



كلية العلوم



جامعة الفيوم

Sada Project

A graduation project document submitted to the Dep. of Computer Science as
partial fulfillment for the Requirement for the Degree of Bachelor in
Computer Science

By
Rehab Mohamed
Takwa Abd El-Salam
Mohamed Mahmoud
Mohamed Abd El-Moniem

Supervised by
Dr.Ayman Mosa

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Dedication

This thesis is dedicated to my father, who taught me that the best kind of knowledge to have is what's learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task can be accomplished if it is done one step at a time, and to all my family who have encouraged me all the way and whose encouragement has inspired me to give it all it takes to finish what we have started. To my school teachers who believed in us. Thank you. My love for you all can never be quantified. Allah blesses you.

Acknowledgment

It has been a great opportunity to gain lots of experience in real time projects, followed by the knowledge of how to actually design and analyze real projects. For that we want to thank all the people who made it possible for students like us. Special thanks to the Graduation Project Unit for the efforts they did to provide us with all useful information and making the path clear for the students to implement all the education periods in real-time project design and analysis. Furthermore, we would like to thank all the professors for the interesting lectures they presented which had great benefit for all of us. We would like to express our deepest gratitude to our graduation project supervisor Dr. Ayman Mosa for his patience and guidance along the semester. In addition, we would like to express our sincere appreciations to our Computer Science Department coordinator Dr. Mohamed Abd El-Baky for his guidance, continuous encouragement and support during the course.

At last, we would like to thank all the people who helped, supported and encouraged us to successfully finish the graduation project Phase 1 whether they were in the faculty or in the school of deaf.

Abstract

"Sada" is an online platform, targeting the mute and deaf in the Egyptian community, which aims to empower and support those people in their life through a well-designed user experience in our website and application.

The platform contains a lot of sections, starting now from the educational one which is responsible for the basic sciences including the sign language, Arabic, English, and mathematics using an interactive educational content especially prepared to deal with their academic level and basic education, and consequently, our learners will be able to easily build a strong basic knowledge in addition to a lot of skills.

Because of the great importance of the information technology in the world economy, our learners will have an access to the IT section, to provide them with the basics of computer science. According to the world health organization, 70% of the mute and deaf are unemployed. So, from this point creating the employment section is essential. This section consists of two parts. The first one will help them to learn a variety of skills which are required in the market such as data entry, photographing, video editing, graphic design, and programming, add to that crafts like embroidery, fashion design, and wood crafts. And finally, practical workshops will be the interactive way to apply all these skills.

Moreover, the second part will be concerned with recruitment, job fairs, and events to share success stories and experience.

Team Members Contacts

Name	Rehab Mohamed Hassan
Phone	01151439935
E-mail	robamohamed21@yahoo.com
Role	Web developer

Name	Takwa Abd El-Salam Khaled
Phone	01002383964
E-mail	takwa.abdelslam@gmail.com
Role	Web developer

Name	Mohamed Mahmoud Mohamed
Phone	01021277815
E-mail	mohmed.mahmud20@gmail.com
Role	Back-End developer

Name	Mohamed Abd El-Moniem Fahmy
Phone	01025356175
E-mail	mmoniemfahmy@gmail.com
Role	Android developer

Organization of the Project Documentation

- **Chapter 1 Introduction:**

Contains of an overview about “Sada project”, Problem Definition that include our vision, issue description and methods for solving the problem mentioned. Moreover, it contains objectives we want to reach in our project, which should be implemented. Mentioning our solution to solve the problem described in details in issue description.

- **Chapter 2 Background:**

Discusses background about web & mobile development, its characteristics, technologies & applications we used in implementing our project. And this section is also containing UML diagrams (Like, Use Case Diagram, Context Diagram).

- **Chapter 3 System Architecture:**

Discusses the System Architecture which is a conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. And this section is also containing UML diagrams (Like, Class Diagram, ERD Diagram, Activity Diagram, Sequence Diagram).

- **Chapter 4 Appendices:**

In this part of the appendices, it contains screenshots of the system user interface; include all forms of the website and the android mobile application.

In the second portion, it consists of two main portions, first is the source code sample, which contains the html tags of the website, also contains the back-end development files.

Chapter One

1.1 Overview:

Deafness and hearing loss

- Around 466 million people worldwide have disabling hearing loss, and 34 million of these are children.
- It is estimated that by 2050 over 900 million people will have disabling hearing loss.
- The majority of people with disabling hearing loss live in low- and middle-income countries.

Impact of hearing loss

Functional impact

One of the main impacts of hearing loss is on the individual's ability to communicate with others. Spoken language development is often delayed in children with unaddressed hearing loss.

Unaddressed hearing loss and ear diseases such as otitis media can have a significantly adverse effect on the academic performance of children. They often have increased rates of grade failure and greater need for education assistance. Access to suitable accommodations is important for optimal learning experiences but are not always available.

Social and emotional impact

Exclusion from communication can have a significant impact on everyday life, causing feelings of loneliness, isolation, and frustration, particularly among older people with hearing loss.

Economic impact

WHO estimates that unaddressed hearing loss poses an annual global cost of US\$ 750 billion. This includes health sector costs (excluding the cost of hearing devices), costs of educational support, loss of productivity, and societal costs.

In developing countries, children with hearing loss and deafness rarely receive any schooling. Adults with hearing loss also have a much higher unemployment rate. Among those who are employed, a higher percentage of people with hearing loss are in the lower grades of employment compared with the general workforce.

Improving access to education and vocational rehabilitation services, and raising awareness especially among employers about the needs of people with hearing loss, will decrease unemployment rates for people with hearing loss.

Egypt

Although there are no official statistics for the number of deaf people in Egypt, a 2007 study by the World Health Organization estimated that more than 7.5 million people have disabling hearing loss across all age groups.

1.2 Problem Definition:

1.2.1 Information Gathering:

This phase aims to provide the context for the problem study and typically understanding in depth the problem which the project aims to solve. In addition, clearly answer the question: "what is the problem"? And "why is this problem worth our attention"? At the same time, limiting scope by focusing on some aspects and not others. It also provides an opportunity for us to demonstrate why these aspects are important.

In Egypt as is the case in many countries, people with disabilities are viewed as people who live on charity. Underlying this are cultural assumptions and negative stereotypes that are placed on the deaf. Due to these negative assumptions, families with deaf children don't have enough knowledge to deal with their children and their needs, they also tend to keep them indoors, not allowing them to play outside or interact with others. They are often viewed as less than human, lazy and unable to do simple tasks, simply because they cannot communicate easily with the public. As a result, deaf children lose the opportunity to join school and have a good education. Another problem is the low quality education and shortage in resources including physical and qualified human resources, which affects the academic performance of students, so the graduates of these schools lack in using the simple basics of language and to link it with sign language. Also math and other important subjects, which are the base to build other skills. Consequently, they have a much higher unemployment rate.

User Interviews

- **Amany Mustafa / Cairo / Information system institute graduate**
 - What are your ambitions?
- I hope to find equality from the society.
 - Do the government give a helping hand to you?
- Yes, but slightly. We hope more efforts.
 - How do you develop your skills?
- Actually, I am taking courses in IT to help me to find a better opportunity.
- **Mohamed Sobhi / 29 years old / Video editor**
 - What are the main problems that face deaf in Egypt?
- The education is very bad.
 - What are your qualifications?
- I studied video editing and visual effects and I have a great passion for this field.
- **Nihad Rabee / 22 years old / Unemployed**
 - Do you have any work experience?
- Yes, I have worked in a factory in 6-October city but it was physically hard and inappropriate.
 - What is your hobbies?
- I like Fashion design and I joined a workshop but I couldn't complete it because of the absence of communication with the instructor.

Stakeholder Interviews

- **Dr. Karam El-Agmaway / Fayoum / Sign language instructor**
 - What do you think the most important part that we should take care of for our solution?
 - I think education is the key solution to help deaf people.
 - What is the Obstacles you think will face us?
 - I think Physical and logistical costs will be a challenge for you.
 - Do you have time to be a volunteer with us?
 - Of course, I will help you as much as I can.
- **Rehab Mohamed / Fayoum / Sign language instructor**
 - Why did you apply to be a volunteer with us?
 - I believe that every person in the society should help as much as he can to help other people.
 - What can you do for the project?
 - I can prepare content and put educational plans.
- **Nada Ahmed / Fayoum / Student**
 - Why did you learn sign language?
 - As a teacher that will help me to communicate better and spread knowledge among deaf students who need for help.
 - What can you do for the project?
 - I can be instructor. I have excellent presentation skills.

- **MRS. Sommaya Attia / Fayoum / Deaf school manager**
 - Is there any technology resources in school?
 - Yes, we have a computer lab but it isn't well used also we have tablets but students don't use it.
 - Would it be useful to provide content to maximize utilization of tablets and computer lab?
 - Of course, it would be a great idea and I can help you by providing suitable resources.

1.2.2 Problem statement:

Among the different problems Deaf people face in Egypt. And after limiting scope by focusing on one aspect we found that the key problem is the lack of educational resources which results in shortage in skills and consequently higher rate of unemployment.

Solution: Building an E-learning platform targeting deaf and mute people, providing them a powerful experience to enhance their knowledge in different aspects (Academic, IT skills, Freelancing and experience exchange).

1.2.3 Business Objective:

Vision:

Using technology and software solutions to empower other.

Mission:

Our team is seeking to building software solutions concerned with deaf people including their education, skills and career opportunities to create a powerful community that learn, create and innovate. Spreading the culture of helping other and sharing knowledge.

Users:

Deaf people with different ages.

Competitive advantage:

1. Free
2. Specialization
3. Full experience
4. Learning Paths

Target:

To provide Proto type of content and to be tested in Deaf schools

Users	
B2B	B2C
<ul style="list-style-type: none"> • Deaf schools • Educational Organizations 	<ul style="list-style-type: none"> • End user • Deaf <ul style="list-style-type: none"> ◦ Student ◦ Graduate ◦ Did not join school • Teacher • Families that have deaf children • Interested person to learn sign language • Sign language trainer

1.3 Scope:

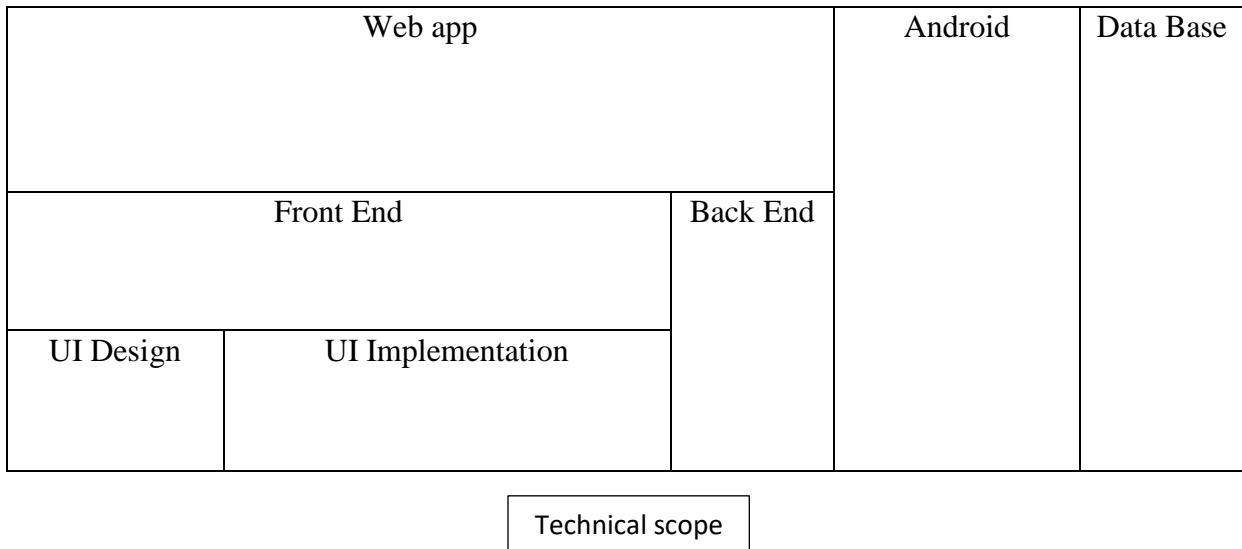
1.3.1 User Needs:

The user is the best source for functional requirements and content requirements. After information gathering process and interviews, we found that the main aspects user needs are as shown below



1.3.2 Technical Perspective:

Building our E-learning platform with two scopes, web site for computers and mobile applications for mobiles and tablets through this integration, we would cover wide area to reach users.



1.3.3 Non-Technical Perspective:

Content which will be the core for our e-learning platform and its requirements.

Interactive MOOC based courses	Media Production
<ul style="list-style-type: none">• every lesson 5 : 15 minutes• units• tests	<ul style="list-style-type: none">• Studio• videographer• video editor• Instructors

Chapter Two

2.1 About Technologies Used:

2.1.1 HTML:

Hypertext Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as `` and `<input/>` directly introduce content into the page. Other tags such as `<p>` surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a scripting language such as JavaScript, which affects the behavior and content of web pages. Inclusion of CSS defines the look and layout of content. The World Wide Web Consortium (W3C), former

maintainer of the HTML and current maintainer of the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.

