FULL STACK DEVELOPMENT AT GLOSTARS OY

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An intern report submitted
in partial fulfilment of the requirements
for the degree of
Bachelor of Science in Computer Science and Engineering

UNIVERSITY OF LIBERAL ARTS, BANGLADESH
Dhaka, Bangladesh

4th January 2018

DECLARATION

I declare that this intern report entitled "The title of your report/thesis will go here" is the result of my own research except as cited in the references. The intern report /thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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CERTIFICATE OF APPROVAL

The intern report entitled "Full Stack Web Development at Glostars Oy" is submitted to the Department of Computer Science and Engineering at University of Liberal Arts Bangladesh (ULAB) in partial fulfillment of the requirements for the degree of Bachelor of Science.

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DEDICATION

To my lovely parents, who gave me endless love, trust, constant encouragement over the years, and for their prayers.

To my mentors and peers for their patience, support, love, and for enduring the ups and downs during the completion of this thesis.

This report/thesis is dedicated to them.

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I greatly indebted to all teachers and staffs of the Department of Computer Science and Engineering and other Departments of the University of Liberal Arts Bangladesh (ULAB)for their kind assistance in accomplishment of the Internship paper.

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Last but not the least; I would like to thank my parents and other family members for their eternal support given to me.

ABSTRACT

This internship report focuses on my contribution towards Glostars Oy as an intern and achievements from this internship program. It provides detail on my activities at this company, technical and professional achievements what I have learnt from observing the other IT professionals. This report also provides the working process of Web development at Glostars Oy. The three-month internship program was carried out at Glostars Oy I was given the responsibility of learning, implementing and analyzing the results of Web development. This report explains my completed projects and ongoing activities in this company as an intern member of Glostars BD team. The steps of software requirements analysis, software planning, implementation, testing phase and maintaining phase were followed and documented for every project. Finally, this report concludes with the achievements as an intern in terms of professionalism and attitude that highlights the values of the internship program. Recommendations for the prospective interns are also provided.

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LIST OF ABBREVIATIONS

API	Application Programming Interface
ASP	Active Server Pages
CSE	Computer Science and Engineering
CSS	Cascading Style Sheets
DOM	Document Object Model
GPS	Global Positioning System
GUI	Graphical User Interface
HTTP	Hyper Text Transfer Protocol
HTML	Hypertext Markup Language
IDE	Integrated Development Environment
JSON	JavaScript Object Notation
LINQ	Language Integrated Query
MVC	Model View Controller
MVVM	Model View ViewModel
NPM	Node Package Manager
OOP	Object Oriented Programming
OS	Operating System
SQL	Structured Query Language
SDK	Software Development Kit
ULAB	University of Liberal Arts Bangladesh
UI	User Interface
UML	Unified Modeling Language
URL	Uniform Resource Locator
XML	Extensible Markup Language

CHAPTER 1

INTRODUCTION

1.1 Background of the study

I worked as an ASP.NET full stack developer intern in Glostars Oy Company. Glostars Oy is a software development Finnish company, having business and interest in Social Media software solutions in Finland. They have only one project just like Facebook. Their Main users are photographers. Screen of Glostars is in **Figure 1.1**

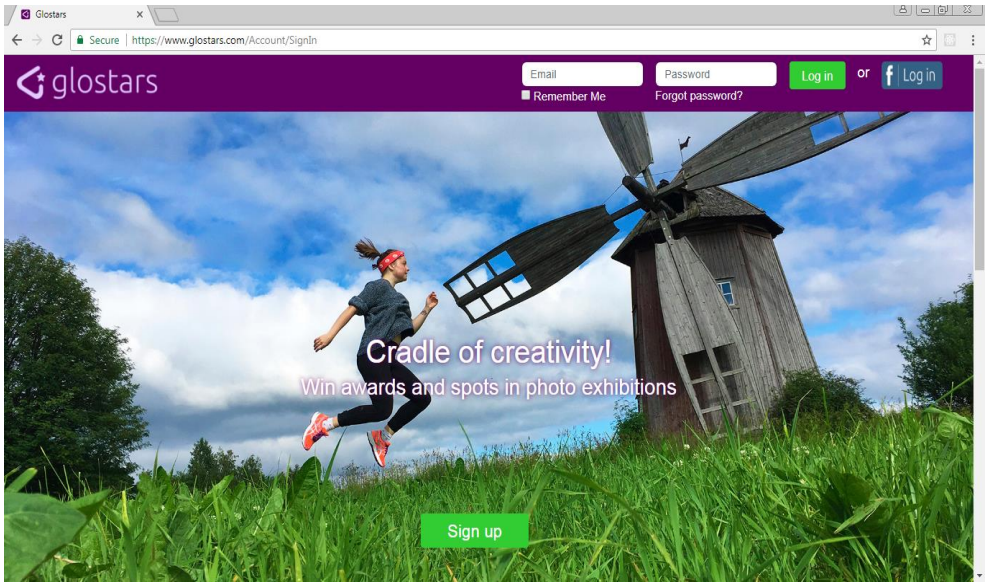

Figure 1.1: Glostars Website

I am lucky to get the opportunity to complete my internship at Glostars Oy.

Though Glostars Oy works almost every platform of information technology, I got the chance of working with developer team. More specifically I did Web Features

development there. During my internship I developed font-end development of their four pages and also used the front-end framework for working the front-end side faster. I used the Reactjs technology for doing the work faster. All of my work was now publish as a live server into the Glostars website. This website is responsive for any screen size.

Developing this web features I work with some Web platform languages such as Asp.net MVC, html, CSS, Bootstrap, JavaScript, jQuery, SignalR and c#. I use Asp.net MVC and SignalR for creating the chatting application feature. For design or the front-end side, I use html, CSS and JavaScript and the ReactJs library. I use font color, background color, font-size, font-family, margin, padding etc properties to CSS.

I also use some dependencies which is add some features that I can use in my project. I use Dependencies which works with Asp.net MVC to enhance Object Relational Mapping using entity framework and make them more dynamic. I made Glostars web apps full responsive that all of the screen resolution supports it for this I used bootstrap.

I used material design code with XML which verify the activity is looking perfect for users. I also involved with two other projects one is Chat in Room and another is Pocket Bank. I worked as an android developer in these projects. I tried to use all my coding skills what I have learned to make those apps best and get user satisfaction. I followed best coding practice and coding conventions within my knowledge.

Into this Internship period as I already mentioned I am a Full stack developer at Glostars Oy. So their maximum website work task is given to me. When they give me their existing website for solving. I found they have used so many technologies into their website. As a Background of the study I am going to describe those technologies into this section.

The website of Glostars is basically using this technology:

i. Angularjs1
ii. ASP.NET MVC
iii. ASP.NET WEB API
iv. Bootstrap 3(for Responsiveness website)
v. HTML, CSS, JAVASCRIPT
vi. JQuery

1.2 Statement of Problem/Issue

When I start working at Glostars website I found out so many problems they had into their website. There is color miss match, function, validation problem into their website. Some of the main problems I am going to describe into the bullet point below:

i. They have style sheet that means CSS problem into the Glostars website.
ii. The website is responding so slowly.
iii. One page and another page didn't connect properly because there is some functional problem into their website.
iv. they have new design which has navigation bar but it's not working properly at that time.
v. They didn't have any chatting application into their website.
vi. The responsive design of the Glostars website was not fixed properly so that it was not response in every resolution size of the screen.
vii. Chatting application was not developed as end to end encryption.
viii. Login functionality was not declared so clearly into the code file.
ix. Some of the pages of Glostars website were not dynamic.

1.3 Objectives

The main objectives of this report is to familiarize with overall activities of the web development section of the Glostars Oy as well as its products, customers, standard practices and their success stories.

To know about the challenges which are faced in the software industry, to evaluate and analyze the software development systems in Glostars, to get the real life experience in web development sector, to know about the coding conventions and style, to get the experience of the team working, to explain my job responsibility as an intern and narrate different lessons learnt while working as an intern at Glostars. My achievements as an intern, especially focusing my nonacademic and professional achievements, self-assessments and company evaluation.

1.4 Arrangement of the Report

Here I am going to describe how this report will arrange. Given Below:

i. In 1'st chapter I discussed about the whole project that I involved and also discuss about the experiences that I earned during my internship in short.

ii. In 2'nd chapter I discussed about the company profile products and the services which they provide to their clients. In this chapter I also discussed about the mission and vision of Glostars Oy.

iii. In 3'rd chapter I discussed about the Technology and software development process at Glostars Oy.

iv. In 4'Th chapter I discussed about the Working Projects that I learned and implemented in my project and also discussed about the tools that I used in my project.

v. In 5'Thchapter I discussed Proposed Project(s) about my project Chat Application.

vi. In 6'Thchapter I discussed about Results and Discussion.

vii. In 7'Thchapter I discussed about Conclusion and Recommendations.

viii. In 8'Th chapter There is some References of my Work.

ix. In 9'Th chapter Appendices are given there.

CHAPTER 2

COMPANY PROFILE

Glostars is a website where we can share photos which allows individuals, groups or organizations to share pictures to the global audience. It has competition feature which is running on regular basis. Into This website a user can share their picture and can win the exciting prizes. They can earn prizes based on community voting. Glostars is not only a photo sharing platform but also people can use it for sharing the photos to their friend and other persons too. A User has full freedom for using this website for their sharing moments.

What Glostars Offer

By using this Glostars website a user can share photo globally also they can rate the pictures and grow network and can create a global community. A user can share his or her picture in three ways.

i. Mutual Follower Photo.
ii. Public photo.
iii. Competition photo.

Mutual Follower Photo: Into this section a user can share his or her picture mutually. when both user following each other then it will be a mutual follower and they can share their mutual photo to them.

Public Photo: Into this section a user can share his or her picture around the globe. All of the user of Glostars can see his or her sharing photo.

Competition photo: Into this section a user can upload his or her best picture for the competition and can win the prizes. Basically Glostars chose a best user photo

by searching the highest voting or starred picture every week. They have several prize section, they can give monthly, weekly prizes. Also at the end of the competition term that means every 4 months in a calendar Glostars give a best and big prize to the winner user. At the end of the competition term Glostars organize a Photo Exhibition with the top 50 pictures of the competition.

Different Things of Glostars

i. They reward and reward users or peoples to photography through prizes and spot exhibitions.
ii. They aware of or do not support he copyrights of the shared picture.
iii. They are better controller for sharing the user pictures to the online.

Achievements of Glostars

Basically it's a social media website and their main vision is to communicate people with the photography by heart. They start their journey in 2016. In this minimum time, they have prized or awarded more than 80 pictures which is collected from different parts of the world. Also they have organized 3 international photo exhibitions in Finland portraying over 150 top voted pictures.

Table 2.1: Bird's eye view of Glostars Oy

Company Name	Glostars Oy
Established	2015
Location	Laserkatu 6 Lappeenranta, 53850Finland
Website	http://www.glostars.com
Industry	Online Media
Type	Privately Held

Glostars Company description is given in **Table 2.1**

2.1 Services and Products

I was assigned to Glostars Oy as an intern. Glostars Oy is a social media service company, having business presence and interest in client's satisfaction. The company has been established in Finland since 2016 and operating as a social media organization. Its goal is to find out the best photographers and their pictures and work hard to create the environment into the internet as a website like Facebook. They have only one product which is Glostars website and they targeted that it will be a huge software or environment like Facebook only for photographers.

Services

Service of the Glostars is all for photographers. They have collect all the unique photos which is measured by the vote of the users. Facebook has the like option for count the likes, but Glostars have the vote option for counting the vote for specific picture.

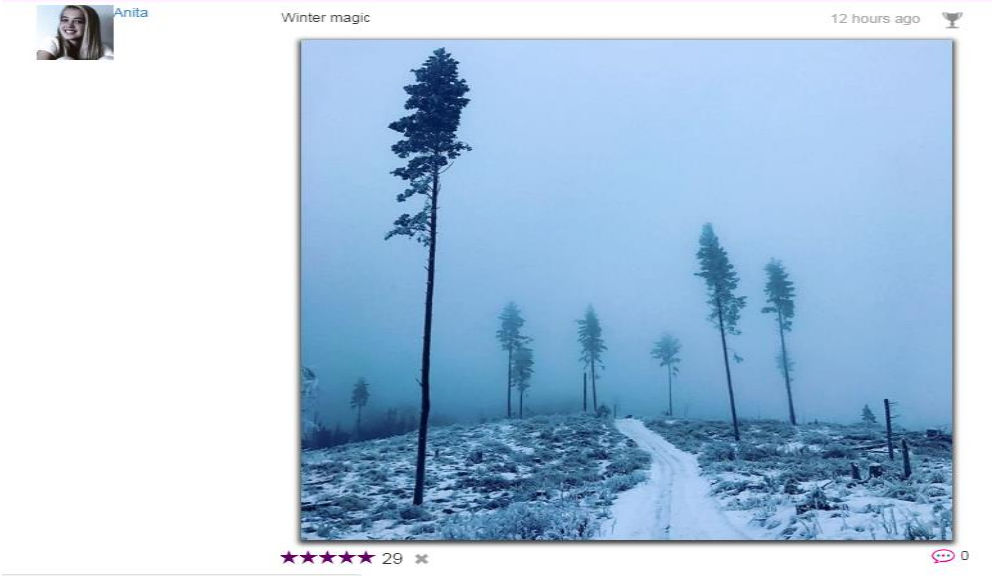

Figure 2.1: user photo upload sample

They count the star mark vote and then give prize to the winner photographer for his or her picture. They organize also exhibition program which is called Glostars exhibition. In every 4 months after they organized this exhibition where they showed top 100 picture which is top voted or winner. How a user upload photo it give in **Figure 2.1**

Products

Right now they have two products one is web and another is mobile app that is android app. There is some screen shot of Web App **Figure 2.2** and the Android App **Figure 2.3**

i. Web App.
ii. Android App.

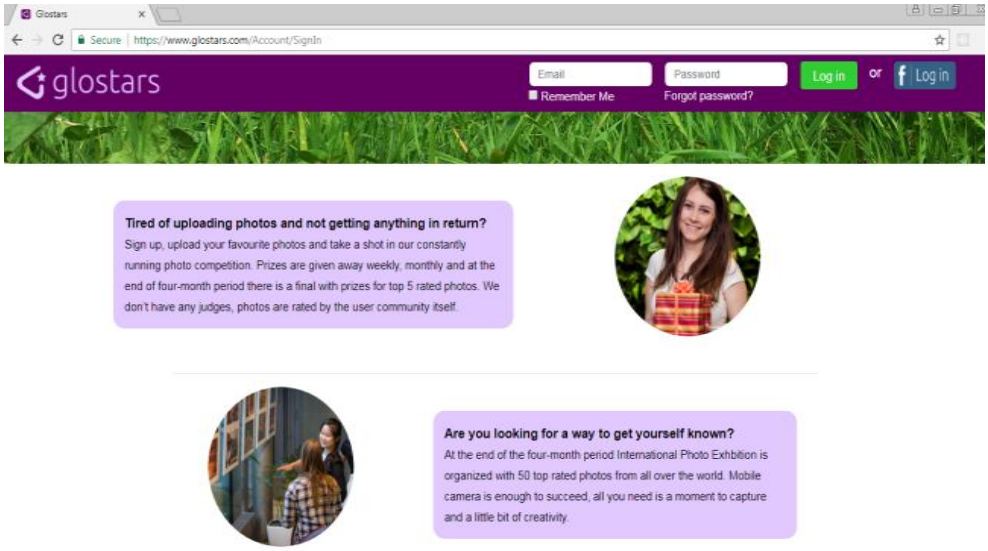

Figure 2.2: Web Application

Figure 2.3: Android Application

2.2 Departments

Although It is a social media website so they have only one product into the market just like Facebook that is Glostars where all of the photography picture and photographers are connected with each other. Also they can share their photos into that website.

