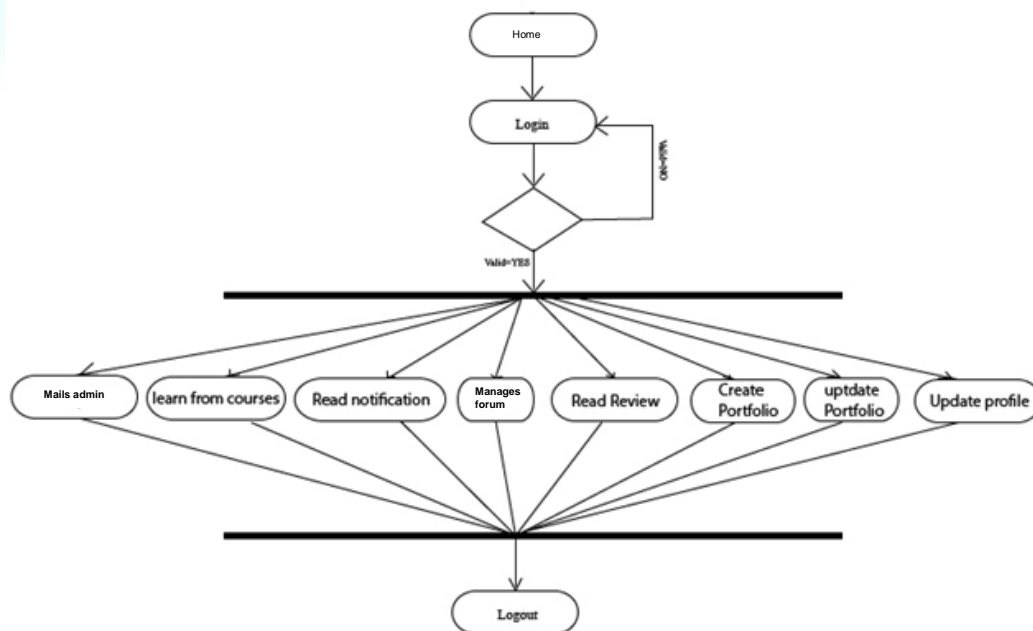
The validators are used in the various forms such as the login form, change password form, add student, add teacher, etc.