2.1.2 CSS:

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .CSS file, and reduce complexity and repetition in the structural content. Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device.

The name cascading comes from the specified priority scheme to determine which style rule applies if more than one rule matches a particular element. This cascading priority scheme is predictable. The CSS specifications are maintained by the World Wide Web Consortium (W3C). Internet media type (MIME type) text/css is registered for use with CSS by RFC 2318 (March 1998). The W3C operates a free CSS validation service for CSS documents. In addition to HTML, other markup languages support the use of CSS including XHTML, plain XML, SVG, and XUL.

2.1.3 JavaScript:

JavaScript often abbreviated as JS, is a high-level, interpreted programming language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it, and major web browsers have a dedicated JavaScript engine to execute it.

As a multi-paradigm language, JavaScript supports event-driven, functional, and imperative (including object-oriented and prototype-based) programming styles. It has APIs for working with text, arrays, dates, regular expressions, and the DOM, but the language itself does not include any I/O, such as networking, storage, or graphics facilities. It relies upon the host environment in which it is embedded to provide these features.

Initially only implemented client-side in web browsers, JavaScript engines are now embedded in many other types of host software, including server-side in web servers and databases, and in non-web programs such as word processors and PDF software, and in runtime environments that make JavaScript available for writing mobile and desktop applications, including desktop widgets.

The terms Vanilla JavaScript and Vanilla JS refer to JavaScript not extended by any frameworks or additional libraries. Scripts written in Vanilla JS are plain JavaScript code.

Although there are similarities between JavaScript and Java, including language name, syntax, and respective standard libraries, the two languages are distinct and differ greatly in design. JavaScript was influenced by programming languages such as Self and Scheme. The JSON serialization format, used to store data structures in files or transmit them across networks, is based on JavaScript.

2.1.4 jQuery:

jQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML. jQuery is the most popular JavaScript in use today, with installation on 65% of the top 10 million highest-trafficked sites on the Web. jQuery is free, open-source software licensed under the MIT License.

jQuery's syntax is designed to make it easier to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications. jQuery also provides capabilities for developers to create plug-ins on top of the JavaScript library. This enables developers to create abstractions for low-level interaction and animation, advanced effects and high-level, theme-able widgets. The modular approach to the jQuery library allows the creation of powerful dynamic web pages and Web applications. The set of jQuery core features—DOM element selections, traversal and manipulation—enabled by its selector engine (named "Sizzle" from v1.3), created a new "programming style", fusing algorithms and DOM data structures. This style influenced the architecture of other JavaScript frameworks like YUI v3 and Dojo, later stimulating the creation of the standard Selectors API.

Microsoft and Nokia bundle jQuery on their platforms. Microsoft includes it with Visual Studio for use within Microsoft's ASP.NET AJAX and ASP.NET MVC frameworks while Nokia has integrated it into the Web Run-Time widget

development platform. jQuery has also been used in MediaWiki since version 1.16. jQuery, at its core, is a DOM (Document Object Model) manipulation library. The DOM is a tree-structure representation of all the elements of a Web page and jQuery simplifies the syntax for finding, selecting, and manipulating these DOM elements. For example, jQuery can be used for finding an element in the document with a certain property (e.g. all elements with an h1 tag), changing one or more of its attributes (e.g. color, visibility), or making it respond to an event (e.g. a mouse clicks).

jQuery also provides a paradigm for event handling that goes beyond basic DOM element selection and manipulation. The event assignment and the event callback function definition are done in a single step in a single location in the code. jQuery also aims to incorporate other highly used JavaScript functionalities (e.g. fade ins and fade outs when hiding elements, animations by manipulating CSS properties).

The advantages of using jQuery are:

- Encourages separation of JavaScript and HTML: The jQuery library provides simple syntax for adding event handlers to the DOM using JavaScript, rather than adding HTML event attributes to call JavaScript functions. Thus, it encourages developers to completely separate JavaScript code from HTML markup.
- Brevity and clarity: jQuery promote brevity and clarity with features like chainable functions and shorthand function names.
- Eliminates cross-browser incompatibilities: The JavaScript engines of different browsers differ slightly so JavaScript code that works for one browser may not work for another. Like other JavaScript toolkits, jQuery handles all these cross-browser inconsistencies and provides a consistent interface that works across different browsers.

- Extensible: New events, elements, and methods can be easily added and then reused as a plugin.

2.1.5 Android:

Android is a mobile operating system (OS) currently developed by Google, based on the Linux kernel and designed primarily for touchscreen mobile devices such as smartphones and tablets. It has been the best-selling OS on tablets and on smartphones since 2013, and has the largest installed base.

Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. The operating system's current design language is Google's Material Design. Android's primary app store is Google Play, with over one million Android applications ("apps") published and 50 billion downloads as of July 2013. In addition to touchscreen devices, Google has further developed Android for television, cars, and wristwatches, each with a specialized yet similar interface. Variants and forked versions of Android are also used on notebooks, game consoles, digital cameras, and other electronics.

Android was initially authored by Android, Inc., which Google bought in 2005, and unveiled it in 2007, along with the founding of the Open Handset Alliance – a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. A 2013 survey of mobile application developers found that 71% of developers create applications for Android from April to May, and a 2015 survey found that 40% of full time professional developers priority see Android as their target platform, compared to Apple's iOS on 37% with

both platforms far above others. In September 2015, Android had 1.4 billion monthly active users.

Android's source code is released by Google under open source licenses, although most Android devices ultimately ship with both open source and proprietary software, including required proprietary components for Google's services. It is popular with technology companies that require an optimized, low-cost and customizable operating system for high-tech devices. Its open nature has encouraged a large community of developers and enthusiasts to use the open source code as a foundation for community-driven projects, which add new features for advanced users or bring Android to devices originally shipped with other operating systems. However, Android has no central update protocol and most devices fail to receive security updates: 2015 research concluded that almost 90% of Android phones in use had known but unpatched security due to lack of updates and support. The success of Android has made it a target for patent litigation as part of the so-called "smartphone wars" between technology companies.

2.1.6 Java Platform SE:

Java Platform, Standard Edition or Java SE is a widely used platform for development and deployment of portable code for desktop and server environments. Java SE uses the object-oriented Java programming language. It is part of the Java software-platform family. Java SE defines a wide range of general-purpose APIs – such as Java APIs for the Java Class Library – and also includes the Java Language Specification and the Java Virtual Machine Specification. One of the most well-known [citation needed] implementations of Java SE is Oracle Corporation's Java Development Kit (JDK) Nomenclature, standards and specifications.

Java SE was known as Java 2 Platform, Standard Edition or J2SE from version 1.2 until version 1.5. The "SE" is used to distinguish the base platform from the Enterprise Edition (Java EE) and Micro Edition (Java ME) platforms. The "2" was originally intended to emphasize the major changes introduced in version 1.2, but was removed in version 1.6. The naming convention has been changed several times over the Java version history. Starting with J2SE 1.4 (Merlin), Java SE has been developed under the Java Community Process, which produces descriptions of proposed and final specifications for the Java platform called Java Specification Requests (JSR). JSR 59 was the umbrella specification for J2SE 1.4 and JSR 176 specified J2SE 5.0 (Tiger). Java SE 6 (Mustang) was released under JSR 270.

Java Platform, Enterprise Edition (Java EE) is a related specification that includes all the classes in Java SE, plus a number that are more useful to programs that run on servers as opposed to workstations.

Java Platform, Micro Edition (Java ME) is a related specification intended to provide a certified collection of Java APIs for the development of software for small, resource-constrained devices such as cell phones, PDAs and set-top boxes.

The Java Runtime Environment (JRE) and Java Development Kit (JDK) are the actual files downloaded and installed on a computer to run or develop Java programs, respectively.

2.1.7 Spring Boot:

Spring Boot is an open source Java-based framework used to create a micro Service. It is developed by Pivotal Team and is used to build stand-alone and production

ready spring applications. This chapter will give you an introduction to Spring Boot and familiarizes you with its basic concepts.

The Spring Framework is an application framework and inversion of control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE (Enterprise Edition) platform. Although the framework does not impose any specific programming model, it has become popular in the Java community as an addition to, or even replacement for the Enterprise JavaBeans (EJB) model. The Spring Framework is open source.

Main Goal of Spring Boot: The main goal of Spring Boot Framework is to reduce Development, Unit Test and Integration Test time and to ease the development of Production ready web applications very easily compared to existing Spring Framework, which really takes more time.

Spring Boot takes away all these pains and lets you write the code that matters, i.e. application code. All of the Spring Boot features that I mentioned previously, e.g. Auto-configuration, Starter POMs or Starter dependencies, and Spring Boot CLI, aims to simplify Java development with Spring.

2.1.8 MySQL:

MySQL is an open-source relational database management system (RDBMS). In July 2013, it was the world's second most[a] widely used RDBMS, and the most widely used open-source client–server model RDBMS. Its name is a combination of "My", the name of co-founder Michael Widenius' daughter, and "SQL", the abbreviation for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well

as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle. For proprietary use, several paid editions are available, and offer additional functionality.

MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open-source web application software stack (and other "AMP" stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python". Free-software open source projects that require a full-featured database management system often use MySQL. Applications that use the MySQL database include: TYPO3, MODx, Joomla, WordPress, phpBB, MyBB, Drupal and other software. MySQL is also used in many high-profile, large scale websites, including Google (though not for searches), Facebook, Twitter and YouTube.

On all platforms except Windows, MySQL ships with no GUI tools to administer MySQL databases or manage data contained within the databases. Users may use the included command line tools, or install MySQL Workbench via a separate download. Many third-party GUI tools are also available.

MySQL is written in C and C++. Its SQL parser is written in yacc, but it uses a home-brewed lexical analyzer. MySQL works on many system platforms, including AIX, BSDi, FreeBSD, HP-UX, eComStation, i5/OS, IRIX, Linux, OS X, Microsoft Windows, NetBSD, Novell NetWare, OpenBSD, Open Solaris, OS/2 Warp, QNX, Oracle Solaris, Symbian, SunOS, SCO Open Server, SCO UnixWare, Sanos and Tru64. A port of MySQL to OpenVMS also exists.

The MySQL server software itself and the client libraries use dual-licensing distribution. They are offered under GPL version 2, beginning from 28 June 2000.

(which in 2009 has been extended with a FLOSS License Exception) or to use a proprietary license.

Support can be obtained from the official manual. Free support additionally is available in different IRC channels and forums. Oracle offers paid support via its MySQL Enterprise products. They differ in the scope of services and in price. Additionally, a number of third-party organizations exist to provide support and services, including MariaDB and Percona.

MySQL has received positive reviews, and reviewers noticed it "performs extremely well in the average case". And that the "developer interfaces are there, and the documentation (not to mention feedback in the real world via Web sites and the like) is very, very good". It has also been tested to be a "fast, stable and true multi-user, multi-threaded SQL database server".

2.1.9 Heroku Cloud:

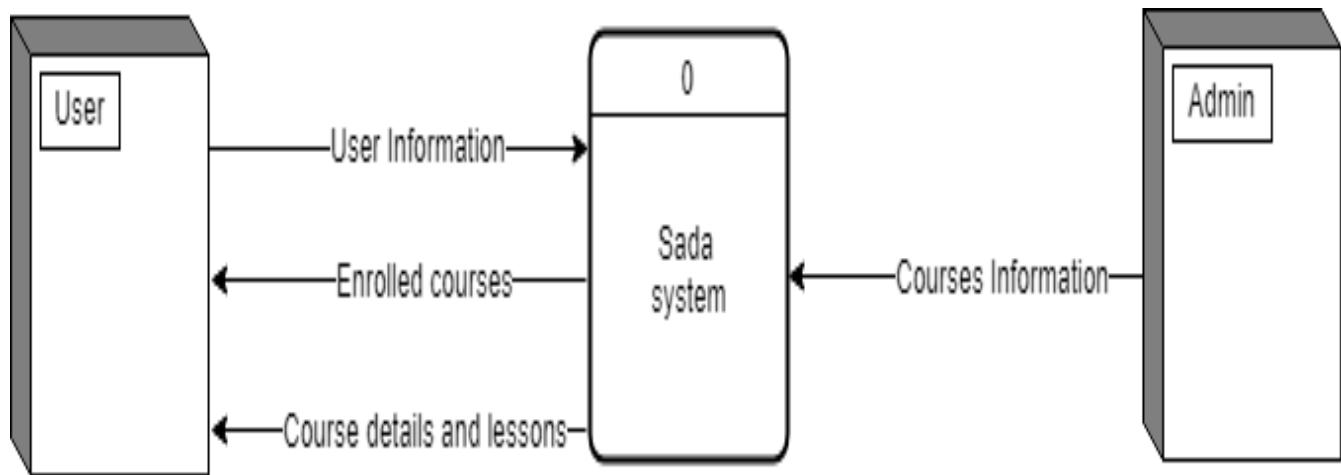
Heroku is a cloud platform as a service (PaaS) supporting several programming languages. Heroku, one of the first cloud platforms, has been in development since June 2007, when it supported only the Ruby programming language, but now supports Java, Node.js, Scala, Clojure, Python, PHP, and Go. For this reason, Heroku is said to be a polyglot platform as it has features for a developer to build, run and scale applications in a similar manner across most languages. Heroku was acquired by Salesforce.com in 2010 for \$212 million.