They have a website called Glostars.com and an android app called Glostars beta in Google play store. And the IOS app is in under development. So there are three departments.

i. Web App Department.
ii. Android App Department.
iii. IOS App Department.

Into the Web App the address of the Http link is www.glostars.com . It is there web product which is used by at least 4 thousand users. All of the users are also into the mobile app. Into this section they have 2 web developer and 1 intern which is mine. Also they have 2 Front-end web developer who are working into this web department.

Android App basically recently launched in October. Now it is one of the favourites app for the Glostars users. They can take instant shot from their phone and can install upload it to the server. Into this android app section, they have 3 android developer.

Into the IOS department there is 3 IOS developer who are working and developing the IOS App.

2.3 Roles and Responsibilities

Roles

I am a software engineer of Glostars Oy. I have a role on that company that is I will fulfill their requirement in a technical way. Senior Official members also others organize a meeting and divide the work with each other. So at that time I get the work of web development and I am a web developer there. So my role is that work as a web developer.

Responsibilities

When it is time to talk about responsibilities then I am going say that I am a web developer there so they give me so many task about the Glostars website and also they give me a deadline when I will finish that task. So it is my responsibility to take that task so seriously so that it should not miss the deadline. If it missed the deadline, then its effects on other task they will give. So time is so important for this foreign company. They are supportive and always friendly but for the time they so much serious. My responsibility is that complete the task effectively with in the deadline. Every person of this Glostars development team they work hard and always finish their work in deadline.

CHAPTER 3

TECHNOLOGIES

Glostars Oy really love technology stack. This is partly because without them, This Company is only a handful of concepts, but mostly because they are fun to work with. Glostars Oy strives to ensure that the fun is always in the equation. The technology mentioned below helps us make what we make, and we are glad we picked them amongst thousand other options.

3.1 Server

Into the Server section I will discuss which technologies basically used in Glostars Server. For server support Glostars basically deal with Microsoft Company. Microsoft give them the server, database and space for running their total software. So the technologies which is work as server given by the Microsoft company are given below:

i. Microsoft SQL Server 2014
ii. IIS server

3.1.1 Microsoft SQL server 2014

Why they used Microsoft SQL server 2014 because their website is made in c# which is totally depended on Microsoft technology. Glostars website used Asp.net MVC with c# programming languages and its support Microsoft SQL server so that's why it is mandatory to use this server. Into this All of the data is stored into it. All of

the user data, pictures, message and all of the data which is stored into this SQL server. SQL Server is a central part of the Microsoft data platform. SQL Server is an industry leader in operational database management systems (ODBMS).Here is the screenshot of database in **Figure 3.1**

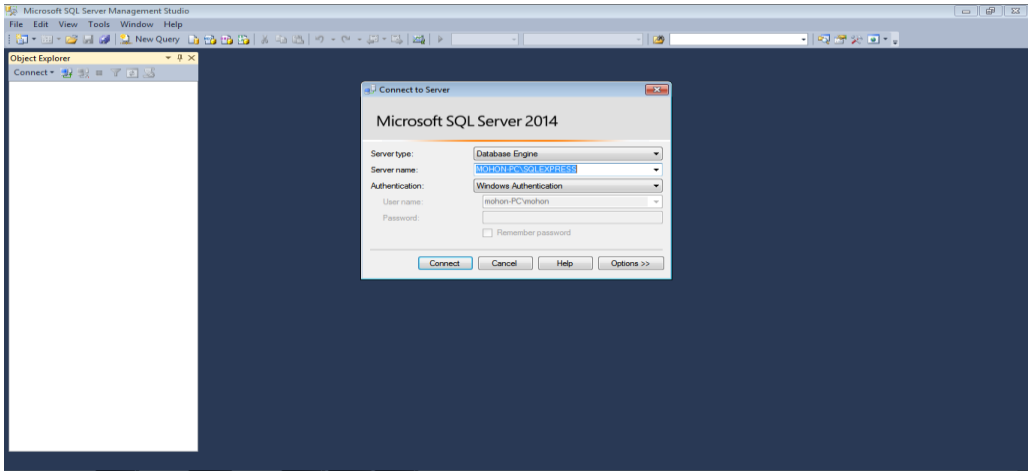

Figure 3.1: MS SQL Server 2014

3.1.2 IIS Server

Why IIS Server is need for Glostars website. Basically it's so important for running the website into the Http protocol. Main thing is that this server opens the http port for connecting the website into the internet. Internet Information service supports HTTP, HTTP/2, HTTPS, FTP, SMTP and NNTP. There are so many versions of IIS server and it is updating day by day its features. Sample screen shot is given in **Figure 3.2**

i. IIS 1.0 was released as a free server for windows NT 3.51
ii. Windows NT 4.0 is supported by IIS 2.0
iii. Windows service pace 2 and windows NT 4.0 is supported by IIS 3.0
iv. IIS 4.0 was released as an Option Pack for window NT 4.0 and it has new feature called MMC-based administration application

v. IIS 5.0 diverted into windows 2000 and added new authentication method also it supports WebDAV protocol and dropped support for the Gopher protocol.

vi. Window XP Professional and IIS 5.1 has the great connectivity with them it works well with each other.

vii. IIS 6.0 has concerned more security issue it support windows 2003 and windows XP x64 edition and also supports IPv6.

viii. IIS 7.0 was a complete redesign and rewrite of IIS, and was shipped with Windows Vista and Windows Server 2008. IIS 7.0 included a new modular design that allowed for a reduced attack surface and increased performance. It also introduced a hierarchical configuration system allowing for simpler site deploys, a new Windows feature with Forms-based management application, also a command-line management options and has more support for the .NET Framework. IIS 7.0 on.

ix. IIS 7.5 was included in Windows 7(but it must be turned on in the side panel of Programs and Features) and Windows Server 2008 R2. IIS 7.5 improved WebDAV and FTP modules as well as command-line administration in Power Shell. It also introduced TLS 1.1 and TLS 1.2 support and the Best Practices Analyzer tool and process isolation for application pools.

x. IIS 8.0 is only available in Windows Server 2012 and Windows 8. IIS 8.0 includes SNI (binding SSL to hostnames rather than IP addresses), Application Initialization, centralized SSL certificate support, and multi core scaling on NUMA hardware, among other new features.

xi. IIS 8.5 is included in Windows Server 2012 R2 and Windows 8.1. This version includes Idle Worker-Process page-out, Dynamic Site Activation, Enhanced Logging, ETW logging, and Automatic Certificate Rebind.

xii. IIS 10 is included in Windows Server 2016 and Windows 10. This version includes support for HTTP/2.

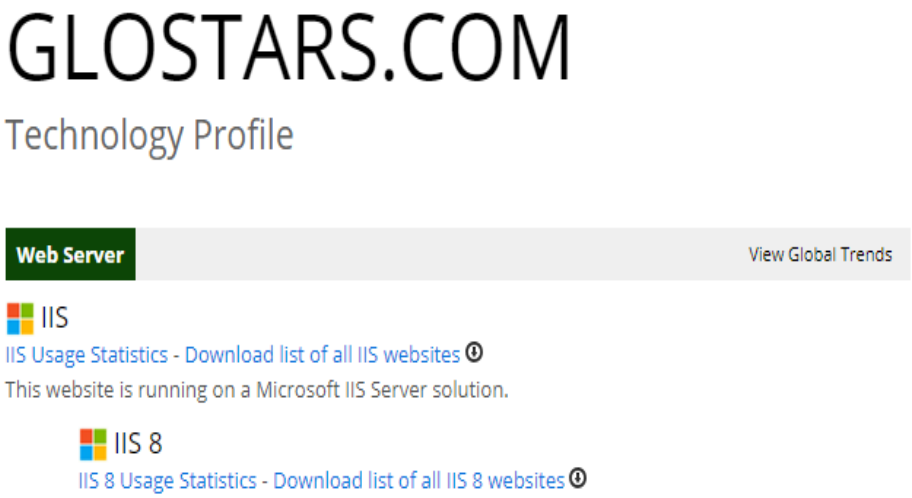

Figure 3.2: Build with Technology Look up

3.2 Software

This software section is one of the most important sections for any IT Company or Software technology. Because there are so many technology and software which is used for making this application. Glostars Oy also have their technology which they using for making their website, mobile app, and IOS app. I am going to describe all of this technology which brief details into this section.

3.2.1 Software or IDE

Table 3.1: Software or IDE

No.	IDE Name
1.	Microsoft Visual Studio 2013
2.	Microsoft Visual Studio Code.

I described about the IDE names of the company Into this **Table 3.1**

3.2.2 Programming Languages

Table 3.2: Programming Languages

No.	Programming Language Name
1.	C#
2.	JavaScript
3.	Java
4.	Swift
5.	Objective – C

All of the programming languages are described into this **Table 3.2**

3.2.3 Front-End Side Technologies

Table 3.3: Front-end technologies

No.	**Front-End Side Technologies**
1.	Html5
2.	CSS
3.	Jquery
4.	Bootstrap
5.	ReactJs

We need this front-end technology which I described in **Table 3.3**

3.2.4 Back-End Side Technologies

Table 3.4: Back-end technologies

No.	**Back-End Side Technologies**
1.	Asp.net MVC 4.5
2.	Asp.net WEB API
3.	SignalR
4.	LINQ
5.	Entity Framework
6.	Code First Migration

For the Back-end technology Glostars uses this **Table 3.4** data.

3.2.5 For Mobile App or Android App technologies

Table 3.5: Android technology

No	Technology
1.	React-native
2.	XML

Here is the **Table 3.5** where all of the Android technology is given

3.2.6 IOS App Technologies

Table 3.6: IOS technology

No	Technology
1.	Swift
2.	Objective-C

Here is the **Table 3.6** where all of the IOS technology is given

3.2.7 Description of each technology

Into the website they used programming languages, Frameworks, Design components language and many more. So I am going to describe all of this technology one by one.

3.2.8 Microsoft visual studio 2013

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs, as well as web sites, web apps, web services and mobile apps. Visual studio 2013 how it look like is give in **Figure 3.3**

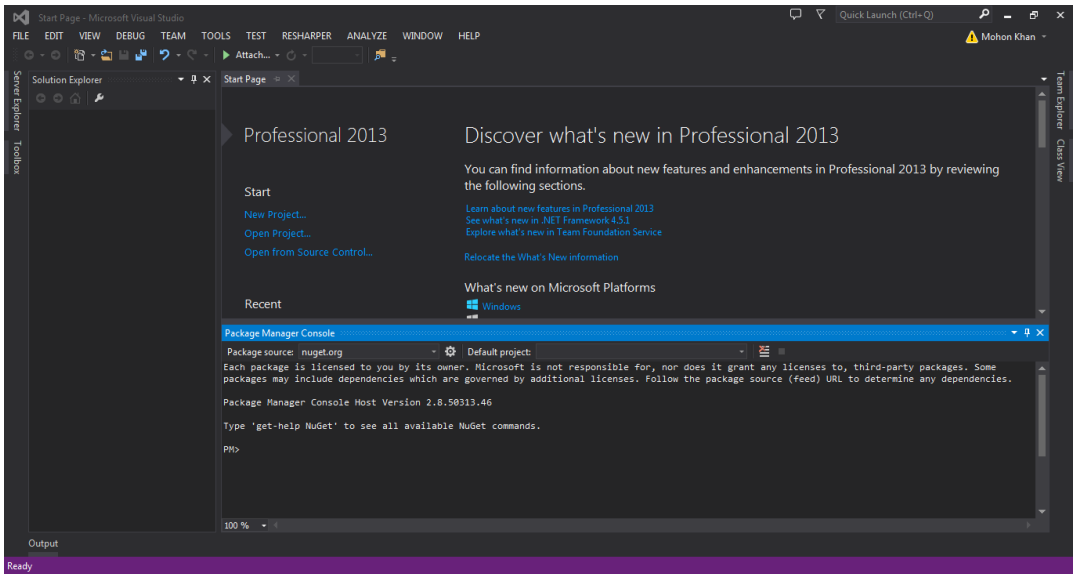

Figure 3.3: Microsoft visual studio 2013

3.2.9 Microsoft Visual Studio Code

Visual Studio Code is a source code editor developed by Microsoft for Windows, Linux and macOS. It includes support for debugging, embedded Git control, syntax highlighting, intelligent code completion, snippets, and code refactoring. How the visual studio code looks is given in **Figure 3.4**

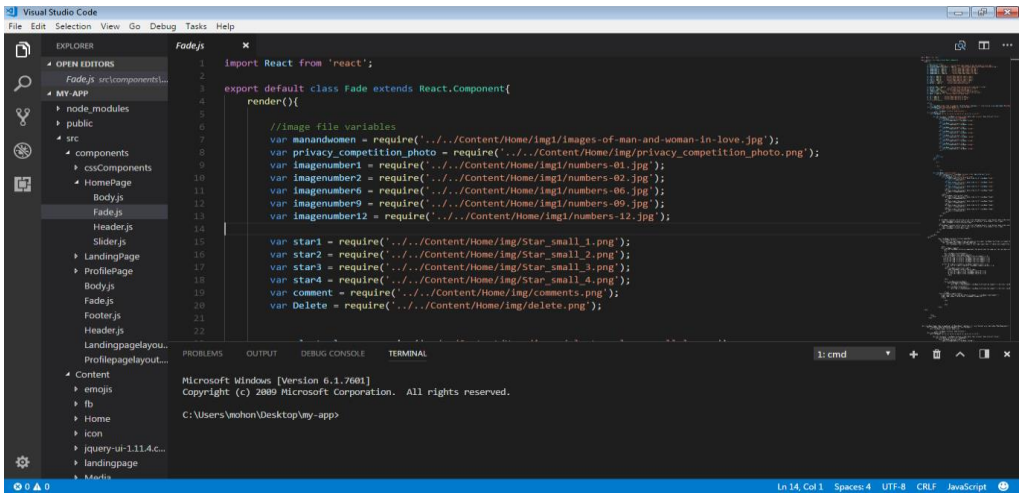

Figure 3.4: Microsoft visual studio code

3.2.10 Html5

HTML5 is a Mark up language used for structuring and presenting content on the World Wide Web. It is the fifth and current major version of the HTML standard. Some code is define in **Figure 3.5**

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Figure 3.5: Html code sample

3.2.11 CSS

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language. Sample of css syntex given in **Figure 3.6**

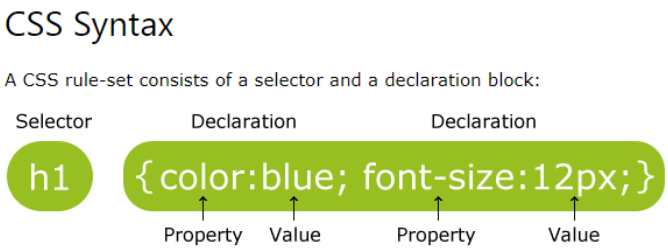

Figure 3.6: CSS syntax sample

3.2.12 JavaScript

JavaScript, often abbreviated as JS, is a high-level, dynamic, weakly typed, prototype-based, multi-paradigm, and interpreted programming language. Sample code is given in **Figure 3.7**

```
<button onclick="disableElement()">Disable</button>

<script>
function disableElement() {
    document.getElementById("btn01").disabled = true;
}
</script>
```

Figure 3.7: JavaScript Sample code

3.2.13 JQuery

JQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML. It is free, open-source software using the permissive MIT License. Sample code given in **Figure 3.8**

```
<script>
$(document).ready(function(){
    $("p").click(function(){
        $(this).hide();
    });
});
</script>
```

Figure 3.8: JQuery sample code

3.2.14 Bootstrap

Bootstrap is a free and open-source front-end web framework for designing websites and web applications. Sample code given in **Figure 3.9**

```
<div class="container">
  <div class="row">
    <div class="col-sm-4">
      <h3>Column 1</h3>
      <p>Lorem ipsum dolor..</p>
      <p>Ut enim ad..</p>
    </div>
```

Figure 3.9: Bootstrap sample code

3.2.15 ReactJs

ReactJs is a JavaScript library for building user interfaces. It is maintained by Facebook, Instagram developers and communities.React allows developers to create large web-applications that use data and can change over time without reloading the page. It aims primarily to provide speed, simplicity, and scalability.