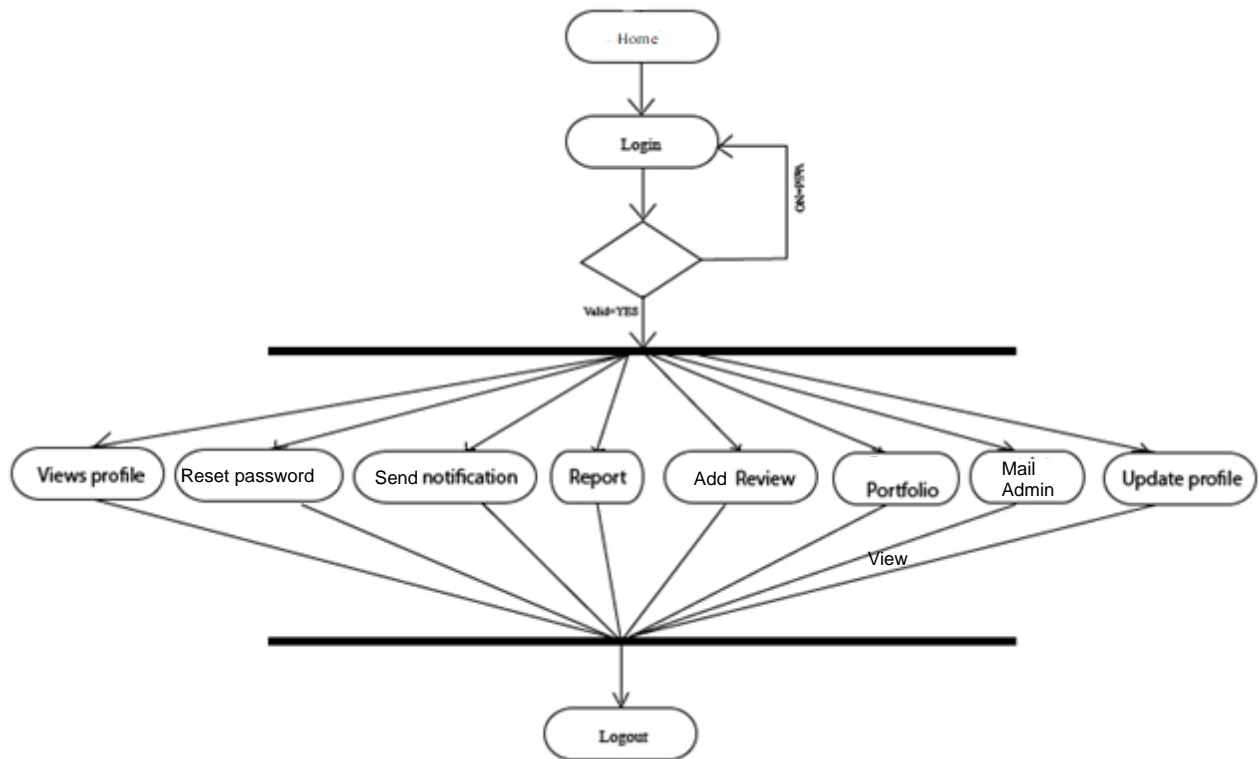
Schema Design
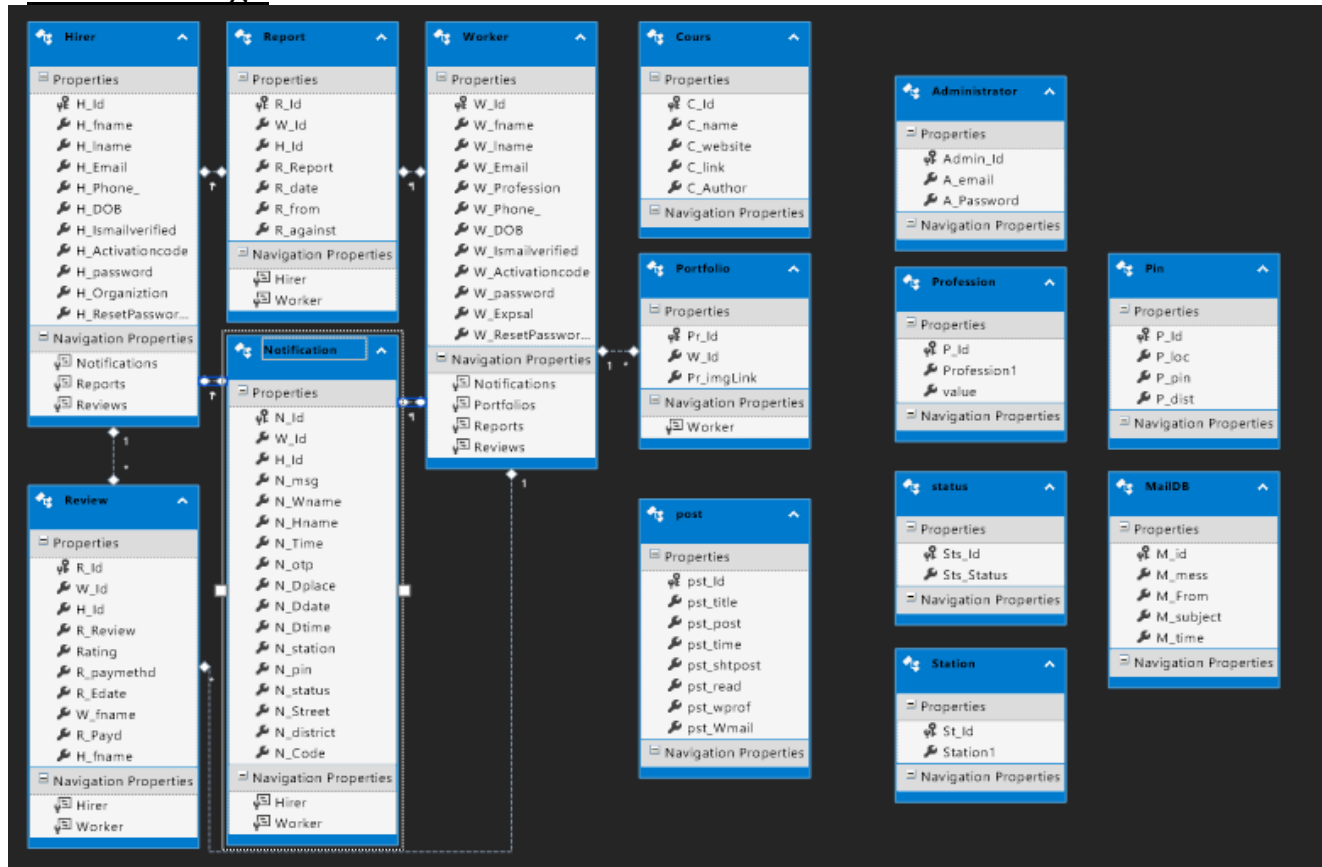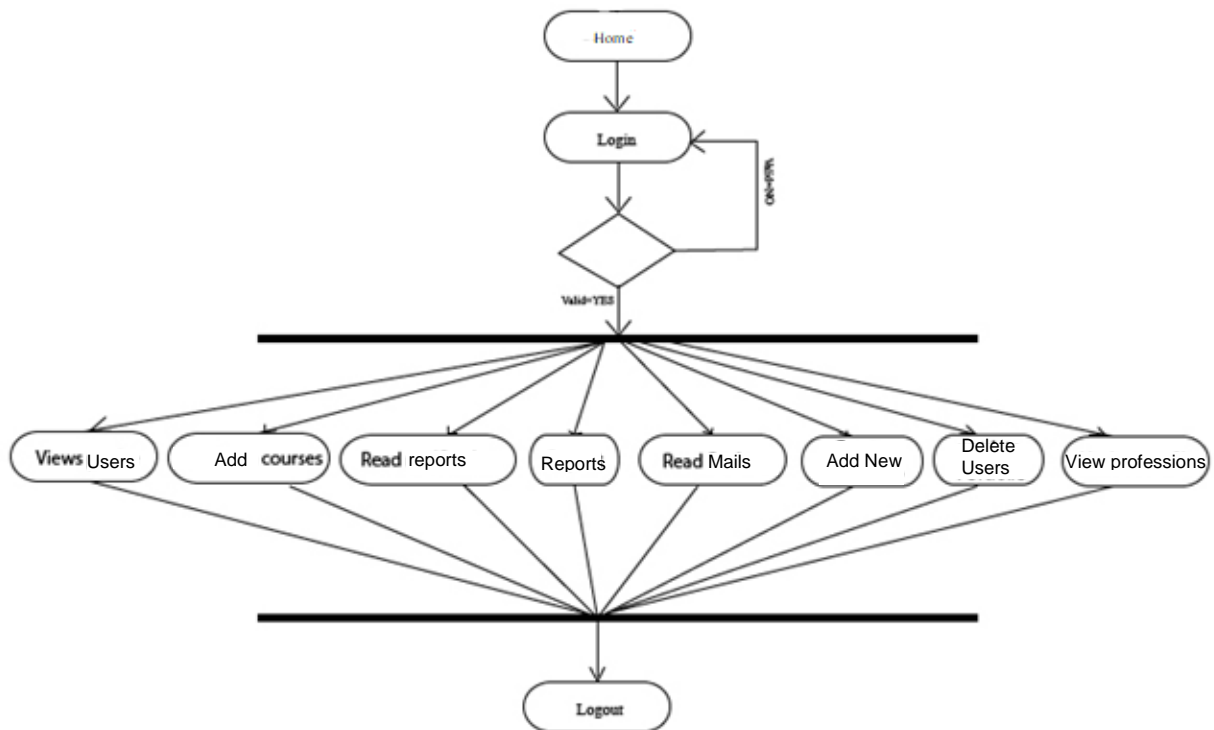