Developers use Heroku to deploy, manage, and scale modern apps. Our platform is elegant, flexible, and easy to use, offering developers the simplest path to getting their apps to market

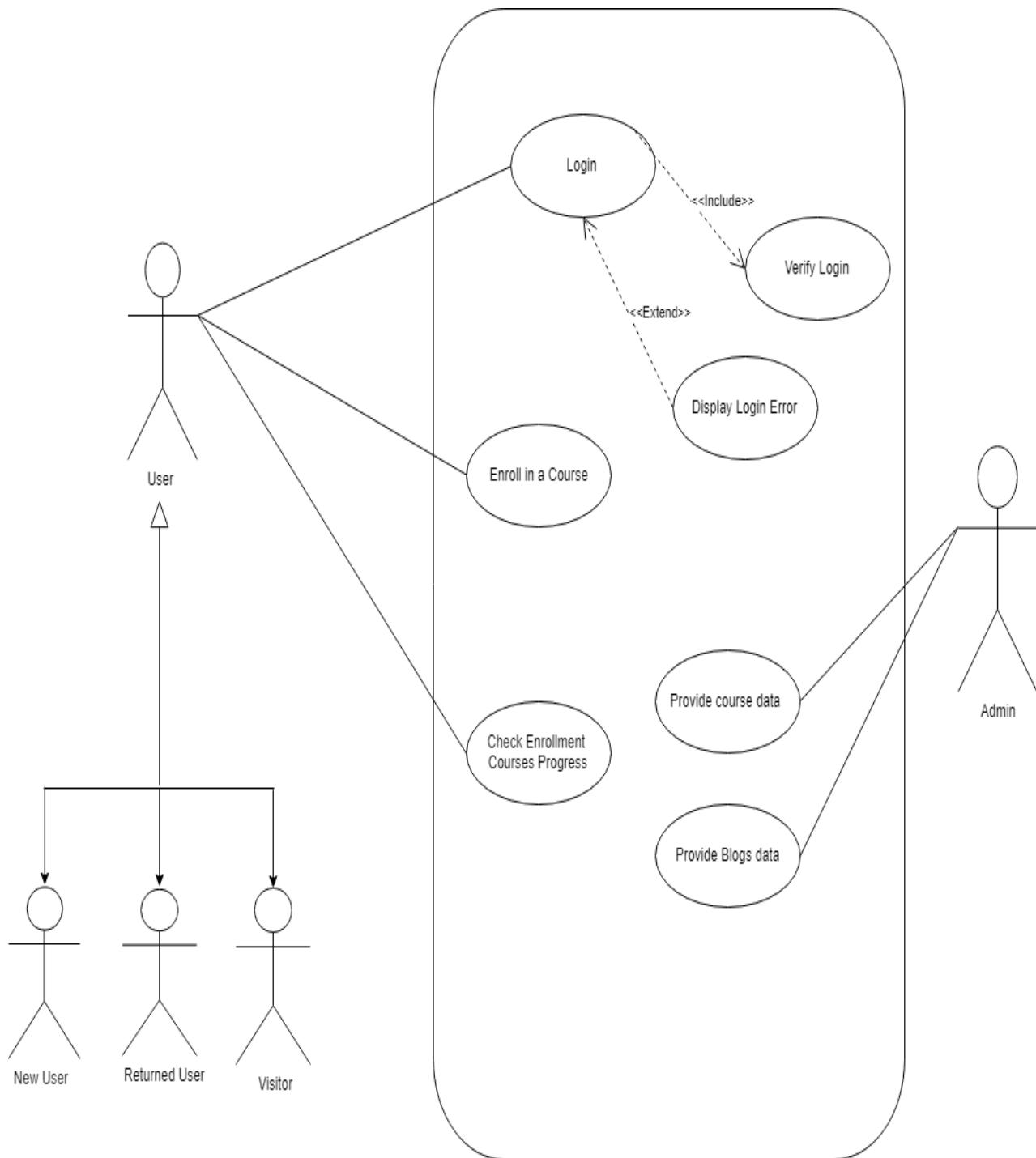
Heroku lets you deploy, run and manage applications written in Ruby, Node.js, Java, Python, Clojure, Scala, Go and PHP. The source code for your application, together with the dependency file, should provide enough information for the Heroku platform to build your application, to produce something that can be executed.

2.2 UML Diagrams:

2.2.1 Context Diagram:



2.2.2 Use Case Diagram:



2.2.3 Use Case Diagram Analysis:

Use Case Name	Login.
Actor	User.
Description	This use case describes the Sign up or login of user using Mobile application or Website.
Typical course of events	Step 1: The User sign in from mobile app or website (phone-Password). Step 2: The System validates user entered data and stores it in the database.

Use Case Name	Enroll in a Course.
Actor	User.
Description	This use case describes the user enrollment in a course.
Typical course of events	Step 1: The User provides his information and selected course info. Step 2: The System validates user entered data and stores it in the database.

Use Case Name	Check Enrolled Courses Progress.
Actor	User.
Description	This use case describes the checking of user for his progress in all enrolled courses.
Typical course of events	Step 1: The User provides his information. Step 2: The System validates user entered data and return with user enrolled courses with the progress.

Use Case Name	Provides Course Data.
Actor	Admin.
Description	This case describes the adding of courses lessons and exams.
Typical course of events	<p>Step 1: The Admin provides all courses data.</p> <p>Step 2: The System validates admin entered data and stores it in the database.</p>

Use Case Name	Provides Blogs Data.
Actor	Admin.
Description	This case describes the adding of Blogs.
Typical course of events	<p>Step 1: The Admin provides all blogs data.</p> <p>Step 2: The System validates admin entered data and stores it in the database.</p>

Chapter Three

3.1 System Architecture:



User



Presentation Layer

User Function Interface
Web and mobile app

Business Layer

Customer Free

Service Layer

High and fast service

Friendly UI

Data Access Layer

Data Access Layer

Data Layer

Personal Data

Course Data

Blog Data

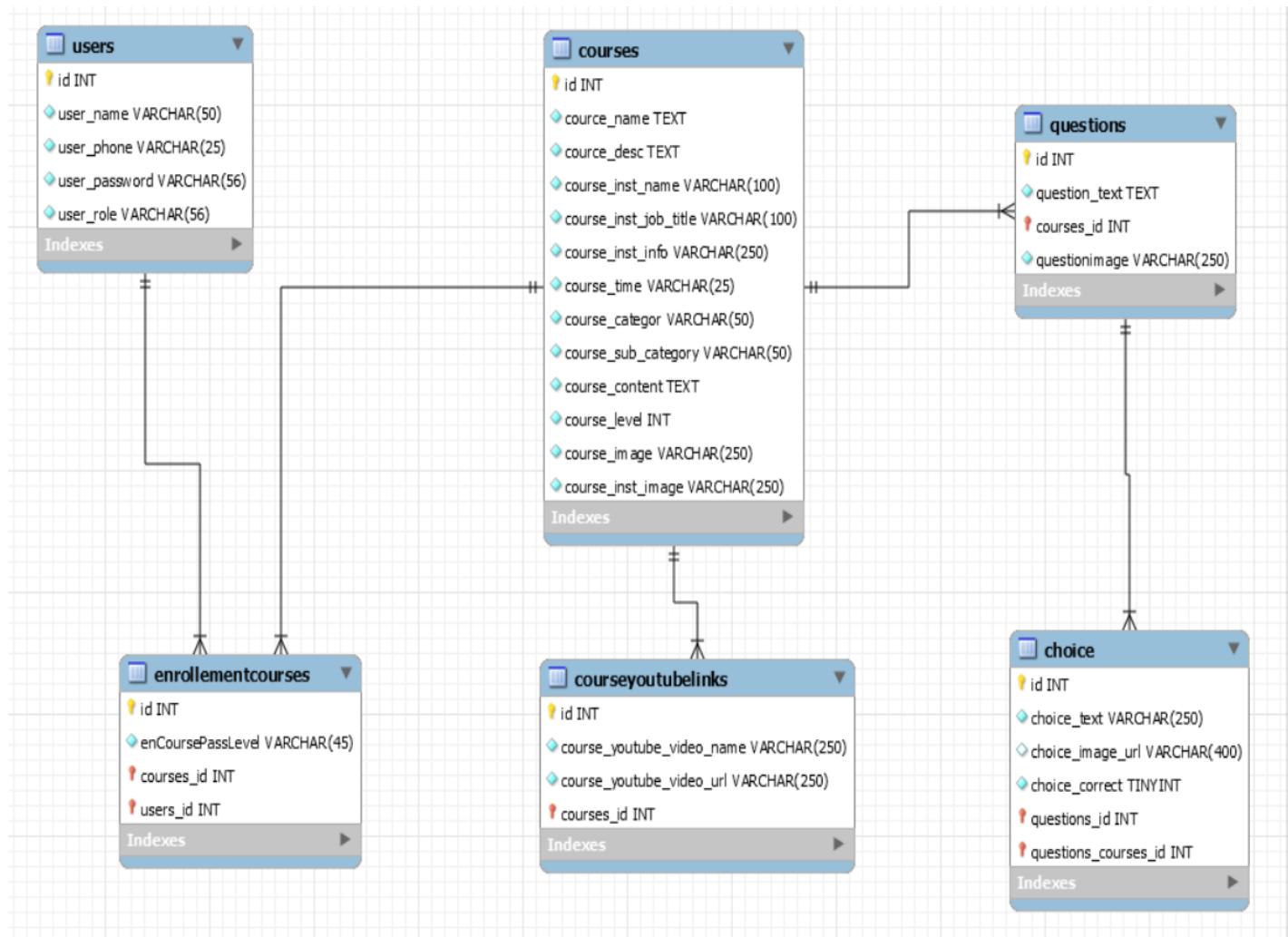
3.2 System Architecture Description:

Our system consists of 5 layers:

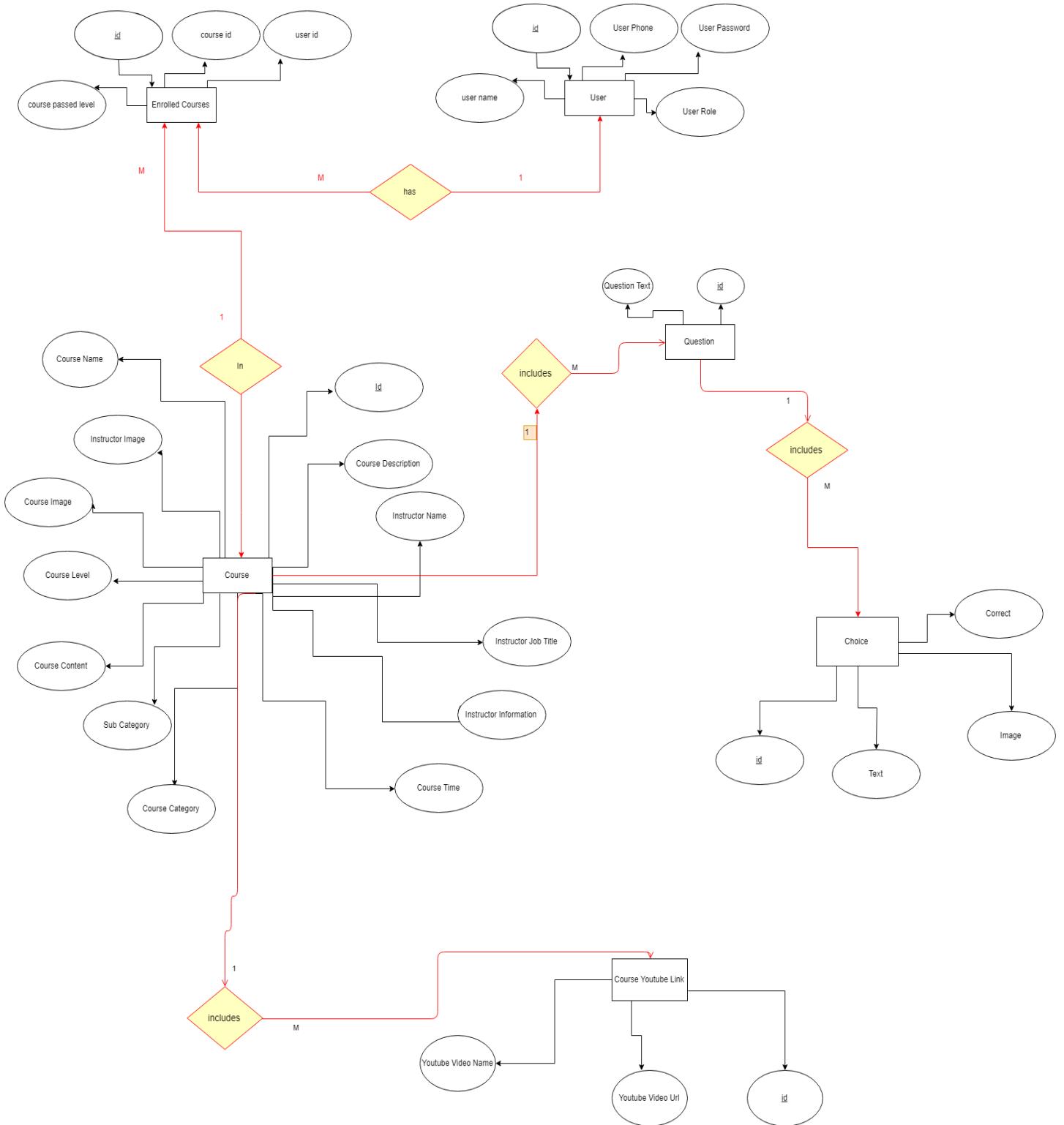
- Data layer
- Data access layer
- Service layer
- Business layer
- Presentation layer

3.3 UML Diagram:

3.3.1 Class Diagram:



3.3.2 ERD Diagram:



3.3.3 ERD Description:

Our database consists of 7 main entities (user, course, course YouTube links, question, choice, enrolled courses and blog).