3.2.16 Some Features of ReactJs

One-way Data Flow

To use React to its greatest potential, Properties (or props), ideally a set of immutable values, are passed to a component's render function. This mechanism's promise is expressed as "properties flow down; actions flow up". The described mechanism is an architecture called Flux. Many Flux alternatives have been created since its inception however the community has moved toward Redux.

Virtual Dom

Another notable feature is the use of a "virtual Document Object Model", or "virtual DOM". React creates an in-memory data structure cache, computes the resulting differences, and then updates the browser's displayed DOM efficiently. This allows the programmer to write code as if the entire page is rendered on each change, while the React libraries only render sub components that actually change.

JSX

This is a React-specific grammar extension to JavaScript like the now-defunct E4X. HTML syntax is processed into JavaScript calls of the React framework. Developers may also write in pure JavaScript. JSX is similar to another extension

syntax created by Facebook for PHP, XHP. JSX looks like regular HTML. An example of JSX code reactjs sample code is give in **Figure 3.10**

```
import React from 'react';

class App extends React.Component {
  render() {
return (
<div>
<p>Header</p>
<p>Content</p>
<p>Footer</p>
</div>
    );
  }
}

exportdefault App;
```

Figure 3.10: Reactjs sample code

3.2.17 Asp.net MVC

The ASP.NET MVC is a web application framework developed by Microsoft, which implements the model–view–controller pattern. It is open-source software, apart from the ASP.NET Web Forms component which is proprietary.

3.2.18 Asp.net MVC Web API

ASP.NET Web API is a framework that makes it easy to build HTTP services that reach a broad range of clients, including browsers and mobile devices.ASP.NET Web API is an ideal platform for building RESTful applications on the .NET Framework.

3.2.19 SignalR

SignalR is a software library for Microsoft ASP.NET that allows server code to send asynchronous notifications to client-side web applications. The library includes server-side and client-side JavaScript components.

3.2.20 LINQ

Language Integrated Query is a Microsoft .NET Framework component that adds native data querying capabilities to .NET languages.

3.2.21 Entity Framework

Entity Framework is an open source object-relational mapping framework for ADO.NET. It was a part of .NET Framework, but since Entity framework version 6 it is separated from .NET framework.

3.3 Research Methodologies

Into this section I am going to describe the Research methodologies about technology and my work. Why we choose the Microsoft asp.net framework because there are so many frameworks into this technology market place.

We use Asp.net because it is so powerful framework and it is so much comfortable to use. It is one of the famous framework for Microsoft technology. Glostars use this technology for their work. Because all of their database server is in Microsoft technology. I need to work with the framework. Every framework has its

design pattern methodologies. Most famous design pattern in now a day in called Model-View-Controller. It is so organized that any website related or software related work can be handle by it so easily. So people of all over the globe using it for its comfortable.

From My research perspective I can say that yes MVC model is the right design pattern for all over the software development. Because any time of software can be built with this MVC design patter. When I need to develop any feature into the website I always follow this design pattern. Here is the design given in **Figure 3.11**

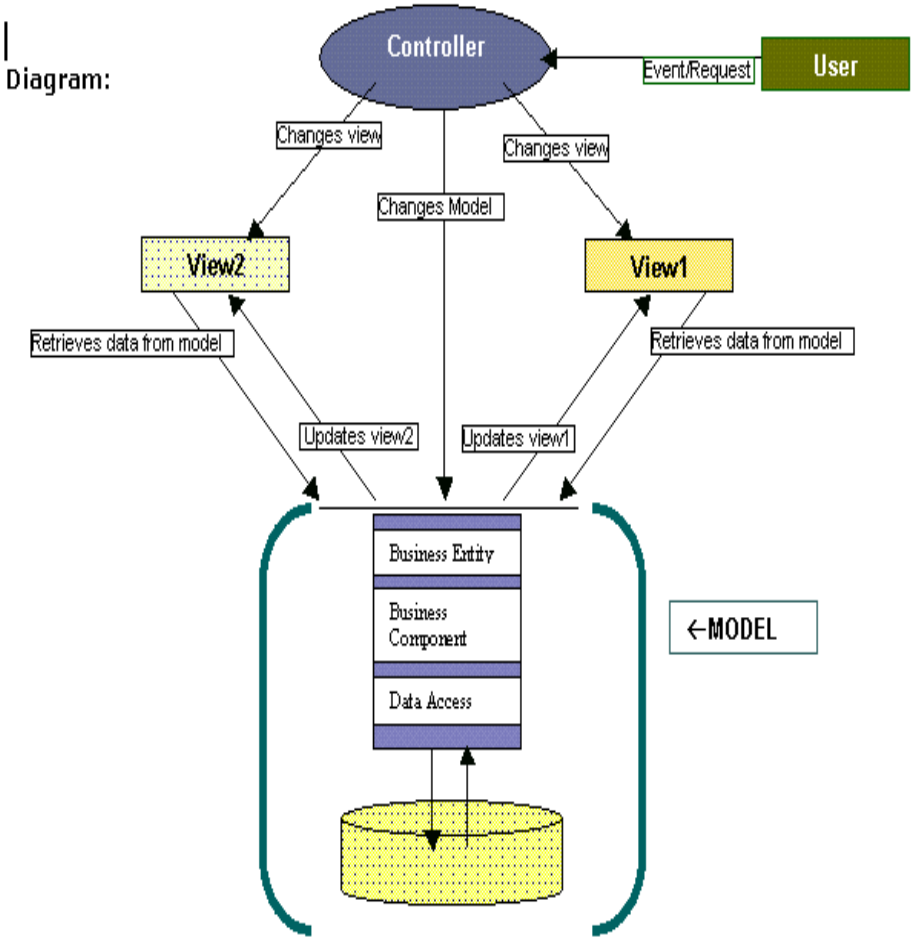

Figure 3.11: MVC Design pattern

CHAPTER 4

WORKING PROJECT(S)

4.1 Project background

As I already described that I am working as an intern in Glostars. In this company my role is that I am website developer of the Glostars. For developing their website, I worked with the technology called Asp.net MVC which is written with the C# programming Language.

So in Chapter1 the problem and Issue section I already describe how many problems they have into their website. As a result, they mark the problems and then give me to fix all of that problems. So into the internship period I have done so many works. I am going to describe all of this work into this working project section. At first I solve so many front-end work, re-design their website also change some technology they had not before into their website such as bootstrap3 to bootstrap4. Also they had responsiveness problem into their website.

I solved At least 40 bugs of their website and every bugs give me a new knowledge. Each of every bugs gives me a new name of a development technology.

When I talk with the Glostars company they also took an interview of me and also give me a task which called a login register system for their website and I successfully passed that task and then they hired me.

I am going to describe all of this working projects into the implement section one by one.

4.2 Project Design

Glostars is a website for photographer's platform where a user can upload his/her best photos to his/her own account. So into this website a user can upload photo, share his photo, they can join into the competition section where a user can upload his photo for the competition. After getting the top vote of the picture a user can win the prize from the website. Normal people also can use this website as a hobby. They can upload his photo and share into the globe. Users can follow each other. If there is two users who are following each other then they will be mutual follower.

Glostars have their own process to develop software feature or the software. They always follow this process for making their any work. Glostars website and mobile application is also made with the base of this process. Sample of the design given in **Figure 4.1**

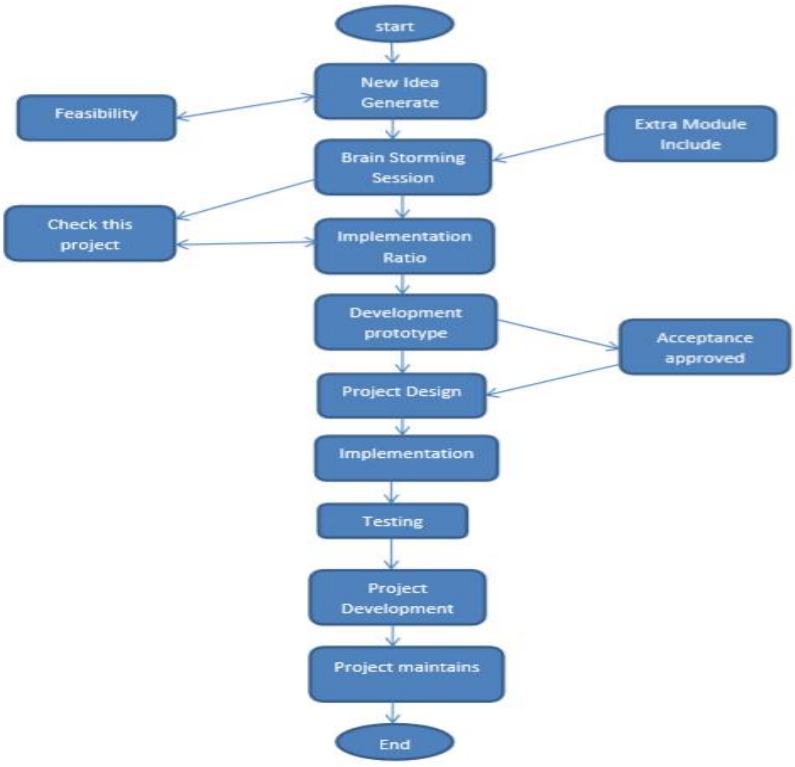

Figure 4.1: Software development process at Glostars Oy

4.3 Implementation

This section is called implementation where I am going to describe the details work what I have done into the Glostars and how I implement the logic and design into their website. As I already mentioned into the project background section now I am going to describe all of the things below:

They give me a website page which is created by using only HTML, CSS. My task was that I need to convert this design to the ASP.Net design and then connect it to the backend server. There existing project is created with using the technology which is ASP.NET MVC, AngularJS, SignalR, ASP.NET web API. But for the task I need to know how the asp.net website work and the MVC pattern. And the visual studio IDE tools. Into the design there is some functionality I need to work for. Website three portion is give in three step. **Figure 4.2** , **Figure 4.3** and **Figure 4.4**

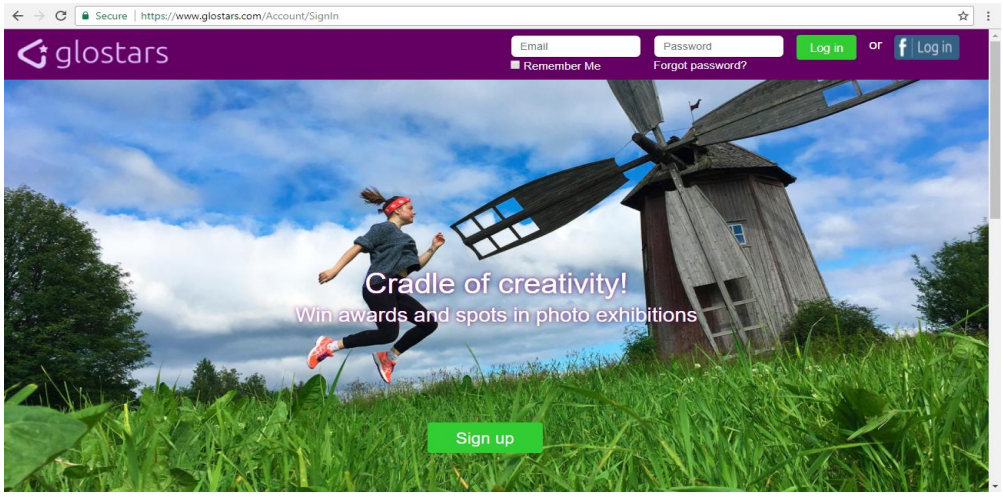

Figure 4.2: Upper part of the landing page

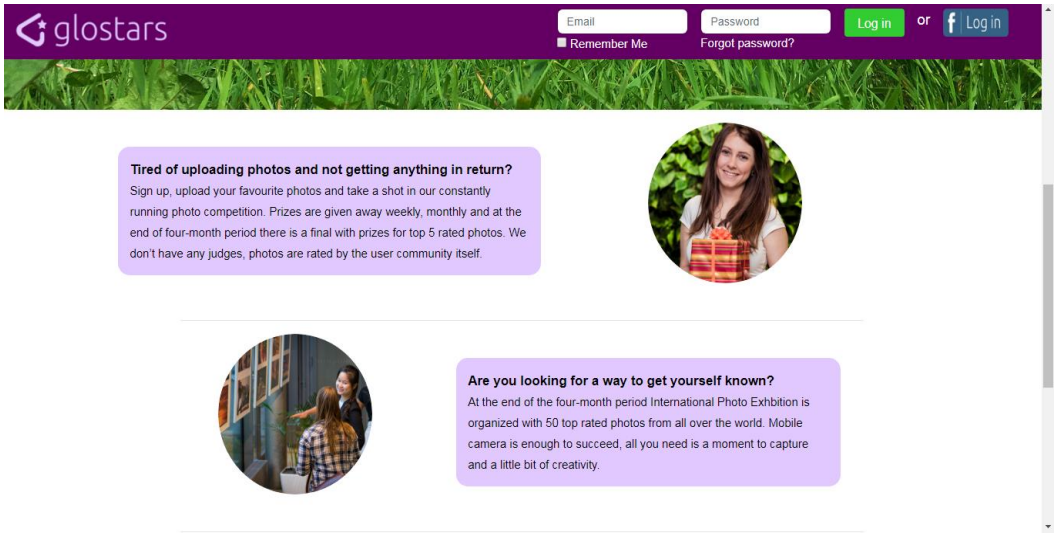

Figure 4.3: Middle part of the landing page

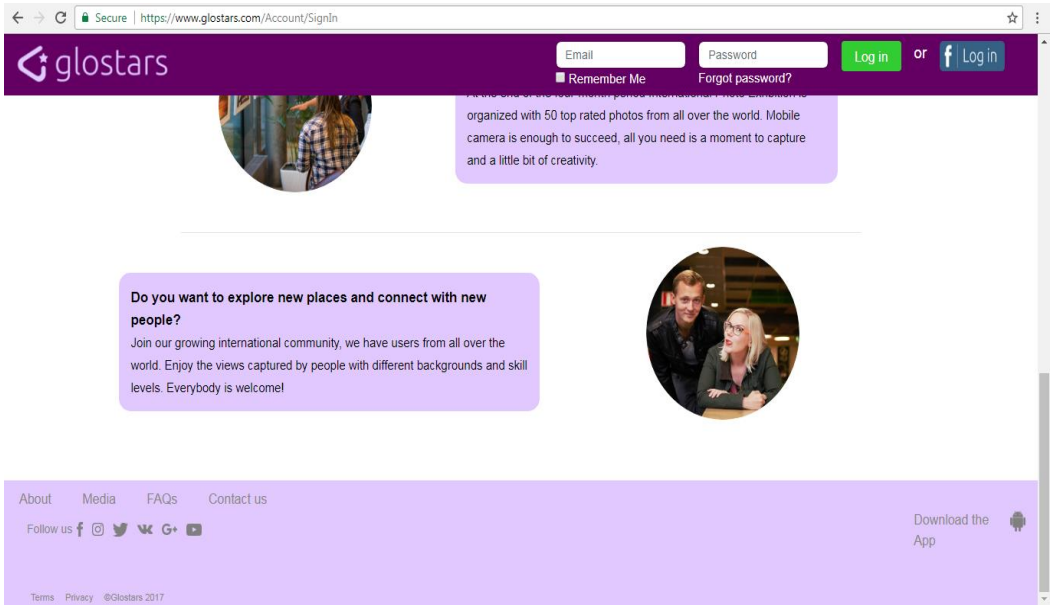

Figure 4.4: Lower part of the landing

This is the total full page they give me. The task is simple I need to register a user by clicking the signup button fill up the registration form and then Login in that user to the website.