Algorithms Designs

Freelancer

Hirer

Admin module

5. IMPLEMENTATION AND TESTING

1. Code details

Validation for worker / freelancers

```
[Display(Name = "First Name")]
[Required(AllowEmptyStrings = false, ErrorMessage = "First name required")]
public string W_fname { get; set; }

[Display(Name = "Last Name")]
[Required(AllowEmptyStrings = false, ErrorMessage = "Last name required")]
public string W_lname { get; set; }

[Display(Name = "Email ID")]
[Required(AllowEmptyStrings = false, ErrorMessage = "Email ID required")]
[DataType(DataType.EmailAddress)]
public string W_Email { get; set; }

[Display(Name = "Profession")]
[Required(AllowEmptyStrings = false, ErrorMessage = "required")]
public string W_Profession { get; set; }

[Display(Name = "Contact No.")]
[MaxLength(10)]
[Required(AllowEmptyStrings = false, ErrorMessage = "required")]
public string W_Phone_ { get; set; }

[Display(Name = "Date of birth")]
[DataType(DataType.Date)]
[DisplayFormat(ApplyFormatInEditMode = true, DataFormatString = "{0:MM/dd/yyyy}")]
public System.DateTime W_DOB { get; set; }

[Required(AllowEmptyStrings = false, ErrorMessage = "Password is required")]
[DataType(DataType.Password)]
[MinLength(6, ErrorMessage = "Minimum 6 characters required")]
[Display(Name = "Password")]
public string W_password { get; set; }

[Display(Name = "Confirm Password")]
[DataType(DataType.Password)]
[Compare("W_password", ErrorMessage = "Confirm password and password do not match")]
public string W_ConfirmPassword { get; set; }

[Display(Name = "Expected Wage")]
[Required]
public string W_Expsal { get; set; }
```