- **User:**

Contains the basic data of any user who wants to enroll in a course

- **Course:**

Contains the data of all existing courses.

- **Question:**

Contains the data of the questions that belongs to each course.

- **YouTube Links:**

Contains the data of the videos belongs to each course.

- **Choice:**

Contains the data of the choices that belongs to every question in the course.

- **Enrolled Courses:**

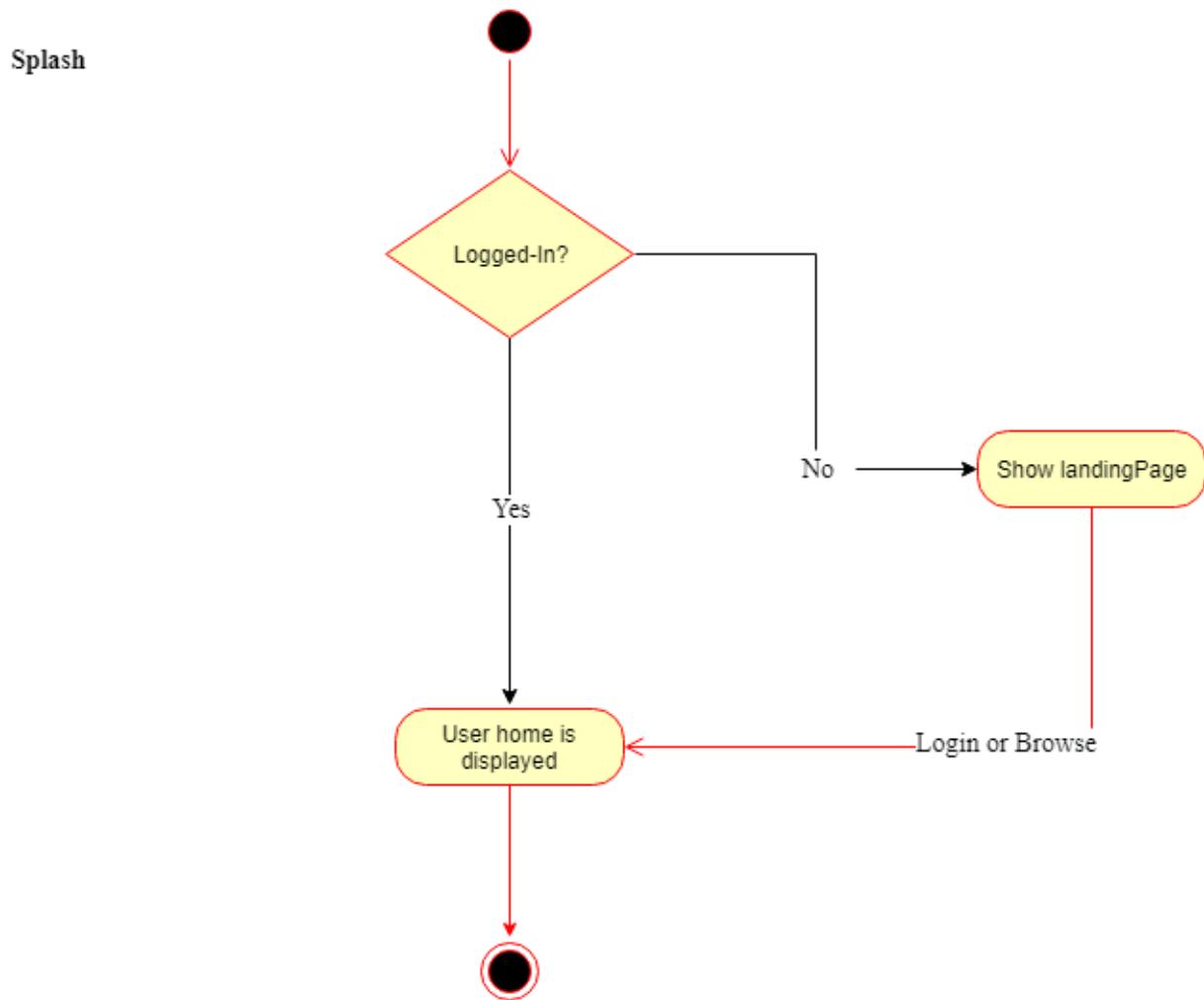
Contains the data of the enrolled courses of each user.

- **Blogs:**

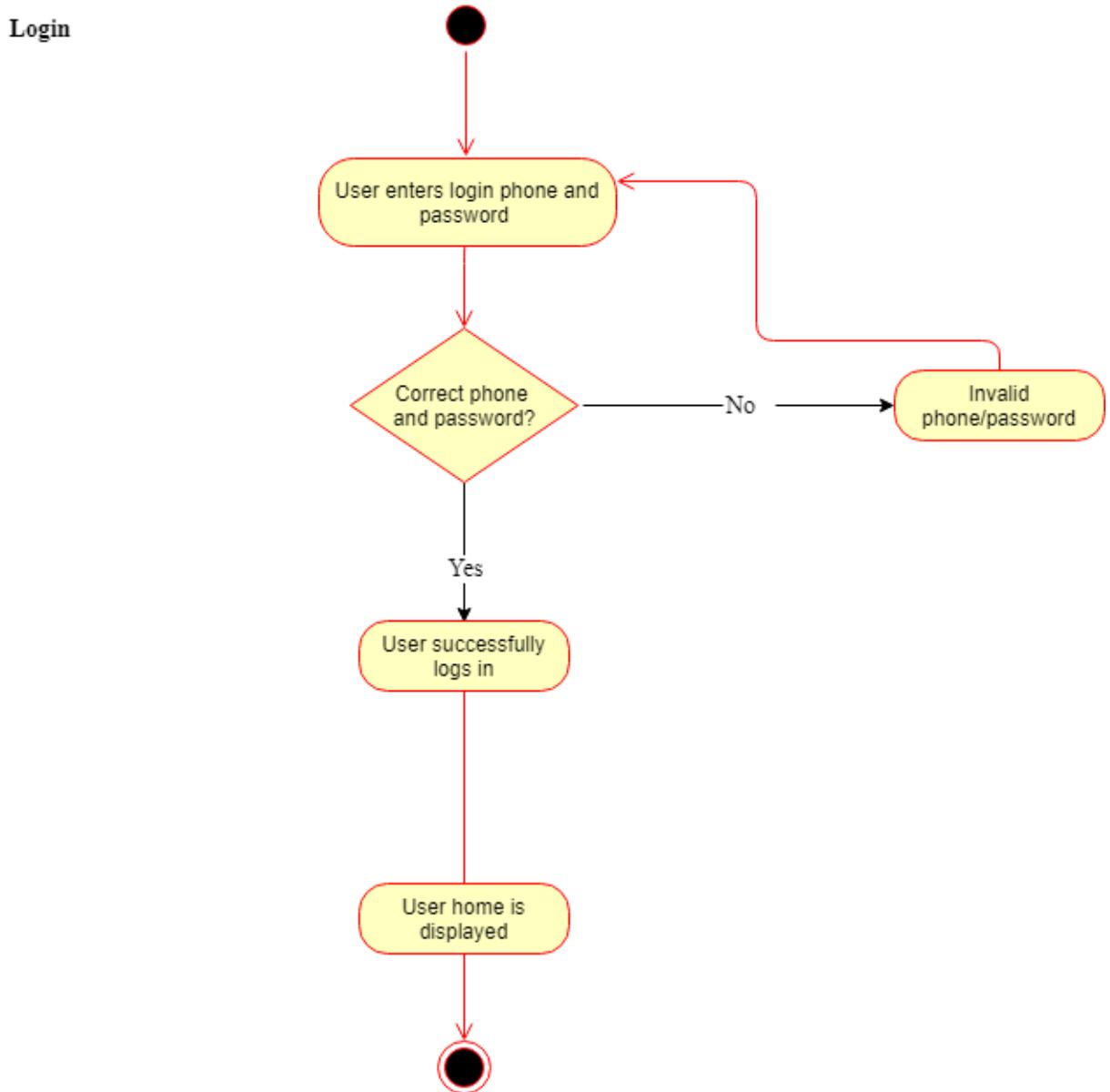
Contains the data of articles that are useful for the deaf people.

3.3.4 Activity Diagram:

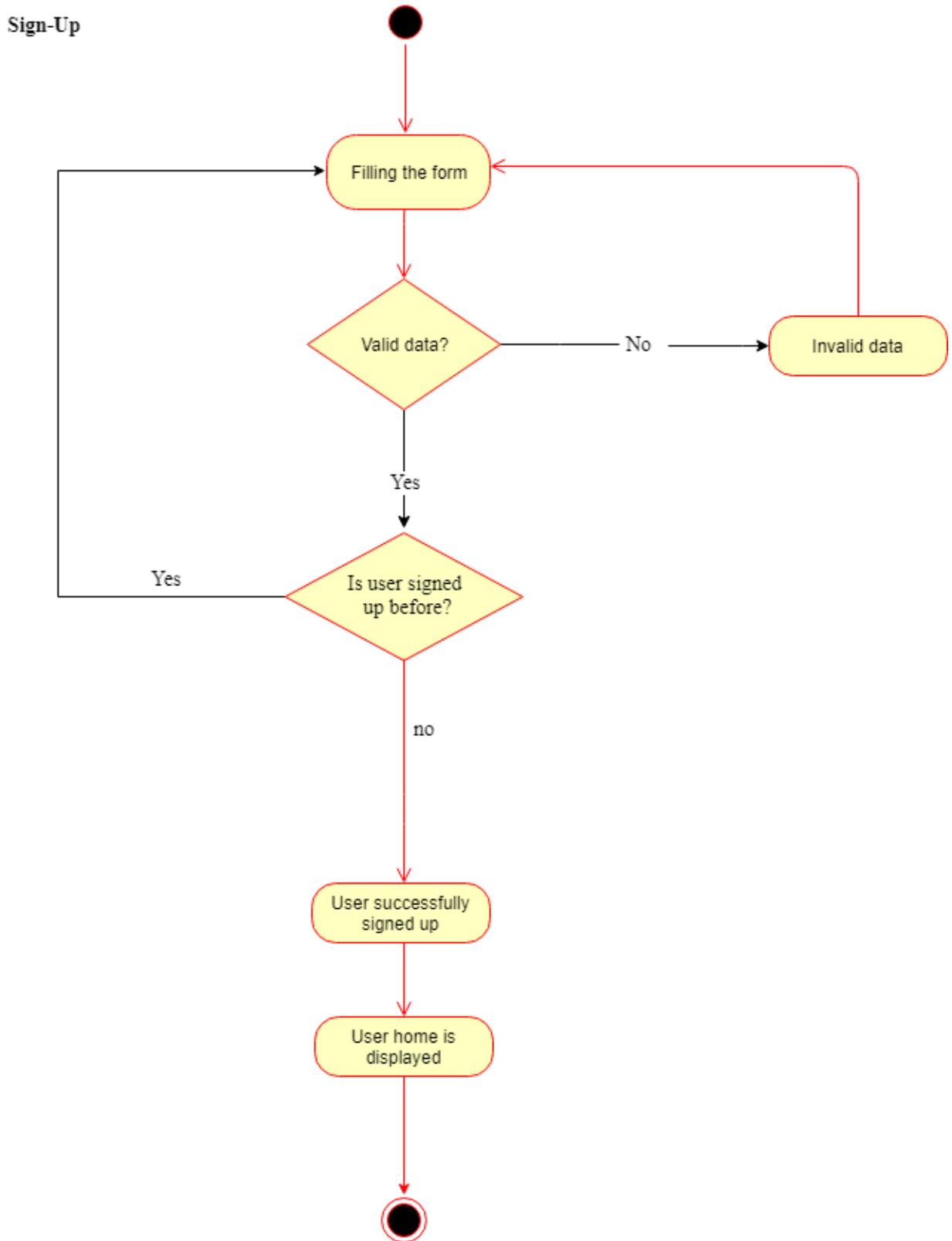
3.3.4.1 Splash Activity:



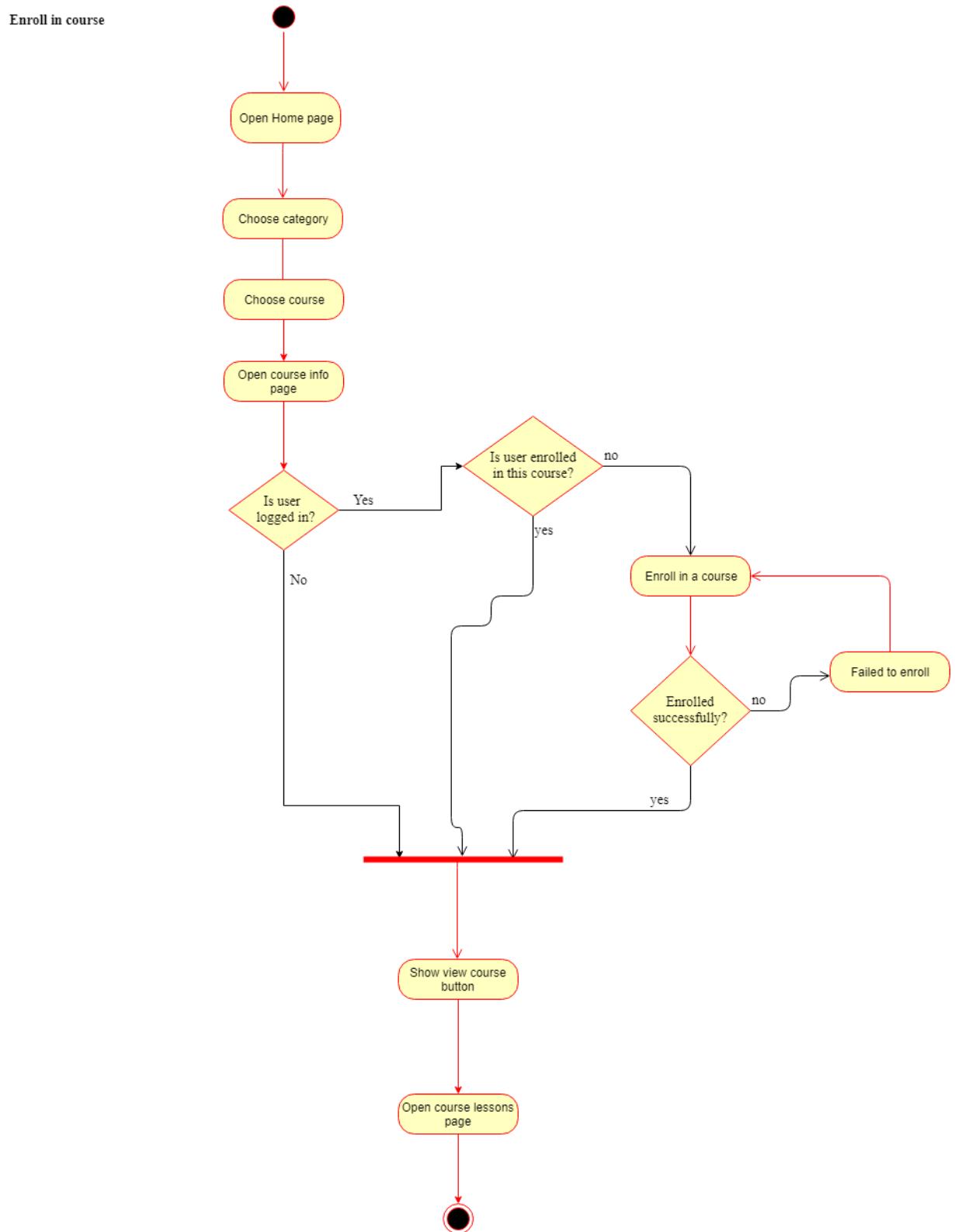
3.3.4.2 Login Activity:



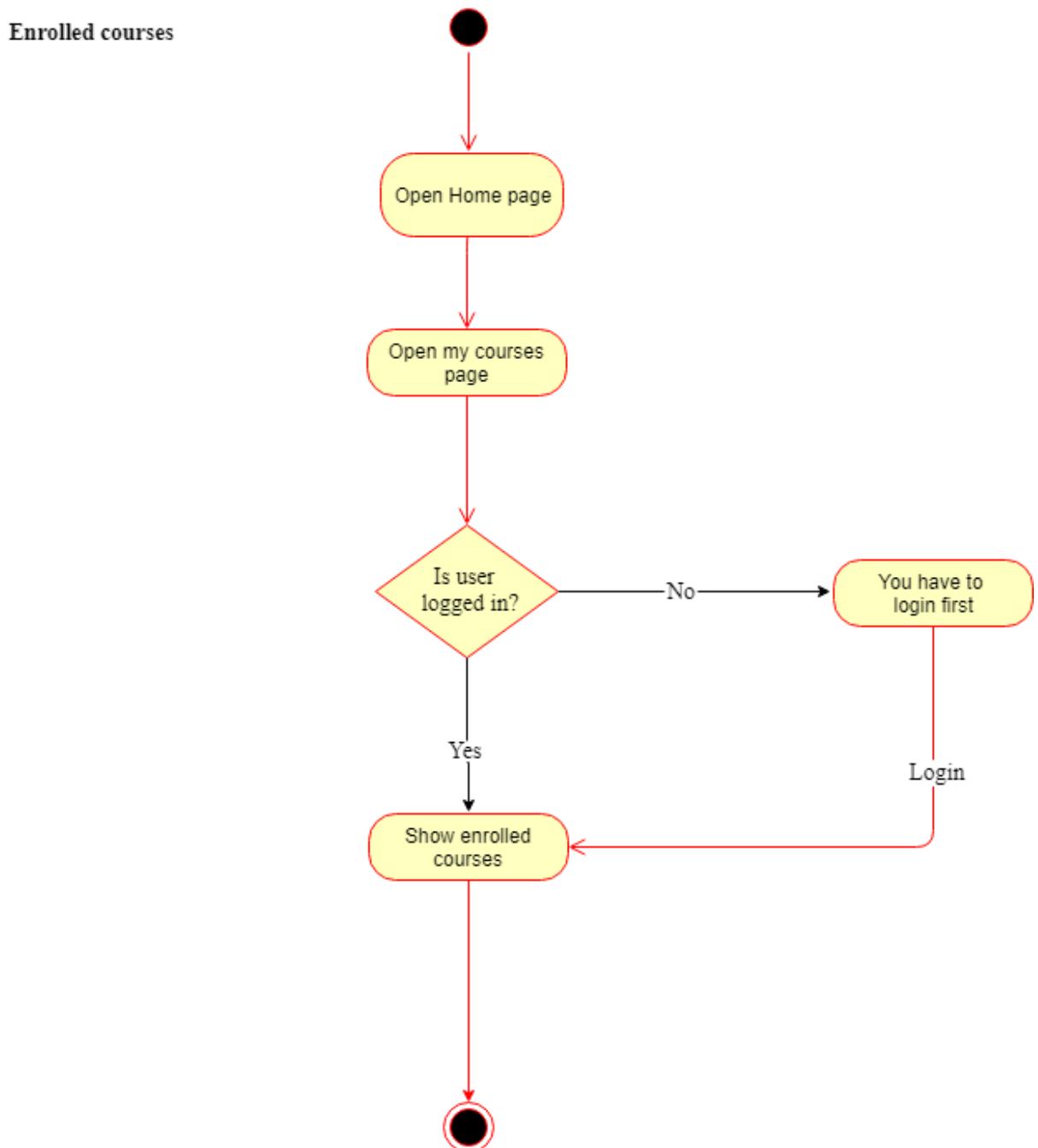
3.3.4.3 Signup Activity:



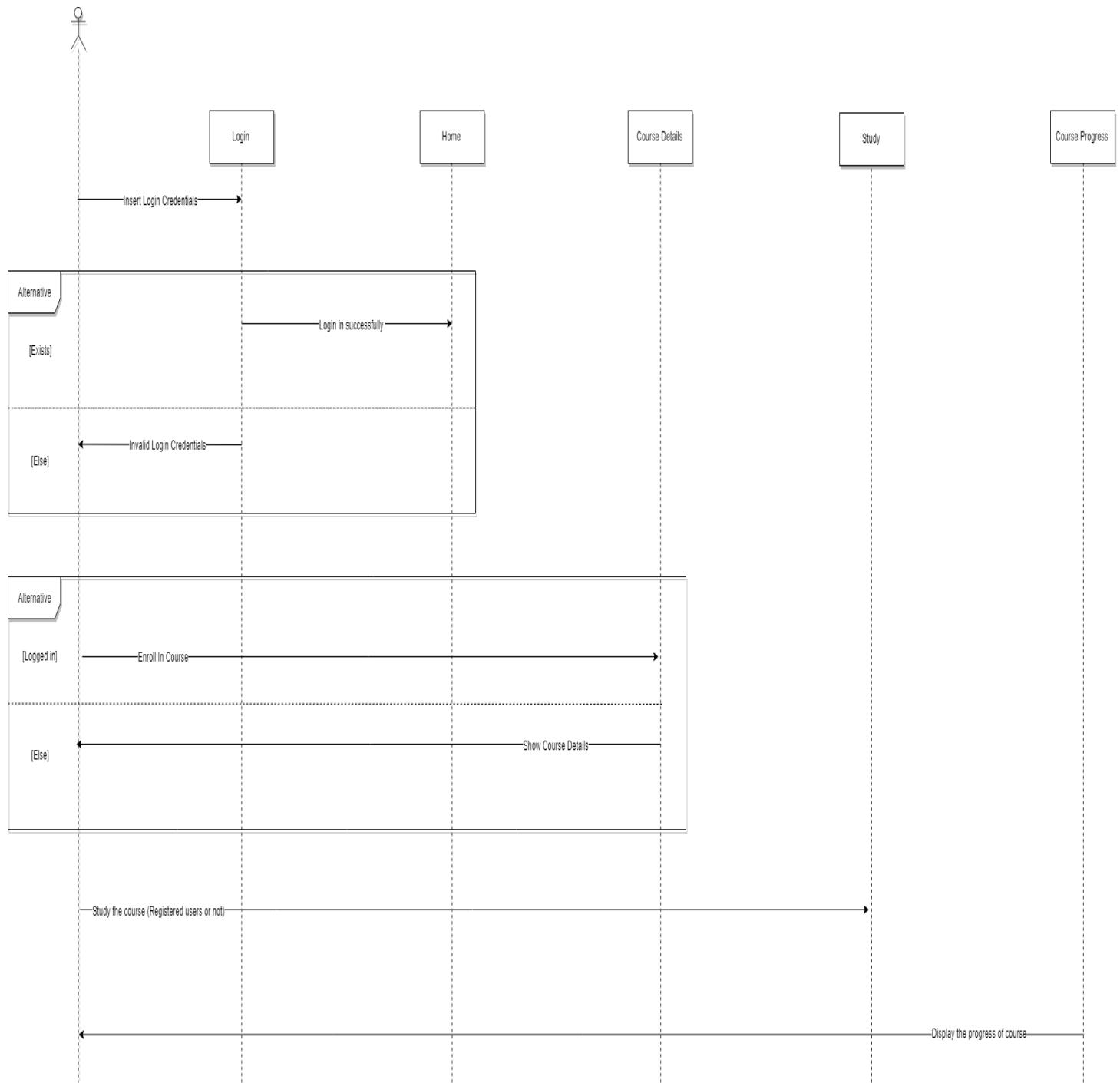
3.3.4.4 Enroll in a course Activity:



3.3.4.5 Enrolled Courses Activity:



3.3.5 Sequence Diagram:



Chapter Four

4.1 Screenshots:

4.1.1 Mobile App:



1-Splash Screen



2-Landing Screen



تعلم ما تريد

— محتوى مقدم —

بلغة الإشارة

رقم الهاتف

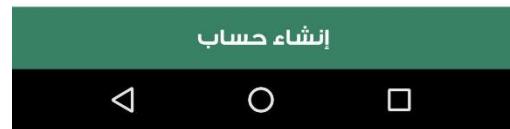
كلمة السر

دخول

لا تمتلك حساب؟ [إنشاء](#)