For doing this task at first I made a project in visual studio and then select the MVC project. Here MVC is a design pattern. It is a most famous design pattern which is used for software development nowadays.

4.3.1 MVC

It means (model - view – controller). This three different portion has different work. Model makes the class for the filed we want to store into the database. Then controller which controls the Model and View portion. Controller's main work is to connect the Model and View using the help of data base.

For my task I follow the pattern I made a RegisterViewModel class into the model folder for user registration. Then made a AccountController class into the controller folder also a view which is into the view folder that file is called landingpage. It is a html file. I am working at Asp.net so I need to convert this html to the cshtml.

4.3.2 Environment Setup and Coding Style

At the beginning we need some tools or IDE for our writing code environment. Asp.net is a Microsoft product so they have their own IDE called Microsoft visual studio. So the project creating process is describing with picture step by step. Sample Screen Shot is given in **Figure 4.5**

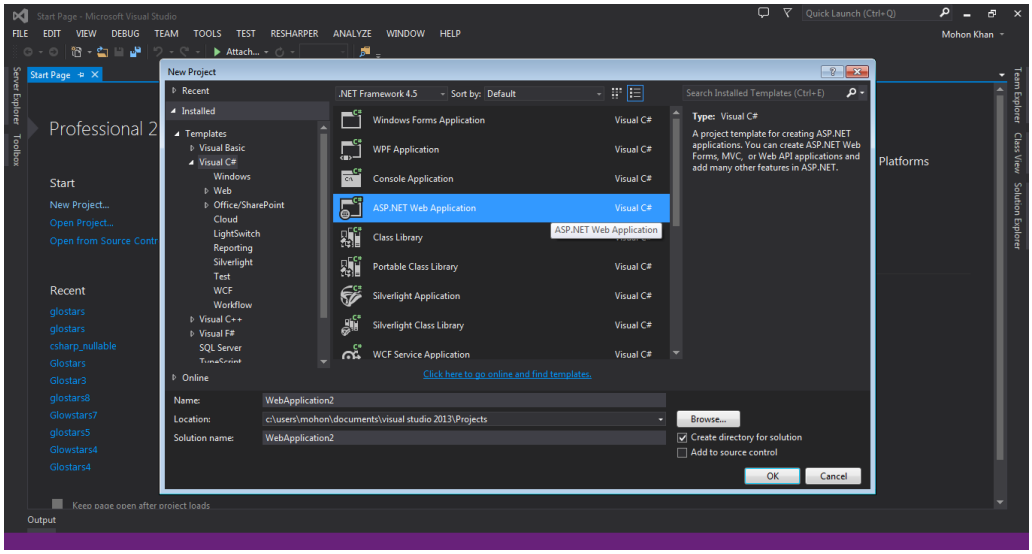

Figure 4.5: Visual studio project creation

We need to install and then open our IDE called visual studio. Here we can select or create ASP.Net MVC project and then can working with it. We can create many types of project in visual studio but my task is about the ASP.NET MVC so I select the project as a MVC project like this **Figure 4.6**

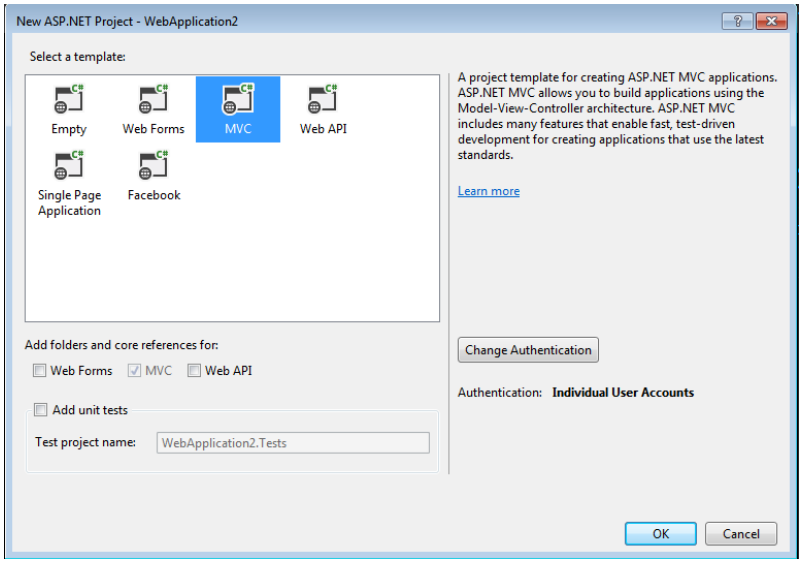

Figure 4.6: Selection the type of project

After selecting the MVC project we will found that there are three types of folder. One is model, another is View and A controller folder. Into my project I also worked with this three folder. Here is the screen shot of my project MVC folders Given **Figure 4.7**

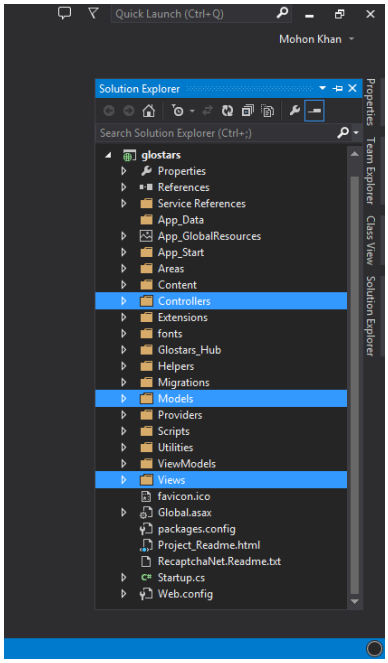

Figure 4.7: MVC folders in project

So at first we need to make a model class by seeing the signup page registration field. Here I give the signup page design and field below also the screen shot of the signup popup page is given in **Figure 4.8**

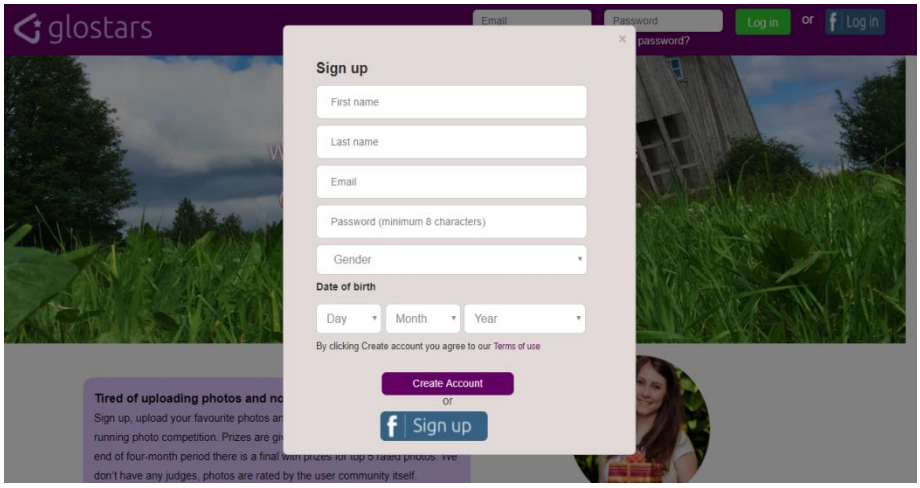

Figure 4.8: Signup popup page for registration

From the picture we saw that there is a total Eight Filed for Register a user. Fields are FirstName, LastName, Email, Password, Gender, Day, Month, Year. So for this specific every filed we need to specify or write filed into our Model class so here is the fileds I create into the model class which is showed into the **Figure 4.9**

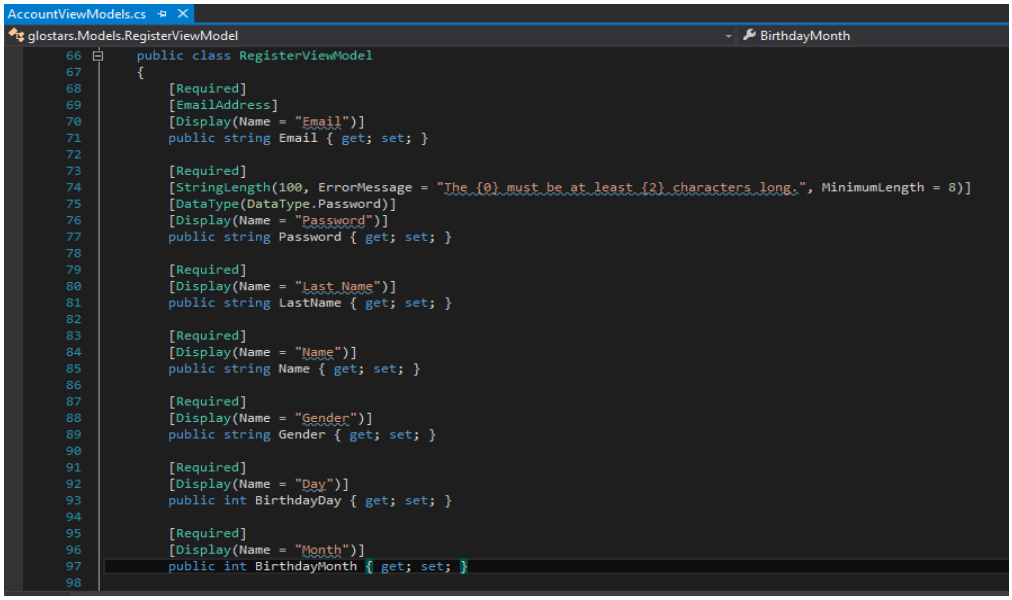

Figure 4.9: RegisterViewModel Class

Then I made a controller called AccountController this controller is made for controlling those filed data which is collected from the signup form. Then match them with some logic if all of the logic required then the controller will store data to the database and successfully register the user. Sample code is given in **Figure 4.10**

```
[HttpPost]
[AllowAnonymous]
public async Task<string> Signup(RegisterViewModel model)
{
    var listError = new ArrayList();
    var user = new ApplicationUser
    {
        Name = model.Name,
        LastName = model.LastName,
        Gender = model.Gender,
        UserName = model.Email,
        Email = model.Email,
        Birthday = new DateTime(model.BirthdayYear, model.BirthdayMonth, model.BirthdayDay),
        UseDefaultPicture = true
    };
    if (user.age() < 13)
    {
        listError.Add("age_restriction,You should be at least 13 years old to sign up");
        return JsonConvert.SerializeObject(new
        {
            result = false,
            ErrorMsg = listError
        });
    }

    var result = await UserManager.CreateAsync(user, model.Password);
    if (result.Succeeded)
    {
        await SendEmailConfirmationCode(user.Id, "Confirm your account");

        ViewBag.Message =
            "Check your email and confirm your account, you must be confirmed before you can log in.";
```

Figure 4.10: Controller for Register Model

Here is the view for landing page. From this page all of the data is requested to the controller then controller match with the model and then check the logic for storing that data to the database. The landing page view code is given **Figure 4.11**

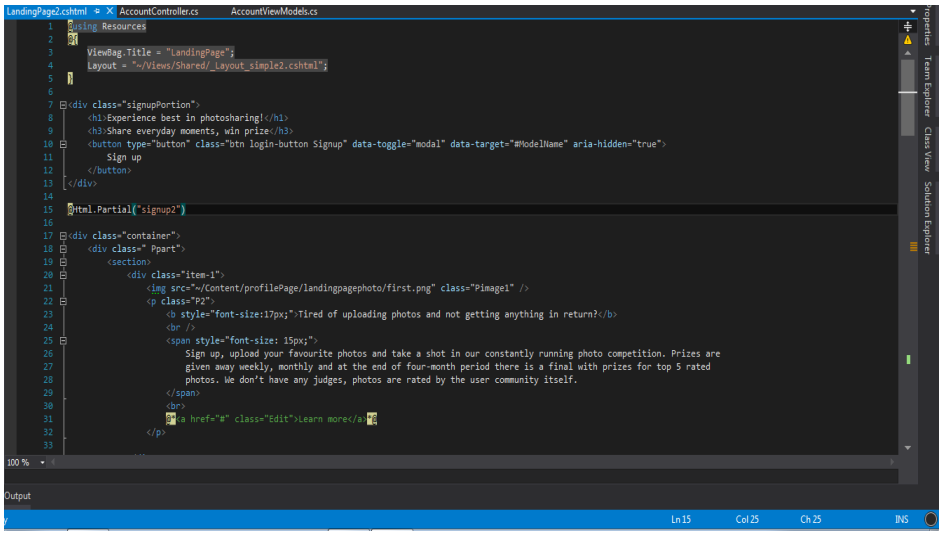

Figure 4.11: View for the landing page

This is the total process how the MVC pattern work. I follow the total process and pattern for my task. And at last I complete the total task they want to. They liked my work and give me an agreement paper for doing work into their company Glostars as a ASP.NET Full Stack developer.

4.3.3 First Work

First work is that I need to re-design their website. They have some UI design but which is developed using only html CSS and JavaScript. My work is that I want to use that design and then implement it to their existing website. So at first I need to convert full design into the Asp design which is called cshtml.
I am going to share some screen shots of my work what I need to do and also numbering the work they need from me as a first work.

4.3.4 First Work requirement

i. I have to change the whole landing page of their website.
ii. I need to change the navigation bar of their full website.
iii. Change the notification button icon
iv. After changing the design, I have to connect all of them with Asp.net MVC and backend server.
v. Change the navigation or menu bar after login all page and before login all pages.

So I start to solve one by one requirement. I already showed the landing page picture. So I need to implement the landing page replacing their existing landing page. So the landing page designs code they give me. but it was made with bootstrap 4 version. But their website already used bootstrap3 version so there is a confliction between this two versions. That was a huge problem and it takes about a week to solve this problem.