Login Code

```
string message = "";
using (MasterEntities dc = new MasterEntities())
{
var v = dc.Workers.Where(a => a.W_Email == login.W_Email).FirstOrDefault();
if (v != null)
{
bool a = v.W_Ismailverified.Value;
if (!a)
```

```csharp
{
ViewBag.Message = "Please verify your email first";
return View();
}
if (string.Compare(Crypto.Hash(login.W_password), v.W_password) == 0)
{
int timeout = login.RememberMe ? 525600 : 20; // 525600 min = 1 year
var ticket = new FormsAuthenticationTicket(login.W_Email, login.RememberMe, timeout);
string encrypted = FormsAuthentication.Encrypt(ticket);
var cookie = new HttpCookie(FormsAuthentication.FormsCookieName, encrypted);
cookie.Expires = DateTime.Now.AddMinutes(timeout);
cookie.HttpOnly = true;
Response.Cookies.Add(cookie);
if (Url.IsLocalUrl(ReturnUrl))
{
return Redirect(ReturnUrl);
}
else
{
return RedirectToAction("Index", "Worker");
}
}
else
{
message = "Invalid credential provided";
}
}
else
{
message = "Invalid credential provided";
}
}
ViewBag.Message = message;
return View();
```

Registration

```csharp
bool Status = false;
string message = "";
var datet = DateTime.Now.Year - 18;
if (Hirer.H_DOB.Value.Year > datet)
{
return RedirectToAction("dateerror");
}
if (ModelState.IsValid)
{
#region  Code to check Email is already Exist
var isExist = IsEmailExist(Hirer.H_Email);
if (isExist)
{
ModelState.AddModelError("EmailExist", "Email already exist");
return View(Hirer);
}
#endregion
#region Generate Activation Code
Hirer.H_Activationcode = Guid.NewGuid();
#endregion
#region  Password Hashing
```

```csharp
Hirer.H_password = Crypto.Hash(Hirer.H_password);
Hirer.H_ConfirmPassword = Crypto.Hash(Hirer.H_ConfirmPassword);
#endregion

#region Setting Email verfication false
Hirer.H_Ismailverified = false;
#endregion

try
{
#region Save to Database
using (MasterEntities dc = new MasterEntities())
{
dc.Hirers.Add(Hirer);
dc.SaveChanges();
//Sends Email to User
SendVerificationLinkEmail(Hirer.H_Email, Hirer.H_Activationcode.ToString());
message = "Congratulations your account has been verified. Account activation link has
been sent to your email id:" + Hirer.H_Email;
Status = true;
}
#endregion
}
catch (DbEntityValidationException e)
{
Console.WriteLine(e);
foreach (var eve in e.EntityValidationErrors)
{
Console.WriteLine("Entity of type \"{0}\" in state \"{1}\" has the following validation
errors:",
eve.Entry.Entity.GetType().Name, eve.Entry.State);
foreach (var ve in eve.ValidationErrors)
{
Console.WriteLine("- Property: \"{0}\", Error: \"{1}\"",
ve.PropertyName, ve.ErrorMessage);
}
}
}
}
else
{
message = "Invalid Request";
}
ViewBag.Message = message;
ViewBag.Status = Status;
return View(Hirer);
```