3-Login Screen



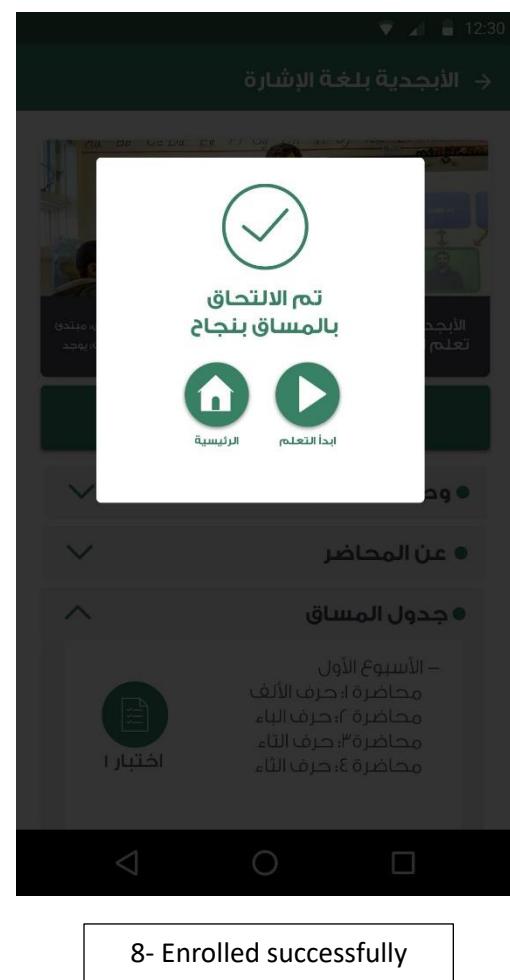
4-SignUp Screen

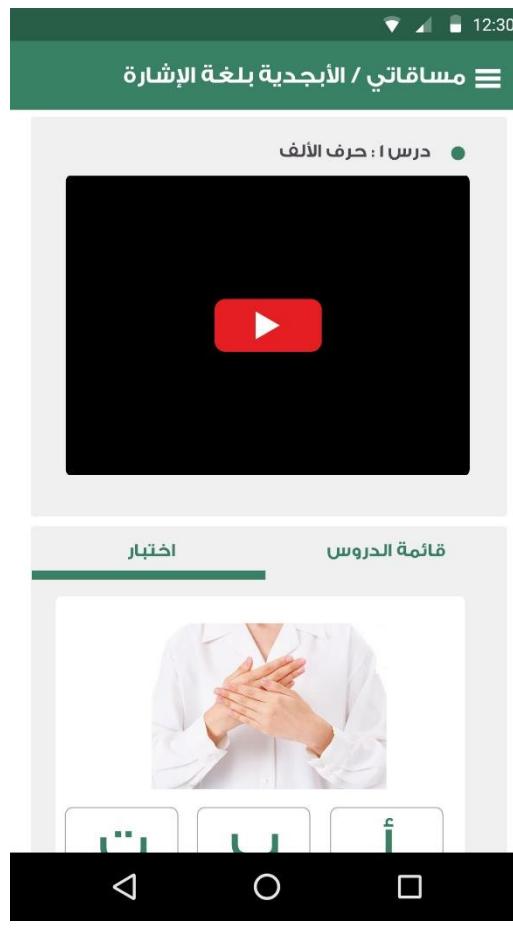


5-SignUp Successfully Screen



6-Home Screen





4.1.2 Website:



توفر منصة صدى الإلكترونيّة محتوى تعليمي بلغة الإشارة بهدف دعم وتمكين ذوي الإعاقة السمعية في مختلف جوانب حياتهم. لا يقتصر المحتوى على فئة بعينها بل هو موجه للمهتمين بتعلم لغة الإشارة وللمدرسين وللأهلالي من أجل خلق مجتمع متفاعل وداعم للجميع



1-Home Screen



المدونة



٦ خطوات لتعليم طفلك لغة الإشارة

يعتبر التعليم المنزلي الان هو أحدث نوادر التعليم ويقع على المنزل مسؤولية كبيرة في تعليم أطفالهم ومح تومز المصادر العلمية يكتبه وذلك عبر الانترنت اذا كان ابنك من ذوي الاعاقة السمعية فالمسؤولية تتضاعف

[عرض التدوينة](#)

تعلم في أي مكان

حمل تطبيق صدى
وتعلم في أي وقت



عن الفريق

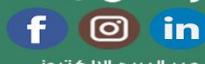
الصفحة الرئيسية

نطوي معنا

عن المشروع

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Sada_GDB2019@gmail.com
 454799+ 1121488 200

2 -Home Screen part 2



إنشاء حساب جديد

الاسم

رقم الهاتف

كلمة السر

تأكيد كلمة السر

ولي أمر

معلم

طالب

سجل



3-SignUp Screen



تسجيل الدخول

رقم الهاتف 

كلمة المرور 

هل نسيت كلمة السر؟ [استرجاع](#)

تسجيل الدخول

هل أنت زائر جديد لمنصة صدى؟

إنشاء حساب



4-Login Screen

التعليم المدرسي

يهدف مسار التعليم المدرسي إلى إكساب المتعلمين بناءً معرفياً قوياً متضمناً لغة الإشارة القديمة والجديدة والحرروف العربية والمواقف اليومية جميع مساقات المسار موجهة إلى المستوى المبتدئ وأيضاً إلى المهتمين بتعلم لغة الإشارة بشكل عام.

المساقات

**الأبجدية بلغة الإشارة
تعلم الحروف العربية**



أ/ محمد حسن حمد مدرب لغة إشارة
المستوى: مبتدئ
التصنيف: لغة عربية
الزمن: 3 ساعات
امتحانات: يوجد

**أساسيات الحاسيب الآلي
بلغة الإشارة**



٢٥ / محمد عبدالمنعم هاكر دولي
المستوى: مبتدئ
التصنيف: تكنولوجيا
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المستوى: مبتدئ
التصنيف: لغة عربية
الزمن: 3 ساعات
امتحانات: يوجد

• وصف الممساق

يتمثل الممساق أول درجة في سلسلة إتقان والتمكن في لغة الإشارة، حيث يتضمن الحروف العربية وكذلك المدخلات الإشارية للعديد من الأشياء في البيئة المحيطة



• عن المحاضر



أ/ محمد حسن هو مدرب لغة إشارة معتمد لدى العديد من الهيئات والمصالح الحكومية. تخرج من كلية الألسن وكان شفاعة العمل التطوعي

- خريج كلية الألسن ٢٠١٥
- متقطوع بجمعية رسالة
- منسق مؤسسة معا
- حاصل على شهادة التدريب الدولية

الأبجدية بلغة الإشارة تعلم الحروف العربية



[التحق](#)

- التصنيف: لغة عربية
- المستوى: مبتدئ
- الزمن: ساعة
- امتحانات: يوجد

• جدول المنساق



- الأسبوع الأول
 - محاضرة ١: حرف الألف
 - محاضرة ٢: حرف الباء
 - محاضرة ٣: حرف اللاء
 - محاضرة ٤: حرف الناء



- الأسبوع الثاني
 - محاضرة ١: حرف الألف
 - محاضرة ٢: حرف الباء
 - محاضرة ٣: حرف اللاء
 - محاضرة ٤: حرف الناء

● محاضرةٌ : حرف الألف



التالي

السابق

– الأسبوع الأول
محاضرة١: حرف الألف
محاضرة٢: حرف الباء
محاضرة٣: حرف الناء
محاضرة٤: حرف اللاء

اختبار ١

– الأسبوع الثاني
محاضرة١: حرف الألف
محاضرة٢: حرف الباء
محاضرة٣: حرف الناء
محاضرة٤: حرف اللاء

اختبار ٢

عن الفريق

الصفحة الرئيسية

تطوع معنا

عن المشروع

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تواصل معنا



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7-Course Lessons Screen

● اختبار ١



ت

ب

ع

اختيار

– الأسبوع الأول
محاضرة ١: حرف الألف
محاضرة ٢: حرف الباء
محاضرة ٣: حرف الناء
محاضرة ٤: حرف اللاء

اختبار ١

– الأسبوع الثاني
محاضرة ٥: حرف الألف
محاضرة ٦: حرف الباء
محاضرة ٧: حرف الناء
محاضرة ٨: حرف اللاء

اختبار ٢

عن الفريق

الصفحة الرئيسية

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عن المشروع

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تواصل معنا

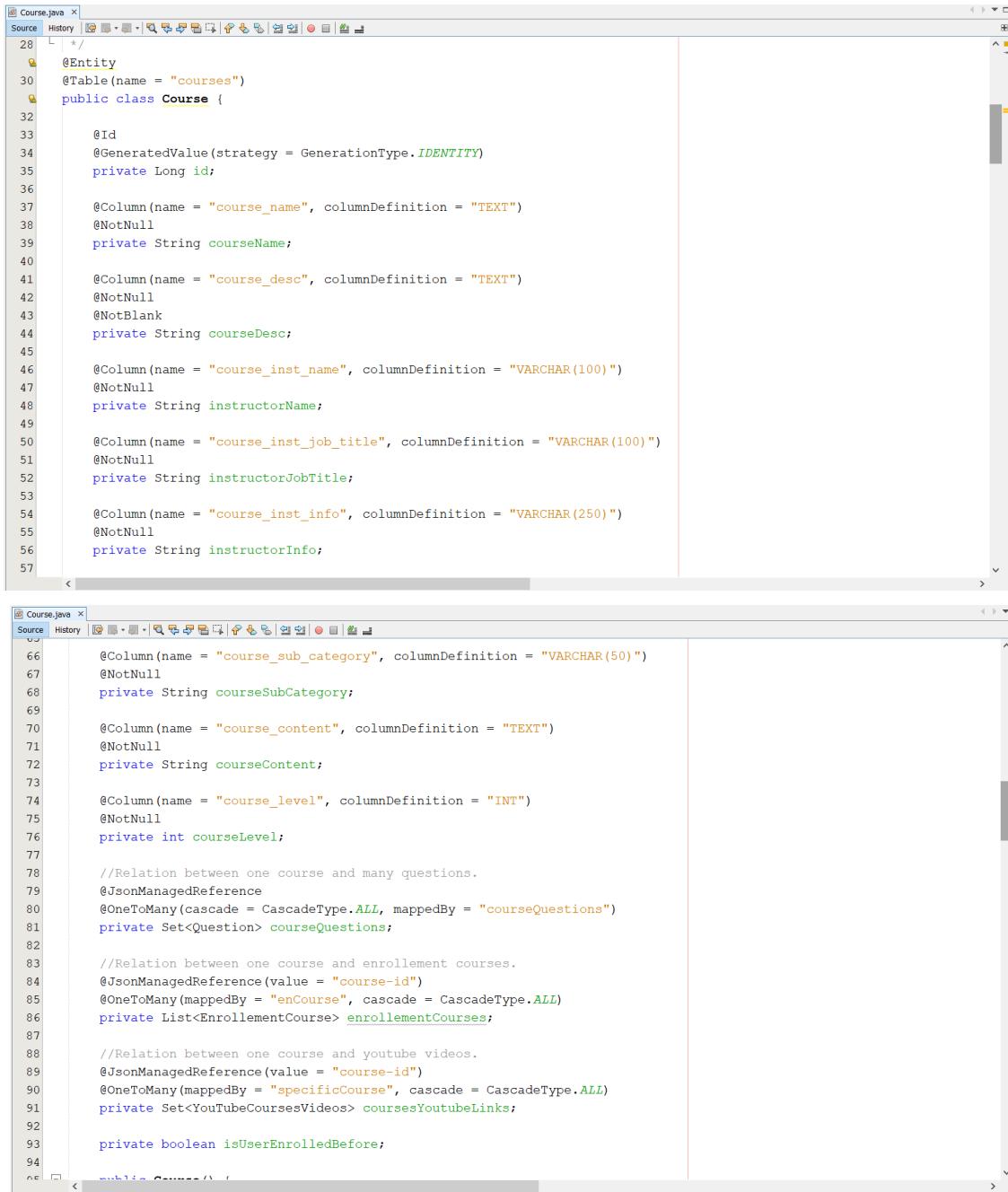


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8-Course Questions Screen

4.2 Code:

4.2.1 Back-End Code Screenshots:



The image displays two side-by-side screenshots of a Java code editor, likely Eclipse or IntelliJ IDEA, showing the `Course.java` entity class. The code is annotated with JPA annotations such as `@Entity`, `@Table`, `@Id`, `@GeneratedValue`, `@Column`, `@JsonManagedReference`, and `@OneToMany`. The code defines various fields like `courseName`, `courseDesc`, `instructorName`, `instructorJobTitle`, `instructorInfo`, `courseSubCategory`, `courseContent`, `courseLevel`, `courseQuestions`, `enrollementCourses`, and `coursesYoutubeLinks`.

```
Course.java
Source History
28  /*
29  * 
30  * @Entity
31  * @Table(name = "courses")
32  * public class Course {
33  *
34  *     @Id
35  *     @GeneratedValue(strategy = GenerationType.IDENTITY)
36  *     private Long id;
37  *
38  *     @Column(name = "course_name", columnDefinition = "TEXT")
39  *     @NotNull
40  *     private String courseName;
41  *
42  *     @Column(name = "course_desc", columnDefinition = "TEXT")
43  *     @NotNull
44  *     @NotBlank
45  *     private String courseDesc;
46  *
47  *     @Column(name = "course_inst_name", columnDefinition = "VARCHAR(100)")
48  *     @NotNull
49  *     private String instructorName;
50  *
51  *     @Column(name = "course_inst_job_title", columnDefinition = "VARCHAR(100)")
52  *     @NotNull
53  *     private String instructorJobTitle;
54  *
55  *     @Column(name = "course_inst_info", columnDefinition = "VARCHAR(250)")
56  *     @NotNull
57  *     private String instructorInfo;
58  *
59  *     @Column(name = "course_sub_category", columnDefinition = "VARCHAR(50)")
60  *     @NotNull
61  *     private String courseSubCategory;
62  *
63  *     @Column(name = "course_content", columnDefinition = "TEXT")
64  *     @NotNull
65  *     private String courseContent;
66  *
67  *     @Column(name = "course_level", columnDefinition = "INT")
68  *     @NotNull
69  *     private int courseLevel;
70  *
71  *     //Relation between one course and many questions.
72  *     @JsonManagedReference
73  *     @OneToMany(cascade = CascadeType.ALL, mappedBy = "courseQuestions")
74  *     private Set<Question> courseQuestions;
75  *
76  *     //Relation between one course and enrollement courses.
77  *     @JsonManagedReference(value = "course-id")
78  *     @OneToMany(mappedBy = "enCourse", cascade = CascadeType.ALL)
79  *     private List<EnrollementCourse> enrollementCourses;
80  *
81  *     //Relation between one course and youtube videos.
82  *     @JsonManagedReference(value = "course-id")
83  *     @OneToMany(mappedBy = "specificCourse", cascade = CascadeType.ALL)
84  *     private Set<YouTubeCoursesVideos> coursesYoutubeLinks;
85  *
86  *     private boolean isUserEnrolledBefore;
87  *
88  * }
```