4.3.5 How I solved the problem

For solving this problem, I made the design with bootstrap 3 again. Because they give me the version of bootstrap 4 design which will not support into their website. So I took the responsibilities and made the design into bootstrap version 3 for solving this confliction problem.They also give me a code of navigation bar but that was not worked because that was also made in bootstrap version 4. so for the work I need to code it into bootstrap version 3. Here is the navigation bar picture which I code and designed in bootstrap version 3 given below in **Figure 4.12** and **Figure 4.13**

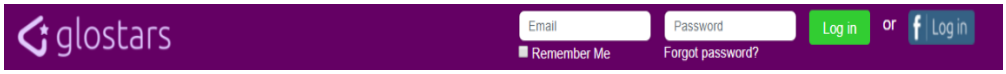

Figure 4.12: Before login navigation bar

Figure 4.13: After login navigation bar

This two navigation bar I re-designed in bootstrap 3 for matching our version and remove the confliction between bootstrap 3 and 4. After our design part is ready then I converted it into asp design for connecting with backend. Here I use the design pattern MVC. I created a view and "layout.cshtml" file for adding those design and then merge them with their existing website. I read all of the code of their existing project find out those lines which is written for that navigation bars. So I replace the code of landing page and this two navigation bars for all of the page of the website and placed them correctly. Here is the sample code for the navigation bar given below I collect this photo from my project work:

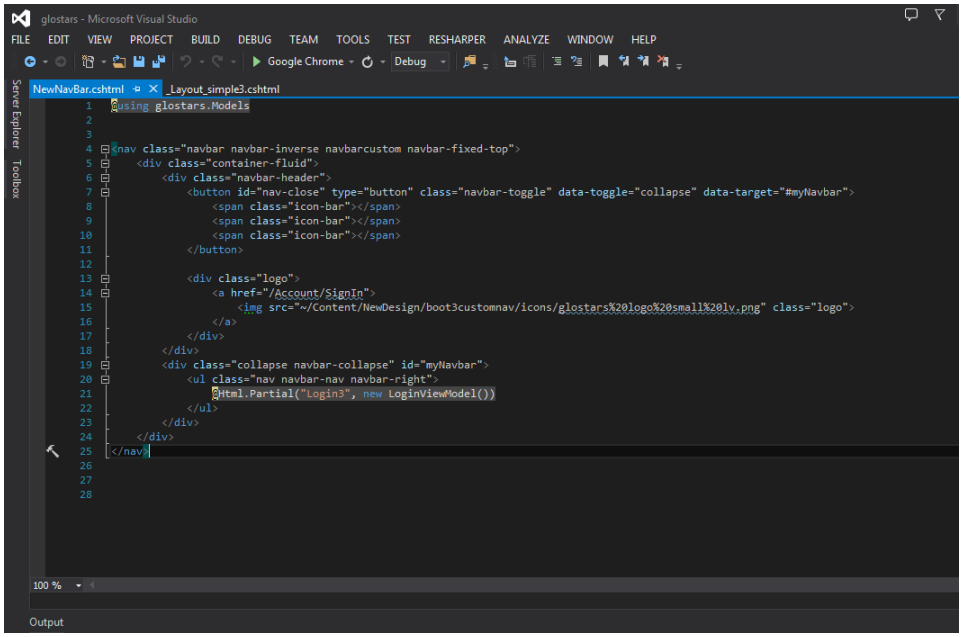

Figure 4.14: Navigation bar code sample

In this way I solved all the requirement of my First work and also delivery the all of the work in time to our Glostars company CEO. Basically he maintains the whole developers work of all employees. After finishing my first work they give me more requirements for fix that problem that means they give me the bugs for solving it. I used debugging tools for solving that all bugs. Navigation bar code in **Figure 4.14**

4.3.6 Debugging Tools:

I used visual studio debugging tools for testing c# code.For the Frontend debugging I used Google chrome Inspect Element that will help us for find out the problem and also solving the problem by using it. Sample Screen shot is given in **Figure 4.15**

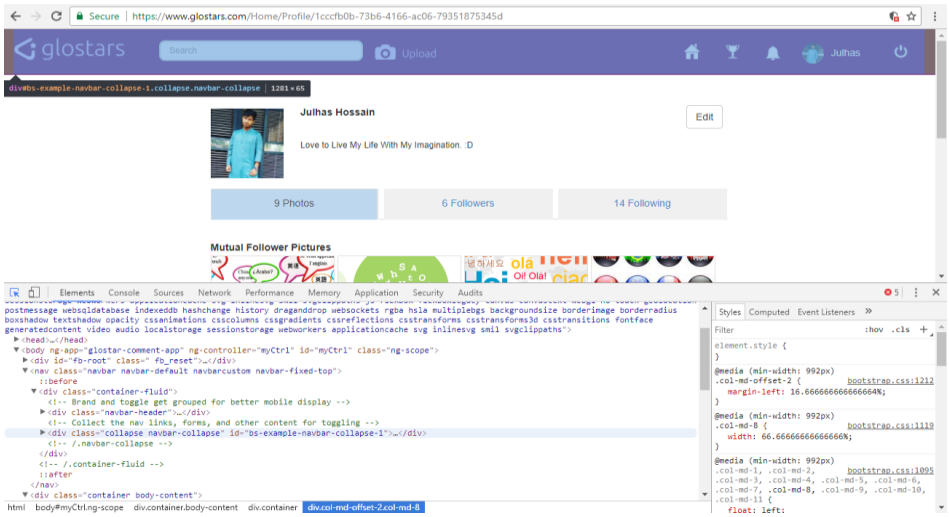

Figure 4.15: Google chrome Inspect Debug Tools

4.3.7 Second Work

Solving bugs:

When I have done their website work there was some bugs out there. So they find out those bugs and give me those bugs for solving it.So bug requirements are:

i. When a user tries to register the register form should be validating that time.
ii. Change the Background picture of the landing page.
iii. Change the content of the landing page.
iv. Change the About, FAQ, Contact Us, Media Page Navigation Bar.
v. Change the color of signup button from red to green color.
vi. Into the Signup popup terms of use button not working.

Solve 1

For handling validation Register page which is popup when we click into the Signup button. We can validate a form in many ways such as "html required" validation or "Validation in Model Class". I used Html Required validation for doing

the task. Here is the screen shot when I fix that bug.Sample screen shot is given in **Figure 4.16**

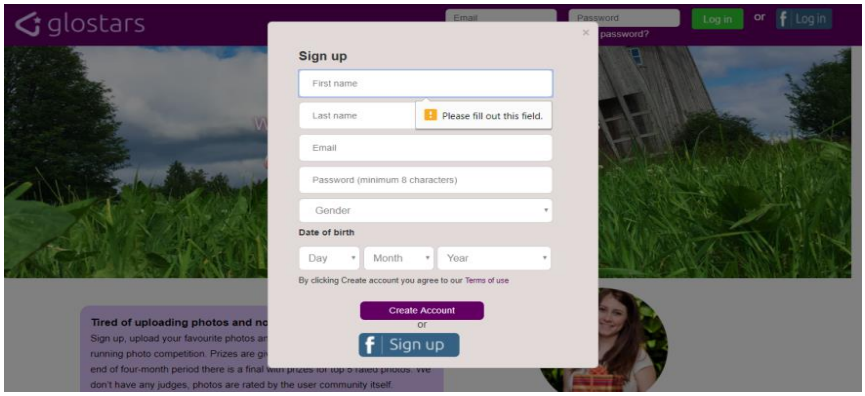

Figure 4.16: Validation of register form

Solve 2

For changing the background picture, I am just replacing the picture with the new picture into the code and successfully done this requirement.

Solve 3

Into Some html tag I changed the content for the landing page website. The content basically they give me for their website. Sample is given in **Figure 4.17**

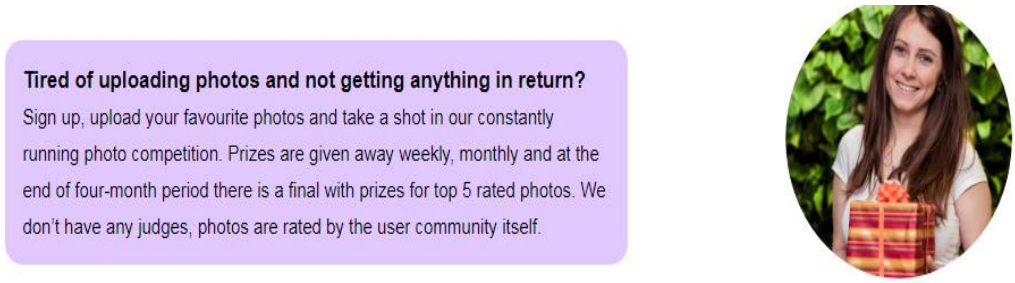

Figure 4.17: Content of the landing page

Solve 4

For Changing About, FAQ, Contact Us, Media page navigation bar I made a different layout page into the view folder which will common in all of this four page and then call that layout page to the other html page. In this way I solved the problem of all this page's navigation bar. Here is the difference we can find out if we see these two picture where I showed the before bug on the page and after solving the bug of that four pages.Sample screen shot given of this bug is **Figure 4.18** and solve is **Figure 4.19**

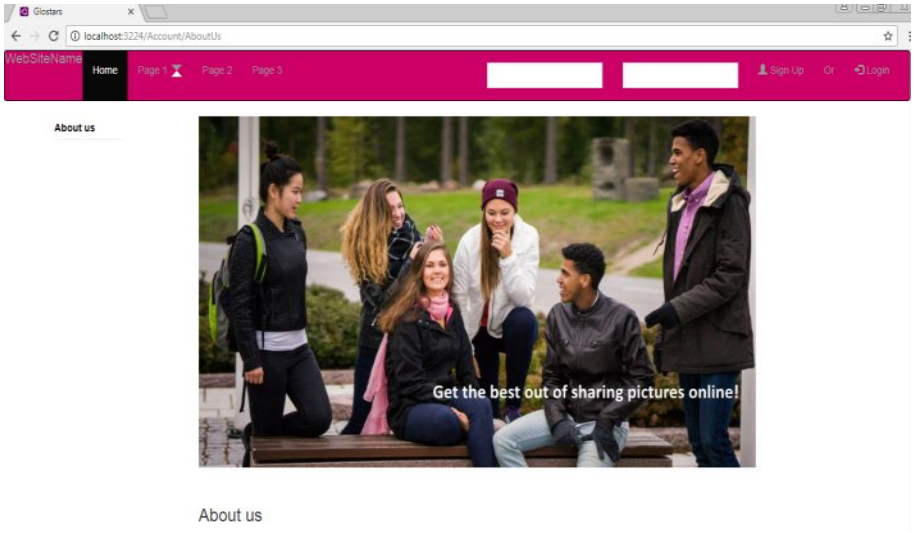

Figure 4.18: Before solving bug 4

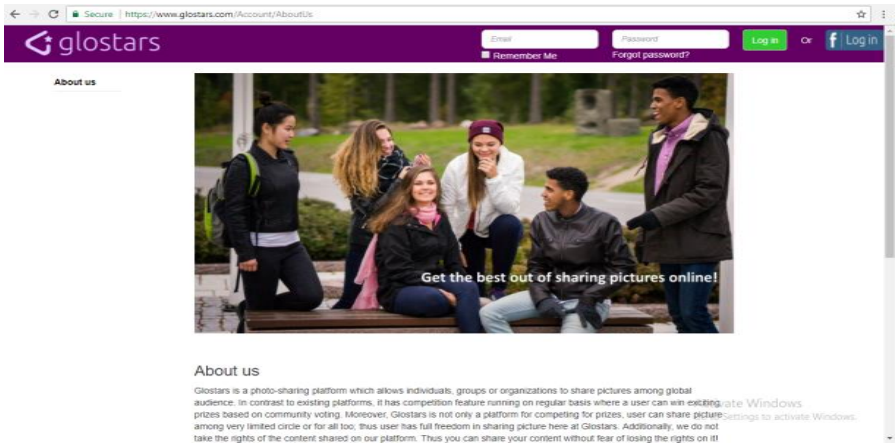

Figure 4.19: After solving bug 4

Solve 5

Changing the color of the signup button from red to green I only change the css file code where the color is given for that button is red. I just replace it with Green. In this way button color changed into green.

Solve 6

For solving this requirement, I need to learn the bootstrap 3 modal. Which is basically used for popup effect into the website. So I learned the popup effect into bootstrap 3. Then I liked that popup which the button terms of use into the signup form and successfully It's working.

4.3.8 Bug Fix Part 2

After solving all of the problem they give me more bugs which is more challenging tasks for me. They give the task of changing some design of their website. And the requirements they want to solve which is given below:

i. Into the Landing Page there is a problem in navigation bar which is it so close in left side it should be more right side.
ii. After Login navigation bar have two things which is Search bar and Upload button it should be more left side.
iii. After responsive the navigation bar name should be on beside of the profile pic into the navigation bar.
iv. Upload Button should response faster than now.
v. Remove the IOS App link from the Landing page.
vi. There is a line beside to the Recognition valued user. Need to remove that line which defect into the design.
vii. In every page navigation bar should be fixed on the top. If we scroll the mouse button it should not fade away.
viii. There is no hover effect on power button and upload button.
ix. When minimize the Landing page it should be responsive like about page.
x. There is a button in navigation bar on about page when it clicked it don't response so need to fix it.

Solve 1

Basically there is a html tag called "ul" that means unordered list. And that portion is given so much margin into the left side in the CSS file. So I just minimize the margin size from the CSS code and solve the problem so easily. Sample screen shot given in **Figure 4.20**

Figure 4.20: Navigation bar redesign bug fix

Solve 2

At first when I implement the new design to the Glostars website the problem is occurred at that time. After log into the Glostars website the navigation bar there is a search and upload button. But it is more right side. This problem is like as number 1 problem. By the same way I solved that problem. Just changed the css code from the css file which is "margin-right: -22px;" . Sample screen shot given in **Figure 4.21**

Figure 4.21: Search field CSS bug fix

Solve 3

After responsive the navigation bar name should be on beside of the profile picture into the navigation bar. At first the name was a different section from profile picture section. but it has a problem when we minimize the website the name of the user is not showed beside the profile picture circle. But after solving the html tag and

replace the name into the code then it showed beside the profile picture circle. Sample screen shot give in **Figure 4.22**

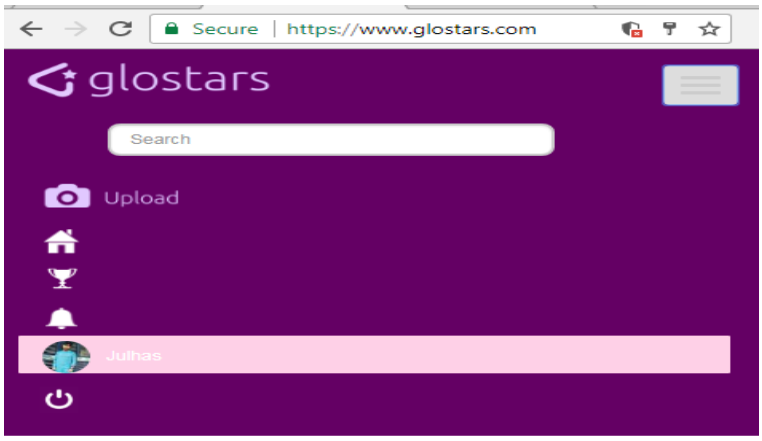

Figure 4.22: Name and Image side by side bug fix

Solve 4

Upload button from the navigation bar was not working fast at the time when my work was published on the server. But there is no problem with that button. The main problem is happened from the server. When anything is published on the server, the server response late at that time. After some time passed the server become faster and upload button automatically working faster.