2. Code efficiency

There was a lot of trouble in sending emails through code. And also, the whole application depends on communication and making a proper communication channel between freelancers and Hirer's that what their services. Sending emails is an important feature in this application. However, Gmail allows us to send email through smtp protocol. Also, emails are sent may times in the process. So, to avoid duplication of code I made a function for sending emails and with different arguments. So we can just provide them with different arguments and we can use send mail at different scenarios.

```
[NonAction]
public void SendVerificationLinkEmail(string emailID, string activationCode, string
emailFor = "VerifyAccount")
{
#region Defining var
var verifyUrl = "/Worker/" + emailFor + "/" + activationCode;
var link = Request.Url.AbsoluteUri.Replace(Request.Url.PathAndQuery, verifyUrl);

var fromEmail = new MailAddress("bosco98123@gmail.com", "Ilancer.org");
var toEmail = new MailAddress(emailID);
var fromEmailPassword = "Your_password";

string subject = "";
string body = "";
#endregion

#region Check weather for reset verivication or plain verification
if (emailFor == "VerifyAccount")
{
subject = "Your account is successfully created!";
body = "<br/><br/>We are excited to tell you that your <i> Worker account </i> is" +
" successfully created. Please click on the below link to verify your account" +
" <br/><br/><a href='" + link + "'>" + link + "</a> ";
}
else if (emailFor == "ResetPassword")
{
subject = "Reset Password";
body = "Hi,<br/><br/>We got request for reset your <i> Worker account </i> password.
Please click on the below link to reset your password" +
"<br/><br/><a href=" + link + ">Reset Password link</a>";
}else if (emailFor == "Accept")
{
subject = "Task Accepted";
body = "Hi,<br/><br/> Your task has been accepted by the freelancer";
}
#endregion

#region SmtpClient Configuration
var smtp = new SmtpClient
{
 Host = "smtp.gmail.com",
 Port = 587,
 EnableSsl = true,
 DeliveryMethod = SmtpDeliveryMethod.Network,
 UseDefaultCredentials = false,
 Credentials = new NetworkCredential(fromEmail.Address, fromEmailPassword)
};
#endregion
#region Smtp Send message
using (var message = new MailMessage(fromEmail, toEmail)
{
 Subject = subject,
 Body = body,
 IsBodyHtml = true
})
 smtp.Send(message);
 #endregion
}
```

3. Spiral approach

Spiral model is one of the most important Software Development Life Cycle models, which provides support for Risk Handling. In its diagrammatic representation, it looks like a spiral with many loops. The exact number of loops of the spiral is unknown and can vary from project to project. Each loop of the spiral is called a Phase of the software development process. The exact number of phases needed to develop the product can be varied by the project manager depending upon the project risks. As the project manager dynamically determines the number of phases, so the project manager has an important role to develop a product using spiral model.
The Radius of the spiral at any point represents the expenses(cost) of the project so far, and the angular dimension represents the progress made so far in the current phase.

Below diagram shows the different phases of the Spiral Model:
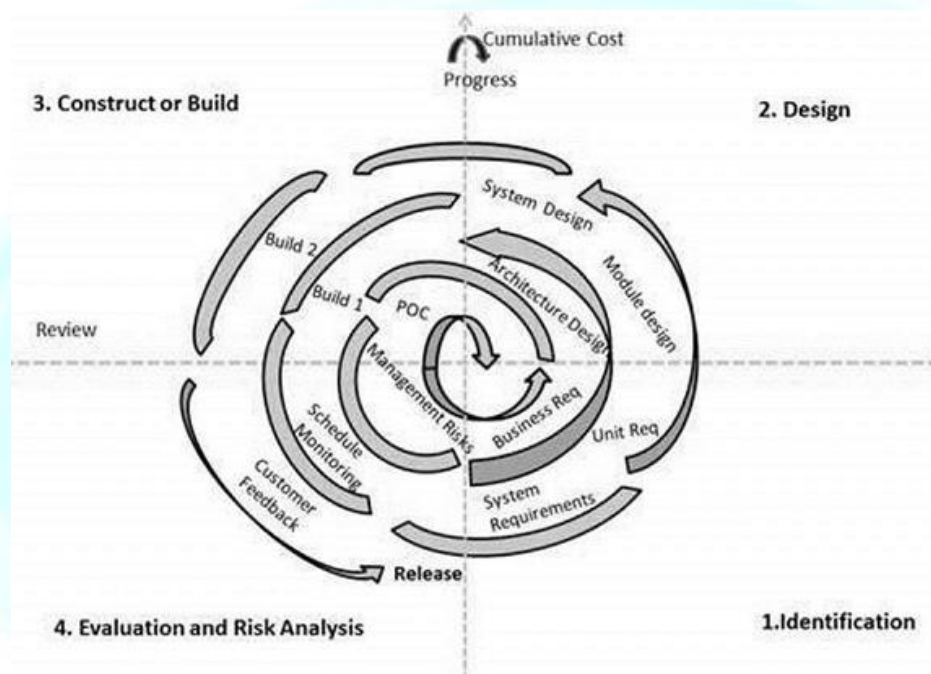
1. Identification

This phase starts with gathering the business requirements in the baseline spiral. In the subsequent spirals as the product matures, identification of system requirements, subsystem requirements and unit requirements are all done in this phase.