Solve 5

For Removing the IOS logo and link I am just commenting the html line. So when it is commented then it will not execute into the landing page so the IOS link will vanished at that time.sample code for solving this work in given in **Figure 4.23**

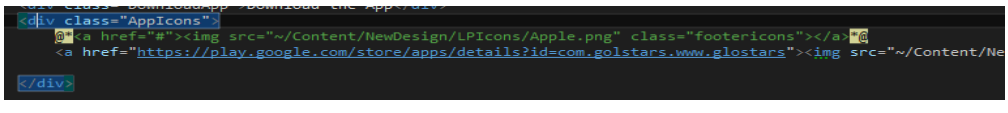

Figure 4.23: Removed Html code and fix bug

Solve 6

When I solved all of the 10 requirement. They find out more problems that means bugs so I need to solve that problem too. If I have no knowledge about html, CSS, JavaScript, c# then it will not possible to fix this requirement. But I can solve that because I know all of those things. And it's so comfortable for me. So next bugs which are given from the Glostars is described below.

Solve 7

Problem is that in every page navigation bar should be fixed on the top. If we scroll the mouse button it should not fade away.For solving this problem, I need to know the position tag on CSS. By using Position attribute we can solve this bug so easily. All of the pages has navigation bar which is called "<nav>" tag in html. So for this html tag I need to add a CSS position attribute for fix that navigation bar. So I write "position:fixed". This code basically solved my problem. After doing this all of the pages are locked at the top of the page. when I scroll the page navigation bar didn't fade out at time. Sample bug is given in **Figure 4.24**

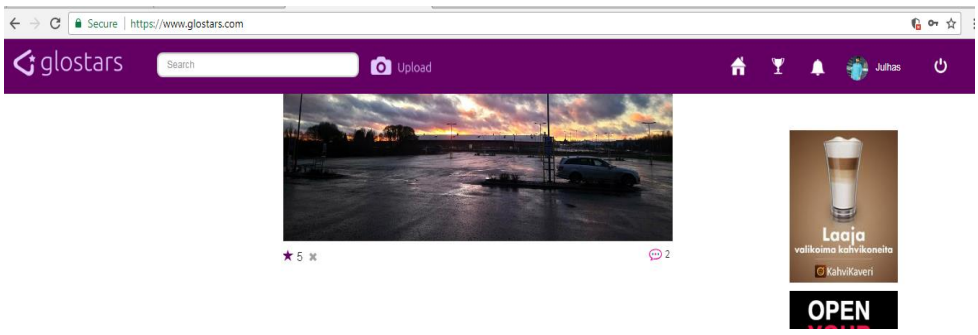

Figure 4.24: CSS bug fix

Solve 8

Into this section when I added navigation bar to the website there is no hover effect into the upload button. Hover basically a CSS attribute which make a button shadow effect or background effect. So I make a hover effect for that upload button to the CSS file and solved the problem by adding the effect. Screen Shot of Upload button bug given in **Figure 4.25**

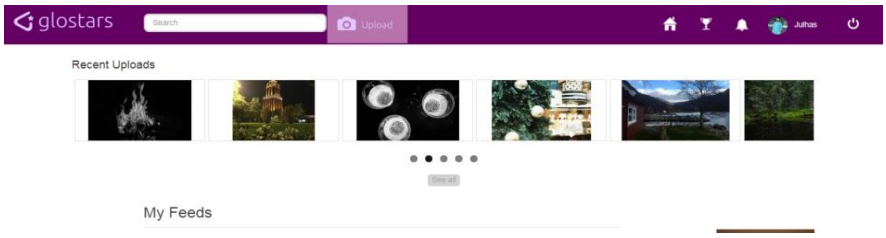

Figure 4.25: Upload button bug fix

Solve 9

When minimize the Landing page it should be responsive like about page. The main problem is that landing page is not responsive properly that man's its component has margin padding and bootstrap CSS problem that's why it didn't work properly. For fixing this problem I used the bootstrap CSS file where I found some problem into the code. Also the debugger tools notify me that there is problem in default bootstrap CSS file code. I opened that folder and file and customize the responsive section. There was some code taken extra margin padding from the left side that's why this problem occurred. After fixing the bug in CSS file margin padding section landing page responsiveness working properly. Screen Shot of the responsive input field is give in **Figure 4.26**

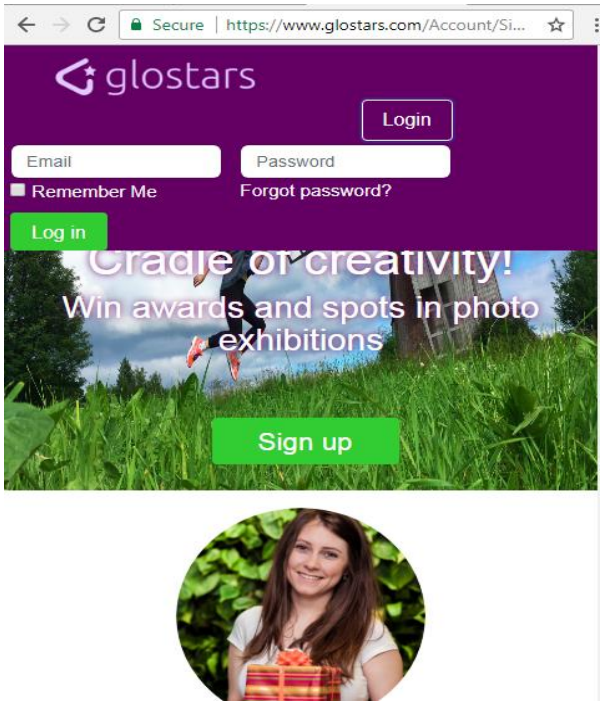

Figure 4.26: Responsive input filed bug fix

Solve 10

Problem is that there is a button in navigation bar on about page when it clicked it doesn't response so need to fix it. For solving this problem used a "JQuery" code which basically handle all the action things. JQuery is JavaScript library. By using JQuery its really easy to handle any html tag.JQuery had many default function like click, fade, display, animation etc. So I used the click function and add a logic that if it clicked then it will open the options of login otherwise it will not open anything. At first this JQuery library is not implemented into our project. For this reason, that problem occurred into the navigation bar. Responsive button bug and fix is given in **Figure 4.27** and **Figure 4.28**

Figure 4.27: Ressposive button Bug

Figure 4.28: Ressposive button Bug fix

4.3.9 Bug fix part 3

Bug Requirements:

i. When click in notification button all of the time zone gone down from the box.
ii. After searching something in search button there is a section called ‘see all people’ but it’s not working properly
iii. In the Url Home/Glostarsphoto navigation bar is not changed.
iv. Into the Url Home/Prizes page change two section one is Sep-Dec 2017 and another section should be written in Updated on Oct 2017
v. Into the Url Home/Notifications their navigation bar should be changed.
vi. When clicking any hashtag their navigation bar is old. Also the same problem in search result page.
vii. Need to change the star color from pink to violet.

Solve 1

It’s a simple problem I found out that is there is section called span which is a html tag. On that tag the time is stored. So I am just customizing that span tag. I added the time span to that span so that they don’t break separately. So after doing this work all of the problem just solved. All the time is showed into the notification bar when we clicked it. Sample bug of Notification is given in **Figure 4.29**

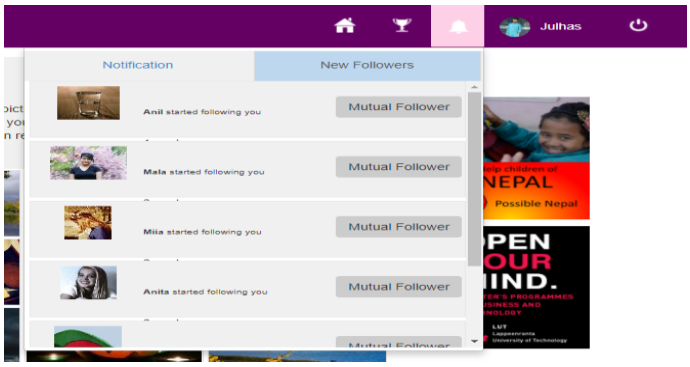

Figure 4.29: Notification time bug

Solve 2

After searching some user into the search bar we will see a section that is called "see all people". When we click into that section there is no page behind that button so nothing is happened when we click that button. For solving that problem, I made a section for that button and when I click that button all of the user is showed into that page. It's simple solving section I just made a view into our project and add the user to that page.sample screen shot of search user is given in **Figure 4.30**

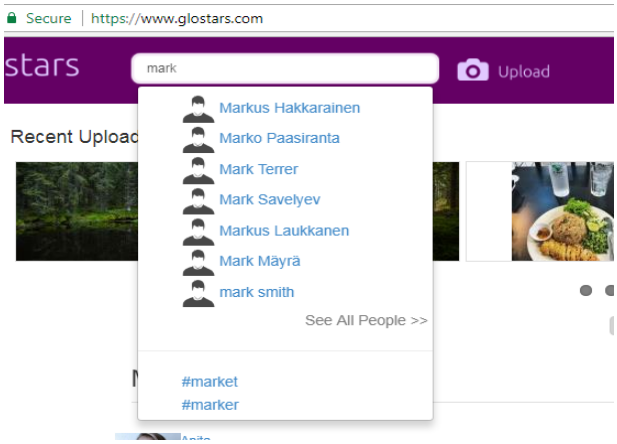

Figure 4.30: search user bug fix

Solve 3,4,5,6

All of these bugs have same problem. All of these pages do not have the layout of new navigation bar. So I selected them individually and then replace the old layout html file with the new layout file. So after changing layout file all the pages have new navigation bar.screen shot of bug and bug fix is given in **Figure 4.31** and **Figure 4.32**

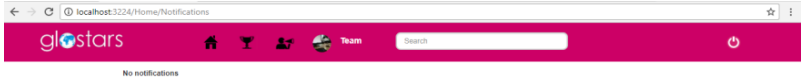

Figure 4.31: Navigation bar bug

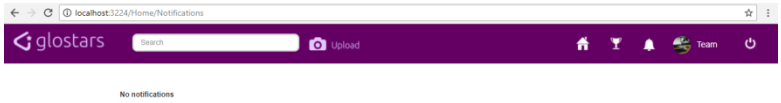

Figure 4.32: Navigation bar bug fix

Changes happened into the notification page navigation bar.Sample screen shot is **Figure 4.33** which is bug and **Figure 4.34** which is solved of the bug

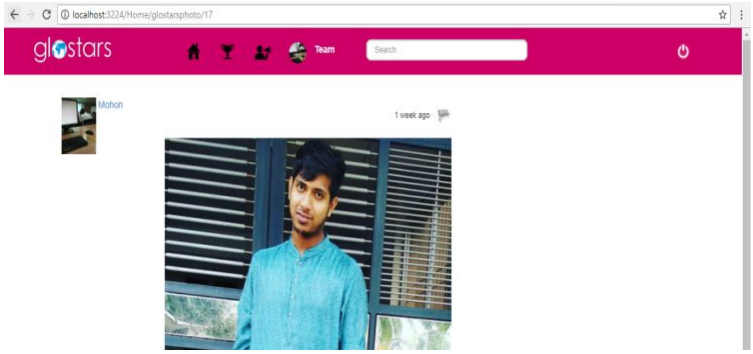

Figure 4.33: Navigation bar in home page bug

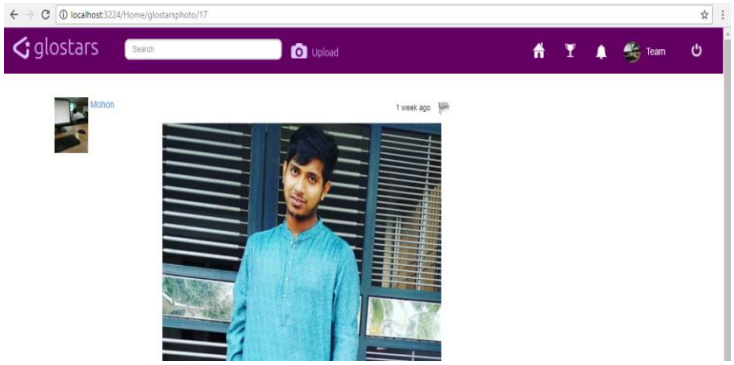

Figure 4.34: Navigation bar in home page bug fix

Changes into the Glostars photo page which is the navigation bar before it was look like pink color and new design it looks like violet color and some functionalities changed. In **Figure 4.35** there is a bug in navigation bar. In **Figure 4.36** I solved that bug

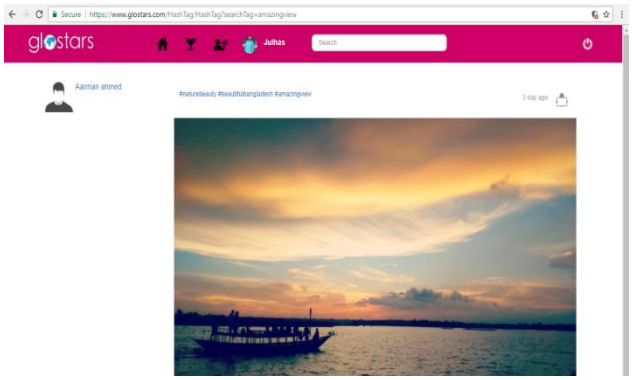

Figure 4.35: Navigation bar bug in photo page

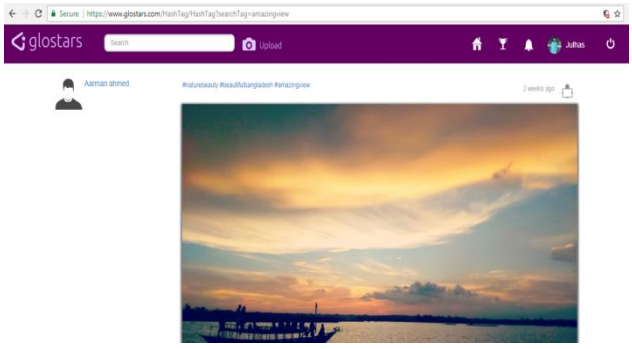

Figure 4.36: Navigation bar bug in photo page fix

Solve 7

When anyone uploads a photo other user can be rating that photo by giving them star. It is just like face book like system. But my work is that I need to change that star color from pick to violet. So for this I find out the code from the project where that star color is given as pink. At last I found out from the CSS file and then I change

it to the color violet. Before solving it looks like **Figure 4.37** and After solving the problem it look likes **Figure 4.38**

Figure 4.37: Star color bug change color to violet

Figure 4.38: Star color change to violet bug fix

So this is the all requirement they give me to solve. I solved all of the bugs and made them happy with my work.

4.4 Testing

In this testing section we always used technology called NUnit testing. By using this technology, we find out where our logic is not working. We find out the user experience about the front-end side of our website. Basically testing section really helps us about the software quality and assurance. If the performance of the software was not good, then it will work so slow. So we need to find out how can we configure our software so that it will work so much faster. Because faster software always gives comfort to the user. Focusing on user our testing work is important. Nunit testing gives us where should we will logic and how to configure them. I fixed so many bug work

into Glostars. So we need to test that my fixing bug is in appropriate way. At last we test all of the bugs and logic which I implemented and that works fine which is given by the technology called Nunit testing. Sample result of testing given in **Figure 4.39**

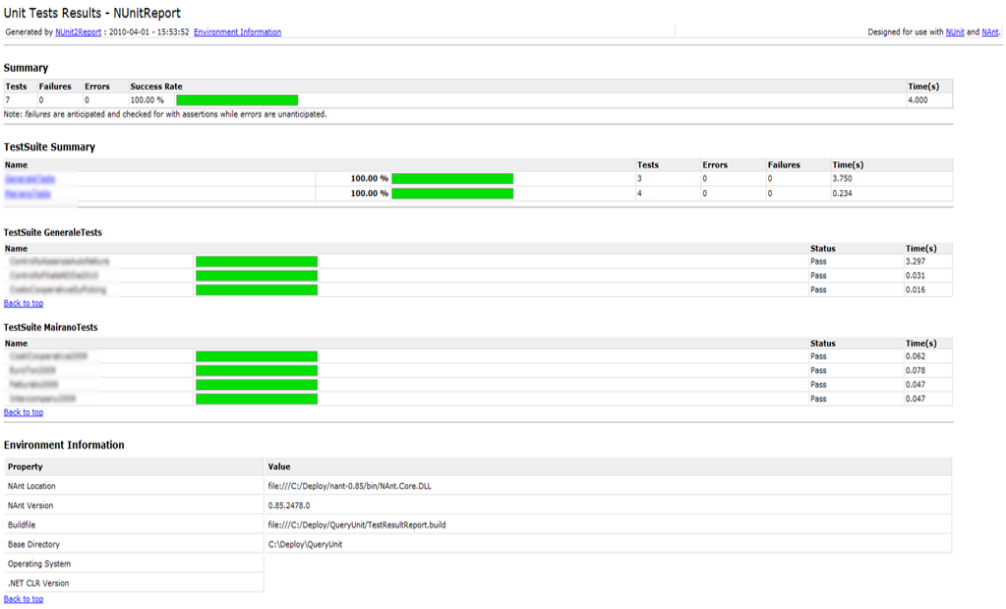

Figure 4.39: NUnit testing result sample

CHAPTER 5

PROPOSED PROJECT(S)

5.1 Project Background

Into this background section I will describe the Proposed Project which I need to develop in future. They have many features to implement into the Glostars. Their next proposed project is Geo-location photo upload system that means when a user uploads a photo it should be remember that the location of the photo is uploaded. Also they have another feature which is chatting application for their website. It is now my ongoing project and I am developing it. For the Proposed project they need the API for the chatting application so that they can use those API to the android and also can use the application for the mobile user client.

5.2 Project Design

As I already mention that my proposed project is about the chatting application which I need to make using this thing called Asp.net MVC, SignalR, LINQ, Code First migration approach. So when I start my work I make a diagram or design of that chatting application. I need to create two table into database one is for chat room where two users will stay and communicate or chat each other. And then I need to make another table where all of the message will be stored.

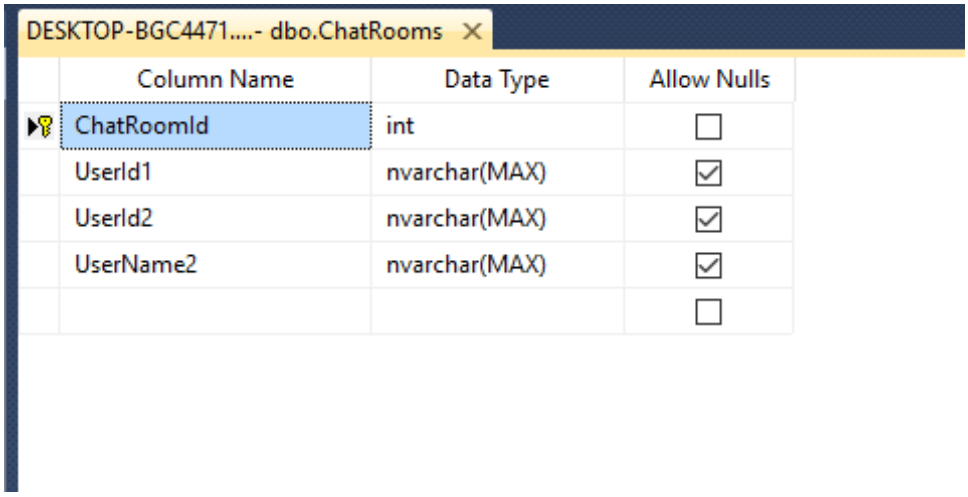

Figure 5.1: Chatroom Database table

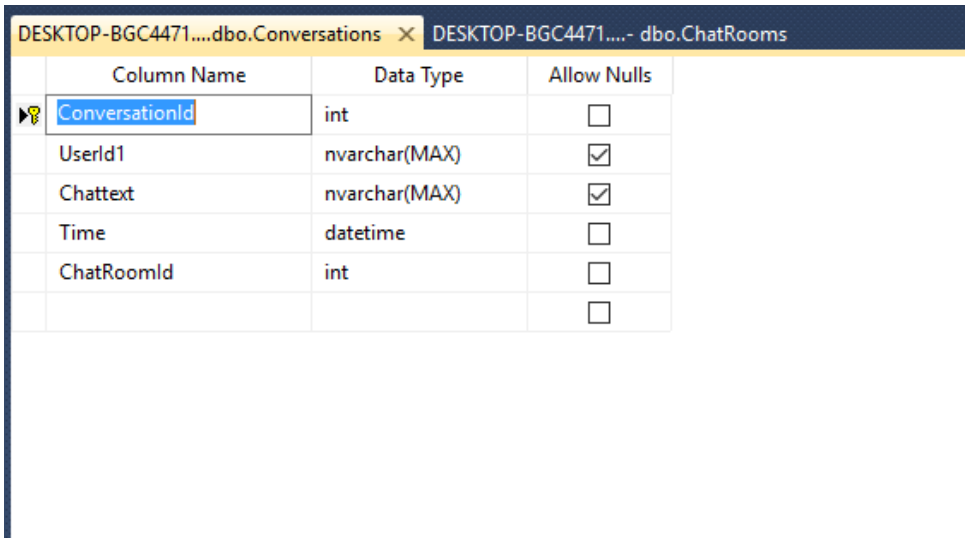

Figure 5.2: Conversation Database table

Here is the two table for my chatting application which will store all of the user and their message. At first two users will make a chat room into the chatroom table and then their message will be stored into the conversation table. After adding all of the data to the database we need to fetch the data to the user by using the chat room id. Then it will be successfully work in one to one communication process. If we don't use this process, then we cannot apply one to one communication. Then it will work like a whole group communication. After successfully fetching data from database we need to implement SignalR so that user can use the application in real time.Sample screen shot of database two table is give in **Figure 5.1** and **Figure 5.2**

5.3 Project Implementation

At first I am going to describe the requirement that Glostars want from me into this chatting application. So the requirements are:

i. One to One communication
ii. Only photo as attachment
iii. Edit or Delete own message from the sent chat (Highlighted as *Edited* or *Deleted* as applicable)
iv. Searching particular conversation from the list of previous chats
v. Message can be sent to: Mutual, Follower, Following Anyone who is not in mutual, following or follower list can be messaged by visiting his/her profile. He will not appear in the New Message search result.
vi. In others' profile there will be a button: Send Message
vii. Encryption
viii. Real-time chatting
ix. Blocking: From Message Settings (inside that particular conversation) a user can select Block. See Instagram as example
x. Web API

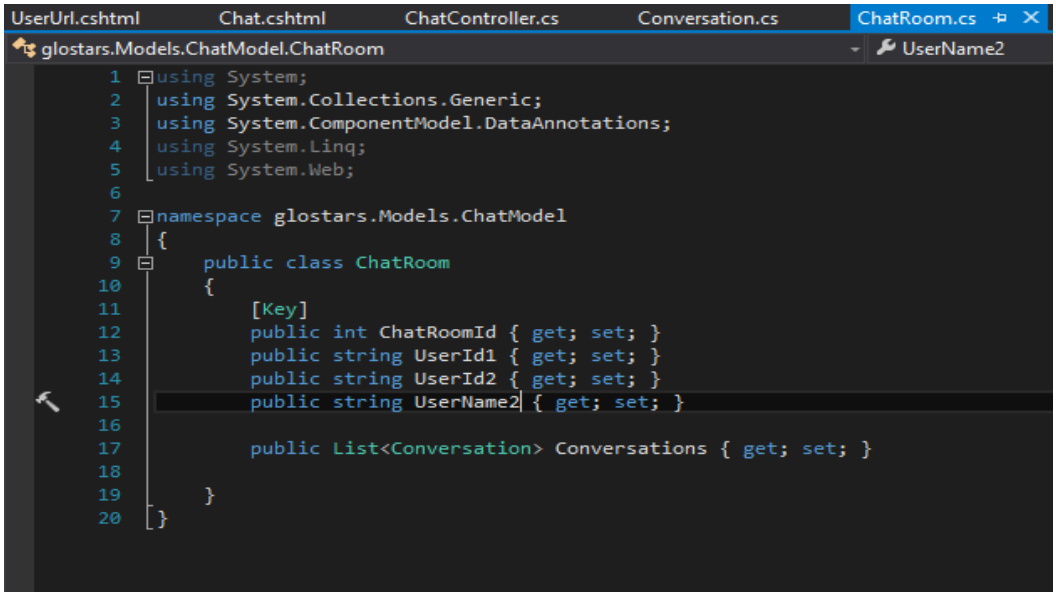

Figure 5.3: Chatroom Class

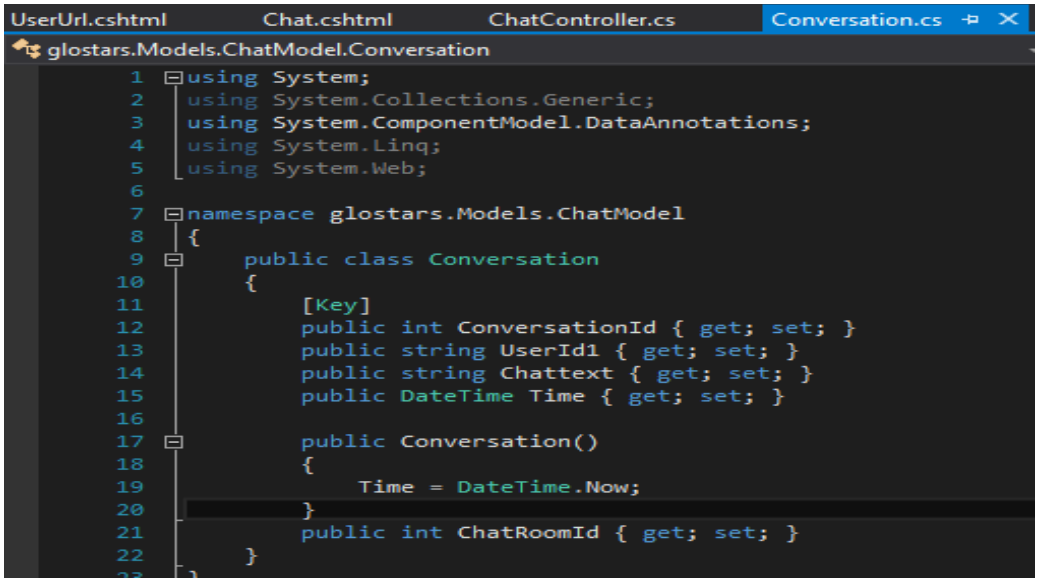

Figure 5.4: Conversation Class

Here is my two class which will make two table into the database. Why they will make table into the database because I am using the code first migration approach using Entity framework. Entity Frame work has the ability of ORM technology which create this table. ORM is an Object Relational Mapping. Sample code of conversation class in **Figure 5.4** and chat room class in **Figure 5.3**

After mapped the table we need a controller which will create view for the user also pass data to the user using so many logics. Here I make a controller called Chat Controller. Into this controller I made so many actions and returning many view to the view page. I used html helper or the Razor template for collect data from the user. chat controller sample code is given in **Figure 5.5** and the razor template sample code in **Figure 5.6**

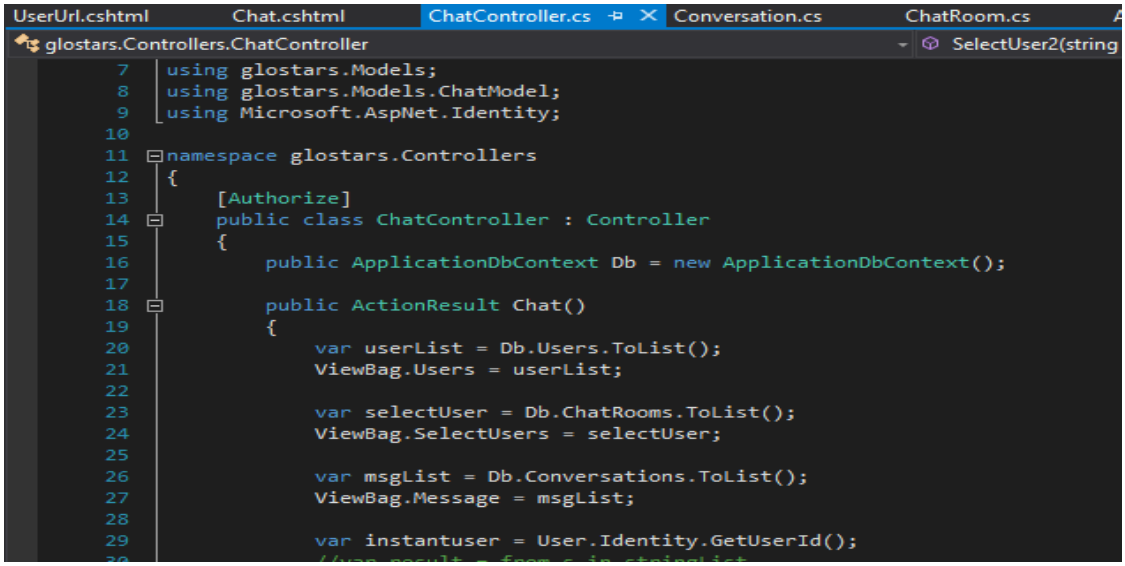

Figure 5.5: Chat Controller

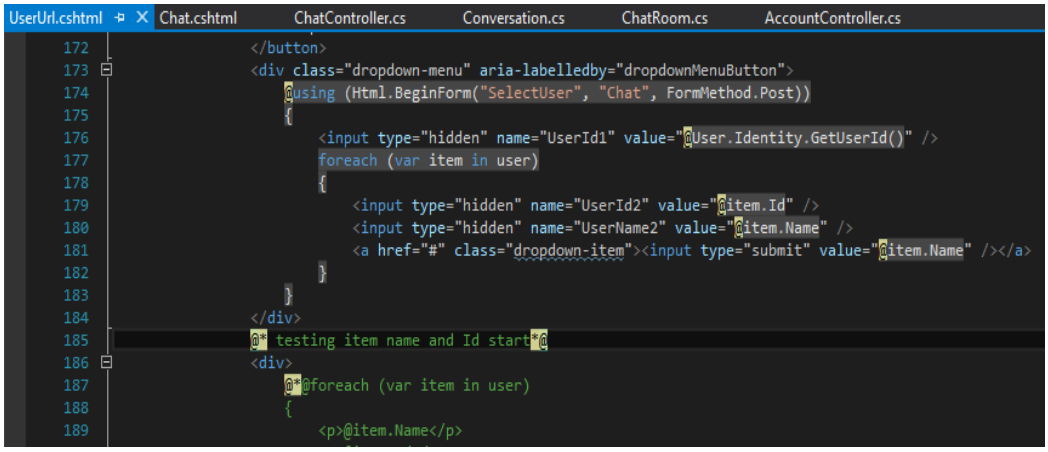

Figure 5.6: Razor template or html helper

So in this way I collect the data from the user and then check with controller logic also I used LINQ technology which help me to fetch the specific data from the database. I already mention LINQ into the technology section what LINQ is. LINQ help me out always where I found critical logic with data binding with table and also retrieving the data from the table. Sample LINQ code given in **Figure 5.7**

```
var dhur=  from s in selectUser
           where s.UserId1 == instantuser
           select s;
ViewBag.Dhur = dhur;

return View();
```

Figure 5.7: LINQ Code

After doing this task I need to implement the SignalR so that users can use the application in real time. What is real time? Real time means when a user sends a data to database it should return the latest data to the user without refreshing the browser. So a user doesn't need to refresh again and again to see the latest chat into the chat box. It will come when a user selects it. Signalr sample code in **Figure 5.8**

```
$(function () {
    //this line is for auto-genarated proxy for the hub.
    var chat = $.connection.chatHub;

    //this function is for hub can call back to display message.
    chat.client.addNewMessageToPage = function (name, message) {

        // adding the message to the page.
        $('#discussion').append('<li><strong>' + htmlEncode(name) + '</strong>: ' + htmlEncode(message) + '</li>');
    };

    //Storing user name for prepending to message.
    $('#displayname').val(prompt('Enter Your name:', ''));

    //Initial focus to message input box.
    $('$message').focus();

    //Start the connection.
    $.connection.hub.start().done(function() {
        $('#sendmessage').click(function () {

            //call the send method to the hub
            chat.server.send($('#displayname').val(), $('#message').val());

            //clear the text box and reset focus for next comment.
            $('#message').val('').focus();
        });
    });
```

Figure 5.8: SignalR Code into the project

I made the one to one chat right now but need to full fill all of the requirement they want from me. I am doing the work and next procedure are the same as right now. so I am going to implement rest of my work like the same way using Asp.net MVC. It's a huge working process so its need more time for complete. I am working with it.