2. Design

The Design phase starts with the conceptual design in the baseline spiral and involves architectural design, logical design of modules, physical product design and the final design in the subsequent spirals.

3. Construct or Build

The Construct phase refers to production of the actual software product at every spiral. In the baseline spiral, when the product is just thought of and the design is being developed a POC (Proof of Concept) is developed in this phase to get customer feedback.

4. Evaluation and Risk Analysis

Risk Analysis includes identifying, estimating and monitoring the technical feasibility and management risks, such as schedule slippage and cost overrun. After testing the build, at the end of first iteration, the customer evaluates the software and provides feedback.

4. Quality control
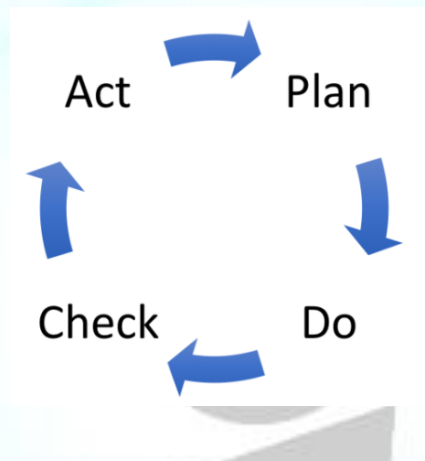
- **Plan**: The first step is to decide what goal we want to achieve or the problem we want to solve. At this point, we also identify the root causes of the problems and a strategy for achieving our goals.
- **Do**: The second step is to implement the plan or solution.
- **Check**: Did the implemented changes lead to the desired effect? With enough data collected, we can study the results of the implementation and compare them with our goals and objectives.
- **Act**: Depending on the results, we can either make the plan implemented in the second step the new baseline, make small adjustments to the plan and/or start the PDCA cycle from scratch.
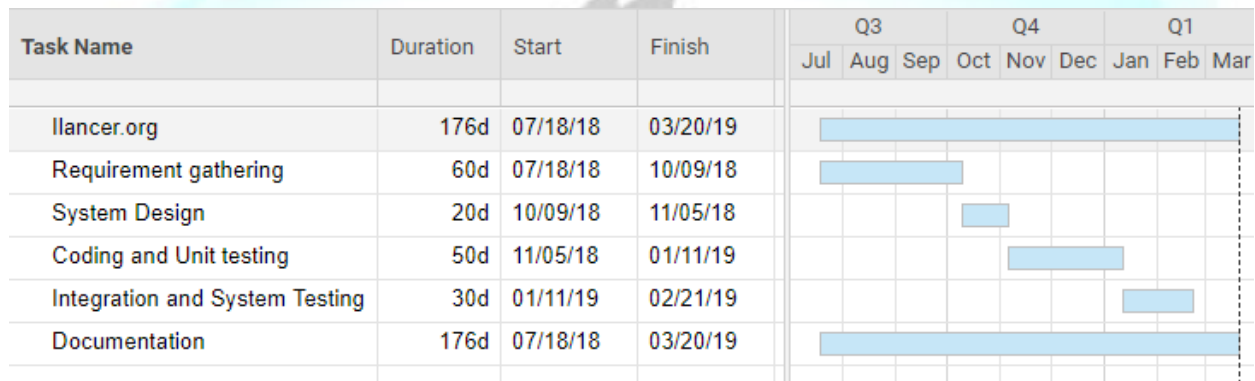
Quality control from developer point of view:
  a) Usability: it is the job of the developer to ensure that the product created is easy to understand and can be easily used by someone who is not well aware with software. The interface should be very attractive and also the overall product should be easy to use.

b) Maintainability: the product should be maintained by the developer and any changes required should be provided with updates. The developers should ensure that the product created is maintained every now and then.

5. Gantt Chart

A Gantt chart is a horizontal bar chart developed as a production control tool in 1917 by Henry L. Gantt, an American engineer and social scientist. Frequently used in project management, a Gantt chart provides a graphical illustration of a schedule that helps to plan, coordinate, and track specific tasks in a project

A Gantt chart is constructed with a horizontal axis representing the total time span of the project, broken down into increments (for example, days, weeks, or months) and a vertical axis representing the tasks that make up the project (for example, if the project is outfitting your computer with new software, the major tasks involved might be: conduct research, choose software, install software). Horizontal bars of varying lengths represent the sequences, timing, and time span for each task.

Task Name	Duration	Start	Finish
llancer.org	176d	07/18/18	03/20/19
Requirement gathering	60d	07/18/18	10/09/18
System Design	20d	10/09/18	11/05/18
Coding and Unit testing	50d	11/05/18	01/11/19
Integration and System Testing	30d	01/11/19	02/21/19
Documentation	176d	07/18/18	03/20/19

RESULTS AND DISCUSSIONS

Test Reports

| Types of test	Description	Status
1. Unit testing	Each module tested individually.	Pass
2. Integration testing	The way the modules interact were tested.	The results that were generated were as expected.
3. System testing	This includes the Operation, Functional and Security and Portability Testing	
3.1.Operational testing	It includes the performance, security, reliability and maintainability	The status of Operational Testing is pass.
3.2.Functional testing	All the functions w.r.t. the system was tested.	The status of Functional Testing is pass.
3.3.Security and portability	The system was checked in terms of security and portability to check security and portability with different web browsers.	Works in all the modern browsers
3.3.1. Security	All the passwords were secure.	The overall output is pass.
3.3.2. Portability	Since it is a website, this website could be opened on different types of web browsers effectively.	The overall output was as expected. The final result is PASS.
4. Beta testing	The application was tested completely to make sure it would work effectively if deployed on users PC	Pass.

User Documentation

Freelancer
- Should have a unique email ID.
- Register using the unique email ID.
- Enter all the required details in the form.
- Agree the license agreement.
- Add things to your portfolio to attract hirer's.
- If your profession is not there you can request admin to add yours.
- Once portfolio is added cannot be removed, so add responsibly.
- Can edit limited information.
- Can view the hirer's that are interested in hiring their services.
- They can contact them via WhatsApp
- View their location of meet on Google maps.
- The hirers must be verified by the freelancers by the OTP code provided to identify the person.
- Can see their reviews given by the hirers.
- If they have any problem regarding reporting or false reviews, they can send a email to admin and admin shall get back to him in moments.
- They can showcase their portfolio on their website by using the embedded plugin or may be can use the json API provided by the website.
- They can even share a link to their portfolio on other social platforms.
- This gives freelancers to a portfolio management portal all in one place.
- The freelancers have their community forum on which they can post their experiences or any tips for fellow users.
- They can view others post that are recently updated.
- They can view their posts.
- Can delete their posts can see the views on their posts.
- All notifications will also be given via emails as well as on their website.

Hirers
- Should have a unique email ID.
- Register using the unique email ID.
- Enter all the required details in the form.
- Agree the license agreement.
- Can edit limited information about themselves.
- Can see the freelancer category wise.
- Freelancers can be sorted by their wage, name, email etc.
- The freelancers can be searched by any of their parameters.
- Can see their all of the details.
- Can see their email ID for direct contact.
- Can see their portfolios compare them to other people / freelancers.
- Can notify freelancer their interest also can specify meet day and also meet location.
- Freelancers can contact them on their phone via WhatsApp or call them or email them.