I have more requirement to fulfil. Data encryption, Filtering, Sorting, Edit, Delete and Block is my next work for fulfil the requirement. Now I am going to show how much my work is completed from this below picture.

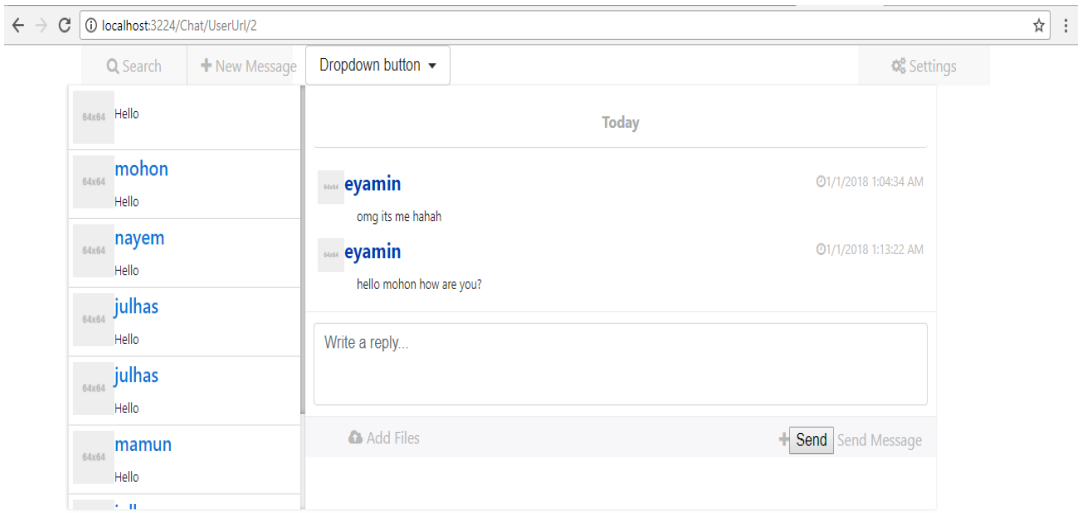

Figure 5.9: Chatting Application

Here is my chatting application where a user can chat with another user. At first he/she can select his/her friend from the dropdown menu. After selecting friend, he will show in the left side chat box. After click that friend he/she can send the message to his friend. On same things will happen for his friend also and then he/she can also send the message. In this way they can communicate with each other.

This application is in ongoing process that means it is in under development so the figure is taken from when I working with the chatting application. I need more time for its fulfil development because company have more requirement for this feature. Here we need MVC pattern so that user data submits from the view then controller check the logic and add to the database using Model class. So at first we need to create two class which will create two table into the database for storing the data. Sample Screen shot of chat application given in **Figure 5.9**

CHAPTER 6

CONCLUSION

6.1 Conclusion

Internship program provides a chance to the students to implement the theoretical knowledge in the tough real world environments. This internship program in 12th Semester arranged by Department of Computer Science and Engineering gives me a chance to implement the theoretical knowledge which has been learned last 3.5 years. This is a new experience which provides the opportunity of self-assessments. What I learn from the internship and why it was important are following

i. It was an opportunity to "test drive" a career (would I be happier in this platform or should I change my motto)
ii. Accumulating new skills
iii. Gaining a "real world" perspective on an occupation
iv. To gain confidence
v. Career-relevant internship experience will make a better impression on my resume.
vi. To build motivation and work habits.
vii. To build my network through whom I met in an internship. I hope that, in future this experience will very helpful for my professional life.

After finishing my all of the task and logic implementation I can say that all of the work is fine. And there is no problem into the software or website of Glostars Oy. It's is really an innovative idea. I liked their idea and have fun working with them. I learned so many new things from them and it's my achievement from them. I will thank all of the Glostars them and member for their supportive work and hard work. I hope we will be a giant website in near future. All of the feature of this Glostars website is really so much different from others. So as a result I can say that it will be a huge product in near future. From my experience for the result section I can say that I give them my 100% to them and always try to finish my work in deadline.

Every work and every person life has a bad time and a good time. I am not different from that. I also face so many problems when I working in the Glostars Oy. Problems can be personal or official whatever it is we need to cope with it. And work hard more to catch the success. So I manage all of this things and it helps me a lot. So after all this a huge experience for me to know how a website or how a software deal with user.

6.2 Recommendation

All this recommendation is based on my personal working experience.

Recommendation to their services

i. They need to upgrade their website service to attract more clients.
ii. They need to change their System architectural design so that they can make their system faster to attract more customers.
iii. They should add helps and suggestion section for customer to improve service.

Recommendation to software & hardware services

i. All of the hardware they used is well but they should upgrade it into SSD so that it will faster than now.
ii. They are totally depending on Microsoft its really well but if they have the scope of open source then it will be better.

Recommendation to other services

i. Internet service should be upgraded to increase data speed.
ii. There should be more effectiveness in user comfortable.
iii. There should be a more effective training program for beginner client of the website.

REFERENCES

[1] Neward, T., Erickson, A. C., Crowell, T., & Minerich, R. (2011). ASP. NET MVC. *Professional C# 2.0*, 341-355.

[2] Frain, B. (2012). *Responsive web design with HTML5 and CSS3*. Packt Publishing Ltd.

[3] McCormick, E., & De Volder, K. (2004, October). JQuery: finding your way through tangled code. In *Companion to the 19th annual ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications* (pp. 9-10). ACM.

[4] McCool, J. M., Widrow, B., Hearn, R. H., Zeidler, J. R., Chabries, D. M., & Moore, R. H. (1981). *U.S. Patent No. 4,243,935*. Washington, DC: U.S. Patent and Trademark Office.

[5] Fedosejev, A. (2015). *React. js Essentials*. Packt Publishing Ltd.

[6] Meijer, E., Beckman, B., & Bierman, G. (2006, June). Linq: reconciling object, relations and xml in the. net framework. In *Proceedings of the 2006 ACM SIGMOD international conference on Management of data* (pp. 706-706). ACM.

[7] Kumar, V. (2013). ASP. NET Web API. In *Beginning Windows 8 Data Development* (pp. 123-146). Apress.

[8] Politis, D. N., & Romano, J. P. (1994). The stationary bootstrap. *Journal of the American Statistical association*, *89*(428), 1303-1313.

[9] Aguilar, J. M. (2014). *SignalR programming in Microsoft ASP. NET*. Microsoft Press.

[10] Hejlsberg, A., Wiltamuth, S., & Golde, P. (2003). *C# language specification*. Addison-Wesley Longman Publishing Co., Inc..

[11] Dirksen, J. (2014). *Three. js essentials*. Packt Publishing Ltd.

[12] Darwin, P. B., & Kozlowski, P. (2013). *AngularJS web application development*. Packt Publ..

[13] Snodgrass, R. T. (2000). *Developing time-oriented database applications in SQL*. Morgan Kaufmann Publishers.

[14] Crockford, D. (2006). The application/json media type for javascript object notation (json).

[15] Adya, A., Blakeley, J. A., Melnik, S., & Muralidhar, S. (2007, June). Anatomy of the ado. net entity framework. In *Proceedings of the 2007 ACM SIGMOD international conference on Management of data* (pp. 877-888). ACM.

[16] Galloway, J., Haack, P., Wilson, B., & Allen, K. S. (2012). *Professional ASP. NET MVC 4*. John Wiley & Sons.

[17] Hogan, B. P. (2011). HTML5 and CSS3: develop with tomorrow's standards today. Pragmatic Bookshelf.

[18] Hua, C. H. (2007). MVC design pattern. *Comput Knowledge Technol*, *14*, 051.

[19] Marchetto, A., Tonella, P., & Ricca, F. (2008, April). State-based testing of Ajax web applications. In *Software Testing, Verification, and Validation, 2008 1st International Conference on* (pp. 121-130). IEEE.

[20] Crockford, D. (2006). The application/json media type for javascript object notation (json).

[21] Standard, D. E. (1999). Data encryption standard. *Federal Information Processing Standards Publication*.

[22] Churkina, G., Schimel, D., Braswell, B. H., & Xiao, X. (2005). Spatial analysis of growing season length control over net ecosystem exchange. *Global Change Biology*, *11*(10), 1777-1787.

[23] Dean, J. W., & Bowen, D. E. (1994). Management theory and total quality: improving research and practice through theory development. *Academy of management review*, *19*(3), 392-418.

[24] Hunt, A., & Thomas, D. (2004). *Pragmatic unit testing in c# with nunit*. The Pragmatic Programmers.

APPENDICES

Appendix A

Questionnaires

I have face many interview question and I am going to share this questions into this appendix section. So questions are:

i. They asked me about myself.
ii. Asked about my skills.
iii. How much I like development.
iv. How was my problem solving skills?
v. Am I a self-learner or not?
vi. How much I enjoy my work life?

Answer 1

I simply describe myself, my university, my education, how I learn code, about my family all of this things I describe to them. It is just like a conversation.

Answer 2

Basically development is an art and passion. If anybody have not this passion, then it will be very difficult for that person to be good developer.

Answer 3

Logic is everything in programming. So I need to be a good problem solver. Yes, I have solved many problems in my university courses and programming contest.

Answer 4

I attend so many programming contest in ULAB and also achieve 2nd place when I am in the semester 6th. I solved the UVA code judge website problem when I am in undergraduate.

Answer 5

I always work with my self-knowledge. Also I prefer the self-learning. When I develop any product I always search Google and YouTube for that. Because everything in development section which is already developed by any other programmer so you need to search the right thing at right time. So self-learning is must for any programmer. And Yes I am a self-learner.

Answer 6

I thing work life is challenging life so all of us need to focus in it. Also we need enjoy our work life because without it we cannot do well in future. Everybody should love his love and I also love my work or job because I have passion in it. I really enjoy when I do the code in front of my pc.

Appendix B

Windows 7

Windows 7 is the Microsoft Windows operating system released commercially in October 2009. In development, Windows 7 was known by the code names "Blackcomb" and "Vienna". Windows 7 is built on the Vista kernel. Too many end users the biggest changes between Vista and Windows 7 are faster boot times, new user interfaces and the addition of Internet Explorer 8. The OS is widely available in three retail editions: Windows 7 Home Premium, Professional and Ultimate. Starter, OEM and Enterprise editions are available in some markets.

Because I was very comfortable with Windows 7 so, it was easy for me to understand the use of it on development. Here is the sample screen shot of windows 7 in **Figure B.1**

Figure B.1: Windows 7 operating system

When I stuck on some compatibility I get help from their official "Windows DEV Center". Compatibility Center is also available if any software needs to about its compatibility with the OS. It is very easy to setup a development environment on Windows 7. I can easily install or uninstall software on Windows 7. Not only their community but also their tons of help available on the ocean of internet. So it was not that tough for me to cope with it.

Appendix C

C#

C# is a hybrid of C and C++; it is a Microsoft language developed to compete with Sun's Java language. C# is an object-oriented programming language used with XML-based services on the .NET platform and designed for improving productivity in the development of Web applications. C# boasts type-safety, garbage collection, simplified type declarations, versioning and scalability support, and other features that make developing solutions faster and easier, especially for COM+ and Web services. Here is the sample code of C# in **Figure C.1**

```
using System;

namespace InheritanceApplication {
   class Shape {
      public void setWidth(int w) {
         width = w;
      }
      public void setHeight(int h) {
         height = h;
      }
      protected int width;
      protected int height;
   }

   // Derived class
   class Rectangle: Shape {
      public int getArea() {
         return (width * height);
      }
   }
   class RectangleTester {
      static void Main(string[] args) {
         Rectangle Rect = new Rectangle();

         Rect.setWidth(5);
         Rect.setHeight(7);

         // Print the area of the object.
         Console.WriteLine("Total area: {0}",  Rect.getArea());
         Console.ReadKey();
      }
   }
}
```

Figure C.1: C# Code

Appendix D

Reactjs with Redux

ReactJs is JavaScript library which is a really cool thing for developing a website front-end. Now a day it is so much favorite for developers. Programmers and web developers using it for developing a website so much faster. Also Facebook and Instagram already using ReactJs. That's why Facebook and Instagram are so much faster than any other social media website.

ReactJs has so many pattern into it for working on its way. Two pattern is most famous now a day.

i. Flux
ii. Redux

I am going describe a small brief about Redux. Redux framework is so much popular for its faster work. When a there is a multiple request on to the website redux can handle all of the request and also can retrieve the latest or updated data to the user. This is the main reason why redux is so much used in redux. Here is the sample Design of redux in **Figure D.1**

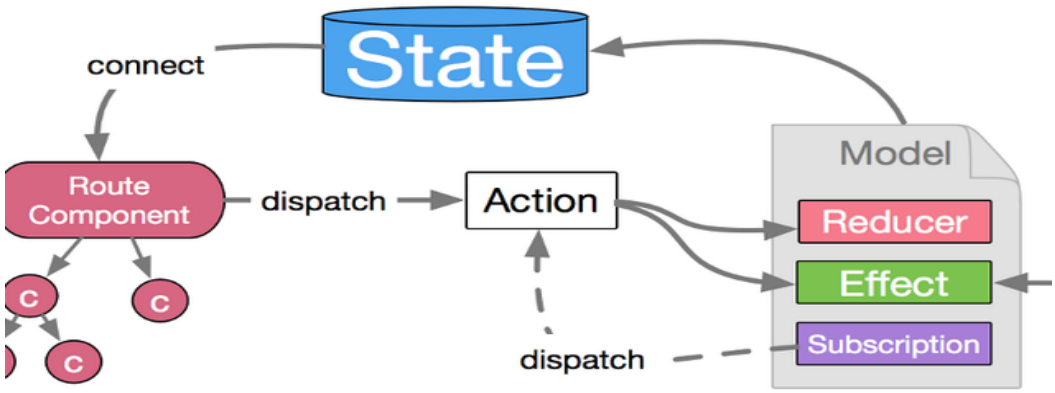

Figure D.1: Redux design pattern in ReactJs