Admin
- Can see the list of all the freelancers.
- Can search through the list of freelancers.
- Terminate the account of freelancers.
- Can see the list of all the hirers.
- Can search through the list of the Hirers.
- Terminate account of the hirers.
- Can see all the professions on the list on the website.
- Can register new administrator.
- Can see the OLAP analysis of the website.
- See the reports form the users.
- Can Sort, filter and search through the reports.
- Can see the mail by any user.
- Add new courses.
- Statistics and report of the website can be seen.
- Can change the language of the website is in.
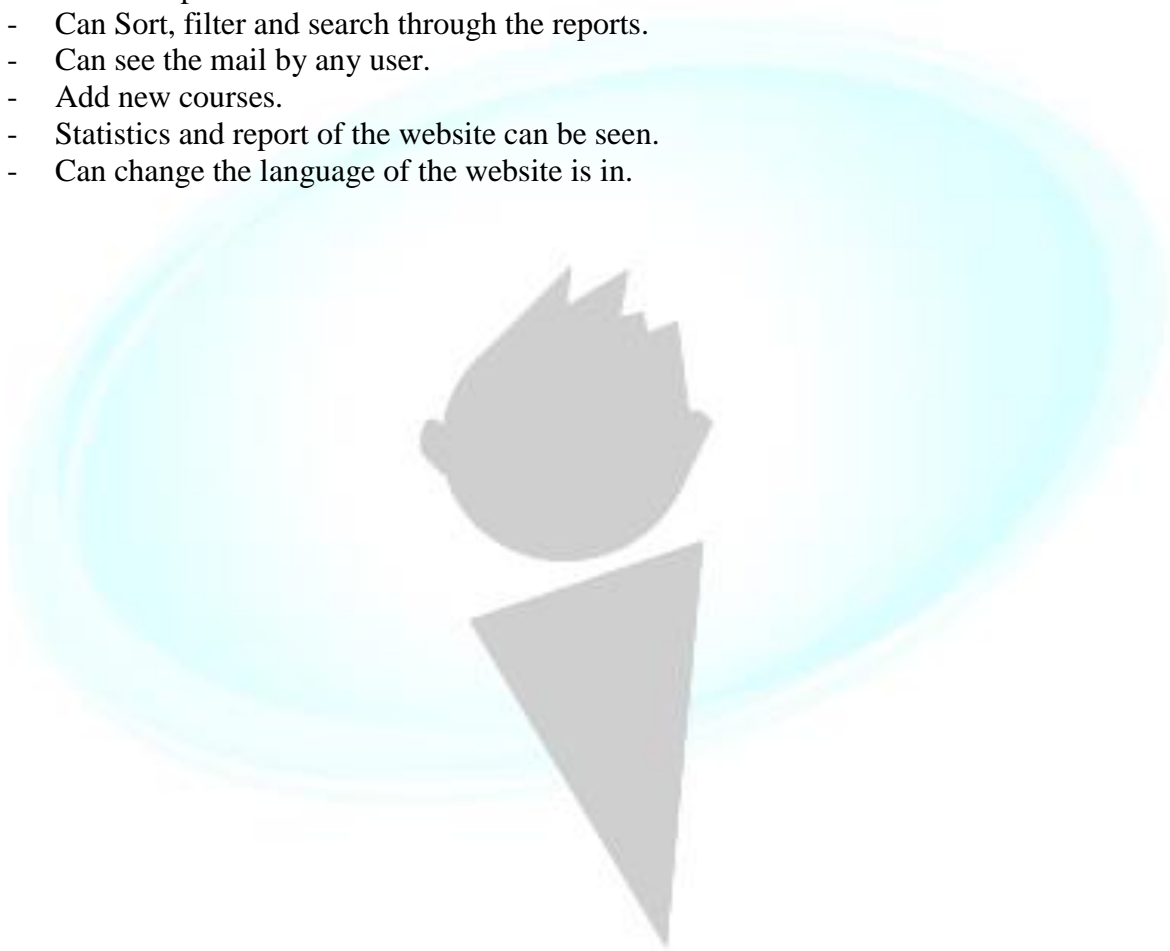
CONCLUSION

Conclusion

- The I-lancer project was done by keeping in mind the difficulties that the young graduated people that are jobless, also unemployment is very important issue in our society.
- Also, there are many regional job finding portal on the internet but there are not many portals that lets you find freelancers.
- Also, there are fewer freelancing opportunities for those jobless people.
- These freelancing opportunities for jobless people will help the unemployment rate of the region go very low.
- If the freelancers are not skilled, they can train themselves from the portal's courses page.
- They can train themselves from the courses offered on the website.
- They can post their learning on the portfolio wall.
- In the portfolio management system, they can manage their portfolio and also display it on their personal website in the form of widget or also they can use json API.
- Also, there's a community forum on the website were the freelancers can post and increase their visibility, thereby increasing the chances of being hired.

Significance

- The I-lancer is an excellent web app that gives unemployed people a platform to be hired.
- Also, provide hirers an excellent platform to hire a freelancer for whatever they want for.
- They can easily compare freelancers to other freelancers.
- They can make choices based on their portfolios.
- The freelancers can train themselves and get better recognition.

Limitations

- There are many limitations in the system.
- The website doesn't