1-Course Entity DB Snapshot

2-Course Controller Snapshots

```

1  /*
2  * To change this license header, choose License Headers in Project Properties.
3  * To change this template file, choose Tools | Templates
4  * and open the template in the editor.
5  */
6 package sadaedu.org.sada.ecourses;
7
8 import java.util.List;
9 import org.springframework.data.jpa.repository.JpaRepository;
10 import org.springframework.data.jpa.repository.Query;
11 import org.springframework.data.repository.query.Param;
12
13 /**
14 *
15 * @author medox
16 */
17 public interface CoursesRep extends JpaRepository<Course, Long> {
18
19     @Query("SELECT count(*)>0 FROM EnrollementCourse u WHERE u.enCourse.id= :courseId AND u.enCourseUser.id= :userId")
20     public boolean isUserEnrolledInCourse(@Param("courseId") Long courseId, @Param("userId") Long userId);
21
22     public List<Course> findAllByOrderByIdAsc();
23
24 }
25

```

3-Course Repository Snapshot

4.2.2 Rest APIs Requests and Responses:

-Base Url: <https://sada-edu.herokuapp.com> -Header: application/json

1) Login Service:

-End point: /user/login

-Method type: post

-Request body:

```
{
    "userPhone": "01025356175",
    "userPass": "12345678"
}
```

-Response Cases: *If user exists (resultCode:1, status code: 200, message: OK) - Response body: {

```
"resultMessageEn": "LoggedIn Successfully",
"resultMessageAr": "تم تسجيل الدخول بنجاح",
"resultCode": 1,
"data": {
  "id": 1,
  "userName": "Mohamed Menem",
  "userPhone": "01025356175", "userRole": "Student"
}
```

*if user doesn't exist (resultCode:0, status code: 401, message: Unauthorized): -
Response body: {

```
"resultMessageEn": "Invalid user phone or password!",
"resultMessageAr": "خطأ في رقم المستخدم او كلمة السر!",
"resultCode": 0,
"data": null
```

2) Signup service:

-End point: /user/signup

-Method type: post

-Request body:

```
{
  "userName": "Takwa Abd El-Salam",
  "userPhone": "01005856045",
```

```
"userPass": "12345678",  
"userRole": "Student"  
  
} -Response Cases: *New user (resultCode:1, status code: 200, message: OK) -  
Response body: {  
  
"resultMessageEn": "Signed up successfully",  
"resultMessageAr": "تم إنشاء الحساب بنجاح",  
"resultCode": 1,  
"data": {  
"id": 60,  
"userName": "Takwa Abd El-Salam",  
"userPhone": "01s025356175",  
"userRole": "Student"  
}  
  
} *if user exists before (resultCode:0, status code: 200, message: OK): -Response  
body: {  
  
"resultMessageEn": "Your mobile phone is registered before!",  
"resultMessageAr": "لديك حساب بالفعل!",  
"resultCode": 0,  
"data": null  
}
```

3) Get All courses Service:

- End point: /courses/getAllCourses
- Method type: get

-Request body: Empty

-Response Cases: *If Courses exist (status code: 200, message: OK)

[

{

"id": 1,

"courseName": "الأبجدية بلغة الإشارة تعلم الحروف العربية",

"courseDesc": "يمثل المساق أول درجة في سلم إتقان والتمكن"

في لغة الإشارة، حيث يتضمن الحروف العربية كذلك المدلول الإشاري

للعديد من الأشياء في البيئة المحيطة

"instructorName": "أ/رحا ب محمد",

"instructorJobTitle": "مدربة لغة إشارة",

"instructorInfo": "أ/رحا ب محمد هي مدربة لغة إشارة معتمدة"

لدي العديد من الهيئات والمصالح الحكومية، تخرجت من كلية خدمة

الاجتماعية وكانت بدايتها نابعة من شغف العمل التطوعي",

"courseTime": "4 ساعات",

"courseCategory": " التعليم المدرسي",

"courseSubCategory": "لغة عربية",

"courseContent": "الأسبوع الأول محاضرة 1 : التعرف على "الحروف الأبجدية",

"courseLevel": 1,

"courseQuestions": [

{

"id": 1,

"questionText": "اختر حرف الألف " ,

"choices": [

{

"id": 3,

"choiceText": "الخيار الثالث " ,

"choiceImageUrl": "https://via.placeholder.com/300.png/09f/ttt" ,

"choiceCorrect": false

},

{

"id": 2,

"choiceText": "ال اختيار الاول " ,

"choiceImageUrl": "https://via.placeholder.com/300.png/09f/fff" ,

"choiceCorrect": true

},

{

"id": 1,

"choiceText": "ال اختيار الثاني " ,

"choiceImageUrl": "https://via.placeholder.com/300.png/09f/ttt" ,

"choiceCorrect": false

}

]

}

],

```

    "enrollementCourses": null,
    "coursesYoutubeLinks": [
        {
            "id": 2,
            "courseYoutubeVideoName": "محاضرة 1: الأبجدية " بالإشارة القديمة",
            "courseYoutubeVideoLink": "https://www.youtube.com/embed/JycQWWxkIyE"
        },
        {
            "id": 1,
            "courseYoutubeVideoName": "محاضرة 1: الأبجدية " بالإشارة الحديثة",
            "courseYoutubeVideoLink": "https://www.youtube.com/embed/9YffrCViTvk"
        }
    ],
    "isUserEnrolledBefore": false
}
]

```

*If no Courses (status code: 200, message: OK) -Response body: It will return Empty array.

4) Get specific course Service:

-End point: /courses/getCourse/coursed/userId -Method type: get
 -Request body:

-Response Cases: *If course exists (resultCode:1, status code: 200, message: OK) -
Response body:

{

"resultMessageEn": "Course is found successfully!",

"resultMessageAr": "تم إسترجاع البيانات بنجاح",

"resultCode": 1,

"data": {

"id": 1,

"courseName": "الأبجدية بلغة الإشارة تعلم الحروف العربية",

"courseDesc": "يمثل المساق أول درجة في سلم إتقان والتمكن"

في لغة الإشارة، حيث يتضمن الحروف العربية كذلك المدلول الإشاري

للعديد من الأشياء في البيئة المحيطة",

"instructorName": "أ/ رحاب محمد",

"instructorJobTitle": "مدربة لغة إشارة",

"instructorInfo": "أ/ رحاب محمد هي مدربة لغة إشارة معتمدة"

لدي العديد من الهيئات والمصالح الحكومية، تخرجت من كلية خدمة

الاجتماعية وكانت بدايتها نابعة من شغف العمل التطوعي",

"courseTime": "4 ساعات",

"courseCategory": " التعليم المدرسي",

"courseSubCategory": "لغة عربية",

"courseContent": "الأسبوع الأول محاضرة 1 : التعرف على",

"الحروف الأبجدية",

"courseLevel": 1,

```
"courseQuestions": [  
  {  
    "id": 1,  
    "questionText": "اختر حرف الألف",  
    "choices": [  
      {  
        "id": 2,  
        "choiceText": "ال اختيار الاول",  
        "choiceImageUrl": "https://via.placeholder.com/300.png/09f/fff",  
        "choiceCorrect": true  
      },  
      {  
        "id": 1,  
        "choiceText": "ال اختيار الثاني",  
        "choiceImageUrl": "https://via.placeholder.com/300.png/09f/ttt",  
        "choiceCorrect": false  
      },  
      {  
        "id": 3,  
        "choiceText": "ال اختيار الثالث",  
        "choiceImageUrl": "https://via.placeholder.com/300.png/09f/ttt",  
        "choiceCorrect": false  
      }  
    ]  
  }  
]
```

```

        ],
        },
        ],
        "enrollementCourses": null,
        "coursesYoutubeLinks": [
        {
        "id": 2,
        "courseYoutubeVideoName": "محاضرة 1: الأبجدية " بالإشارة القديمة",
        "courseYoutubeVideoLink": "https://www.youtube.com/embed/JycQWWxkIyE"
        },
        {
        "id": 1,
        "courseYoutubeVideoName": "محاضرة 1: الأبجدية " بالإشارة الحديثة",
        "courseYoutubeVideoLink": "https://www.youtube.com/embed/9YffrCViTvk"
        }
    ],
    "isUserEnrolledBefore": false
}
} *if course doesn't exist (resultCode:0, status code: 200, message: OK): -
Response body: {
    "resultMessageEn": "Course not found!",

```

```
"resultMessageAr": "لا يوجد بيانات",  
"resultCode": 0,  
"data": null }
```

5) Enroll to a course Service: -End point : /coursesList/enroll -Method type: post - Request body:

```
{  
    "enCoursePassLevel": "0",  
    "enCourse": {  
        "id": 1  
    },  
    "enCourseUser": {  
        "id": 1  
    }  
}
```

-Response Cases: *If course is enrolled successfully (resultCode:1, status code: 200, message: OK) -Response body : {

```
"resultMessageEn": "You have enrolled in the course successfully!",  
"resultMessageAr": "تم الإشتراك في المحتوى بنجاح",  
"resultCode": 1,  
"data": {  
    "id": 1,  
    "enCoursePassLevel": "0"
```

```
}
```

```
} *If course is enrolled before (resultCode:0, status code: 200, message: OK)
```

```
-Response body: {
```

```
    "resultMessageEn": "You have enrolled before",
```

```
    "resultMessageAr": "أنت مشترك بالفعل ",
```

```
    "resultCode": 0,
```

```
    "data": null
```

```
}
```

6) Get all enrolled courses of a user Service: -End point :

/coursesList/getEnrolledCourses -Method type: get -Request body:

```
{
```

```
    "userEnrolledId":1
```

```
}
```

*If user has courses (resultCode:1, status code: 200, message: OK) -Response body

```
:
```

```
{
```

```
    "resultMessageEn": "All Enrolled Courses!",
```

```
    "resultMessageAr": "المساقات المشترك بها",
```

```
    "resultCode": 1,
```

```
    "data": [
```

```
{
```

```
        "coursePassedLevel": "0%",
```

```
        "enrolledCourse": {
```

"id": 6,

"courseName": "الأبجدية بلغة الإشارة تعلم الحروف "

", العربية

"courseDesc": "يمثل المساق أول درجة في سلم إتقان "

والتمكن في لغة الإشارة، حيث يتضمن الحروف العربية كذلك المدلول

، الإشاري للعديد من الأشياء في البيئة المحيطة

"instructorName": "أرحاـب محمد"

"instructorJobTitle": "مـدربة لـغـة إـشـارـة"

"instructorInfo": "أـرـحـابـ مـهـمـ هيـ مدـرـبـةـ لـغـةـ إـشـارـةـ"

معتمدة لدى العديد من الهيئات والمصالح الحكومية، تخرـجـتـ منـ كلـيـةـ

ـ خـدـمـةـ اـجـتـمـاعـيـةـ وـكـانـتـ بـداـيـتـهـاـ نـابـعـةـ مـنـ شـغـفـ الـعـلـمـ التـطـوـعـيـ

"courseTime": "4 ساعات"

"courseCategory": "التعليم المدرسي"

"courseSubCategory": "لغة عربية"

"courseContent": "الأسبوع الأول محاضرة 1 : التعرف "

ـ عـلـيـ الـحـرـوـفـ الـأـبـجـديـةـ

"courseLevel": 1,

"courseQuestions": [

{

"id": 6,

"questionText": "اخـترـ حـرـفـ الـأـلـفـ"

"choices": [

{

```
"id": 16,  
  "choiceText": "الاختيار الاول ",  
  "choiceImageUrl": "https://via.placeholder.com/300.png/09f/fff",  
  "choiceCorrect": true  
},  
{  
  "id": 17,  
  "choiceText": "الاختيار الثاني ",  
  "choiceImageUrl": "https://via.placeholder.com/300.png/09f/ttt",  
  "choiceCorrect": false  
},  
{  
  "id": 18,  
  "choiceText": "الختيار الثالث ",  
  "choiceImageUrl": "https://via.placeholder.com/300.png/09f/ttt",  
  "choiceCorrect": false  
}  
]  
]  
],  
"enrollementCourses": null,  
"coursesYoutubeLinks": [  
{
```

```
"id": 11,  
  "courseYoutubeVideoName": "محاضرة 2 :  
    الأبجدية بالإشارة القديمة",  
  "courseYoutubeVideoLink": "https://www.youtube.com/embed/JycQWWxkIyE"  
,  
  {  
    "id": 12,  
    "courseYoutubeVideoName": "محاضرة 1 :  
    الأبجدية بالإشارة الحديثة",  
    "courseYoutubeVideoLink": "https://www.youtube.com/embed/9YffrCViTvk"  
  }  
],  
  "isUserEnrolledBefore": true  
}  
}  
]  
}
```

*If user has no courses (resultCode:0, status code: 200, message: OK)

-Response body: {

```
"resultMessageEn": "No Courses!",  
"resultMessageAr": "لا يوجد مساقات",  
"resultCode": 0,  
"data": null}
```

7) Update Course Progress Service:

-End point: /coursesList/updateCourseProgress

-Method type: post

-Request body:

```
{
```

```
    "updatedCourseLevel": "5",
```

```
    "eCourseId": 1,
```

```
    "eUserId": 1
```

```
} * (resultCode:1, status code: 200, message: OK) -Response body : {
```

```
    "resultMessageEn": "The course progress updated successfully!",
```

```
    "resultMessageAr": "تم تحديث حالة المنساق",
```

```
    "resultCode": 1,
```

```
    "data": {
```

```
        "updatedCourseLevel": "5",
```

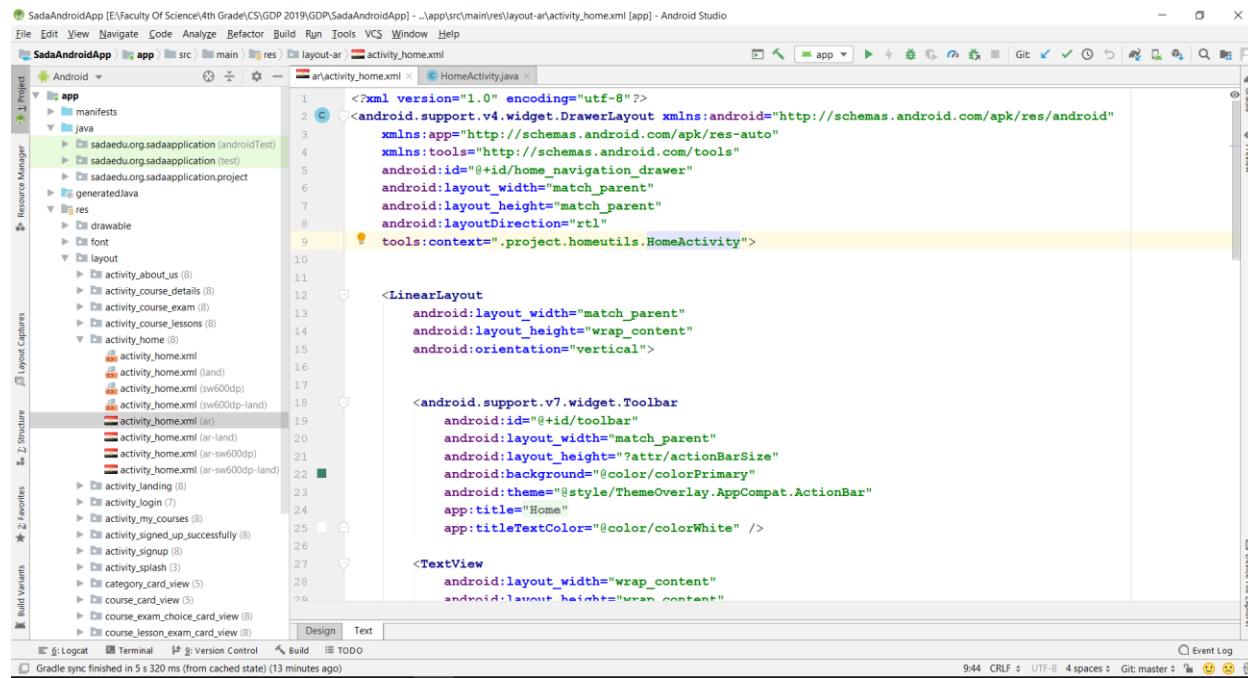
```
        "eCourseId": 1,
```

```
        "eUserId": 1
```

```
}
```

```
}
```

4.2.3 Android Code Screenshots:



```

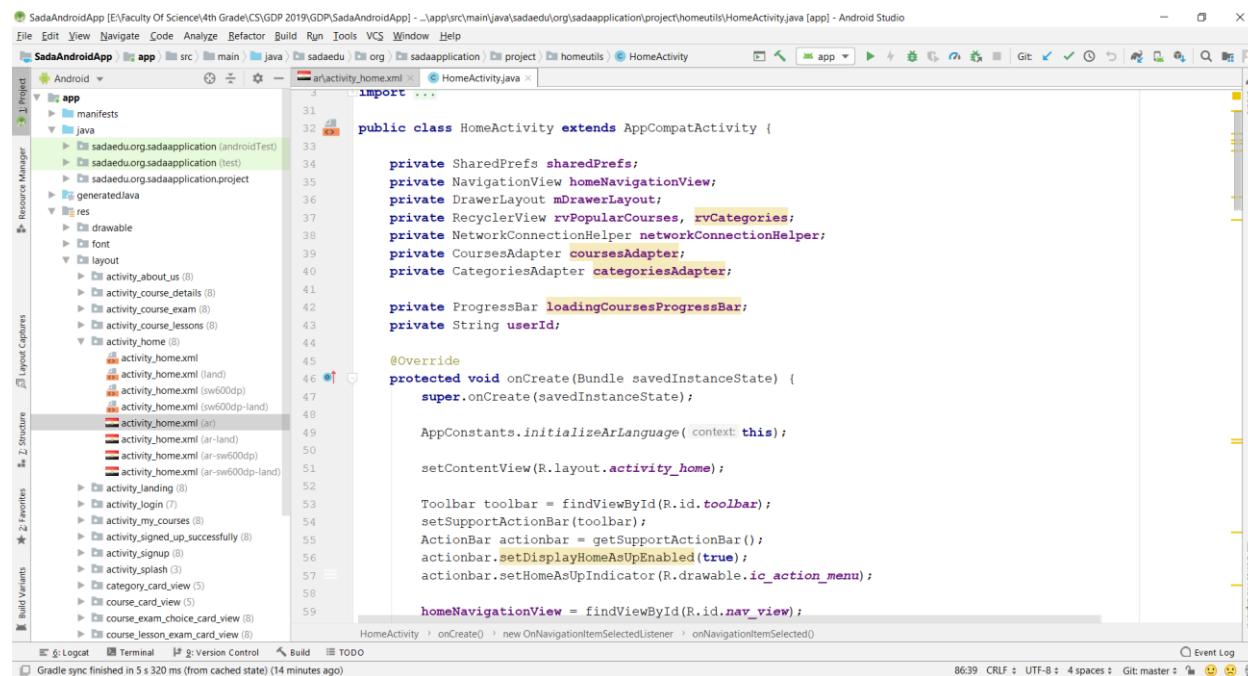
<?xml version="1.0" encoding="utf-8"?>
<android.support.v4.widget.DrawerLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/home_navigation_drawer"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layoutDirection="rtl"
    tools:context=".project.homeutils.HomeActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical">

        <android.support.v7.widget.Toolbar
            android:id="@+id/toolbar"
            android:layout_width="match_parent"
            android:layout_height="?attr actionBarSize"
            android:background="@color/colorPrimary"
            android:theme="@style/ThemeOverlay.AppCompat.ActionBar"
            app:title="Home"
            app:titleTextColor="@color/colorWhite" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
    
```

4-Home Class Snapshot



```

import ...

public class HomeActivity extends AppCompatActivity {

    private SharedPrefs sharedPrefs;
    private NavigationView homeNavigationView;
    private DrawerLayout mDrawerLayout;
    private RecyclerView rvPopularCourses, rvCategories;
    private NetworkConnectionHelper networkConnectionHelper;
    private CoursesAdapter coursesAdapter;
    private CategoriesAdapter categoriesAdapter;

    private ProgressBar loadingCoursesProgressBar;
    private String userId;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        AppConstants.initializeArLanguage(context: this);

        setContentView(R.layout.activity_home);

        Toolbar toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
        ActionBar actionBar = getSupportActionBar();
        actionBar.setDisplayHomeAsUpEnabled(true);
        actionBar.setHomeAsUpIndicator(R.drawable.ic_action_menu);

        homeNavigationView = findViewById(R.id.nav_view);
    }
}

```

5- Home XML Snapshot

The screenshot shows the Android Studio interface with the project 'SadaAndroidApp' open. The left sidebar displays the project structure under 'app'. The main editor window shows the Java code for 'CourseDetailsActivity'. The code implements a CardView for course details and handles the creation of the activity. It includes imports for AppCompatActivity, View.OnClickListener, and various TextView and Button components. The code uses findViewById to get references to these views and sets up click listeners. The bottom status bar indicates a Gradle sync was completed in 5 s 320 ms.

```
public class CourseDetailsActivity extends AppCompatActivity implements View.OnClickListener {  
  
    private CardView courseCard;  
    private TextView tvCourseTitle, tvCourseTime, tvCourseSubCategory, tvCourseLevel, tvCourseExams, tvCourseDescri  
    tvInstructorCourseInfoText, tvCourseContentText, tvCourseDescTitleLayout, tvInstructorCourseInfoTitleLayout  
    private Button btnEnrollInCourse;  
    private LinearLayout courseDescTitleLayout, instructorCourseInfoTitleLayout, courseContentTitleLayout;  
    private String userId, courseId, courseTitle, courseTime, courseSubCategory, courseLevel, courseExams, courseDes  
    private SharedPreferences sharedPreferences;  
    private boolean isUserEnrolledBeforeInCourse;  
    private NetworkConnectionHelper networkConnectionHelper;  
    private ProgressBar courseDetailsIndeterminateBar;  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        AppConstants.initializeArLanguage(context: this);  
  
        setContentView(R.layout.activity_course_details);  
  
        if (getSupportActionBar() != null) {  
            getSupportActionBar().setDisplayHomeAsUpEnabled(true);  
            getSupportActionBar().setTitle("Course details");  
        }  
  
        courseDetailsIndeterminateBar = (ProgressBar) findViewById(R.id.courseDetailsIndeterminateBar);  
  
        courseCard = (CardView) findViewById(R.id.course_card);  
    }  
}
```

5-Course Details Class Snapshot



The screenshot shows the Android Studio interface with the project 'SadaAndroidApp' open. The main window displays the XML code for the 'activity_course_details.xml' layout file. The code defines a ScrollView containing a Linear Layout with a CardView for course details. The preview pane on the right shows a mobile application interface with a navigation bar at the top and a list of course details below it. The bottom right corner of the preview shows a magnifying glass icon.

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginBottom="10dp"
    android:layoutDirection="rtl"
    android:background="@color/colorWhite"
    tools:context=".project.coursedetailsutils.CourseDetailsActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginEnd="20dp"
        android:background="@color/colorWhite"
        android:orientation="vertical">

        <android.support.v7.widget.CardView xmlns:app="http://schemas.android.com/apk/res/android"
            android:id="@+id/course_card"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="20dp"
            android:background="@color/colorAccent"
            app:cardCornerRadius="5dp"
            app:cardElevation="5dp">
```

6- Course Details XML Snapshot

4.2.4 Website Code Screenshots:

```
vigate Debug Help
E:/Faculty Of Science/4th Grade/CS/GDP 2019/GDP/Sada Website/sada-website/index.html (Getting Started) - Brackets

1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4 <meta charset="UTF-8">
5 <title>الرئيسية</title>
6 <link rel="stylesheet" type="text/css" href="Index/index.css">
7 </head>
8
9 <body>
10 <header>
11
12 <ul>
13     <li>
14     </li>
15     <li><a href="Index.html">المقحة الرئيسية</a></li>
16     <li><a href="ContactUs.html">عن المشروع</a></li>
17     <li><a href="AboutUs.html">تواصل معنا</a></li>
18
19 <div class="btns">
20     <a class="loginlink" href="logIn.html" id="btnLogIn">
21         دخول </a>
22
23     <button class="signup-btn">
24         <a class="signuplink" href="SignUp.html" id="btnSignUp">
25             إنشاء حساب </a>
26         </button>
27
28     </div>
29 </ul>
30
31
32 </header>
33
34
35 <div class="showcase">
36
37     
38
39     
40 </div>
41
42 <div class="details">
```

```
• E/Faculty Of Science/4th Grade/CS/GDP 2019/GDP/Sada Website/sada-website/index.html (Getting Started) - Brackets

private Debug Help
 30
 31
 32 </header>
 33
 34
 35 <div class="showcase">
 36   
 37   
 38 </div>
 39
 40
 41
 42 <div class="details">
 43   تتوفر منصة مدنى مخربى تعليمى مقدم بلغة الإشارة بهدف دم ويسكنن نوى المهم وتوفر بيئة قادمة للتراث
 44   <h3> لا تقتصر المنصة على فئة معينة بل هي موجهة لكل شخص مهتم بلغة الإشارة الأطبياء والمعلمين والآباء وخططات المجتمع المدني
 45   من أجل حفظها قبل الجميع <h3> كن أنت الصدى
 46 </div>
 47
 48
 49   <input type="button" class="btn" name="coursPage" value=" عرض المساق " id="coursesPage" >
 50   <script type="text/javascript" src="Index/index.js"></script>
 51
 52 <footer>
 53
 54
 55
 56
 57
 58 <div class="contact">
 59   <h3>-- تواصل معنا -- </h3>
 60   
 61   
 62   
 63   <h5>-- -- عن البريد الإلكتروني --<br> --sada2019@gmail.com --
 64   <br>
 65   Tel : + 2 01025356175 </h5>
 66 </div>
 67
 68 <div class="hyper-links">
 69
 70   <ul>
 71     <li>عن الفريق</li>
 72     <li>الم歇مة الرئيسية</li>
 73   </ul>
 74 </div>
```

7- Home Page Code Snapshot

Screenshot of Brackets IDE showing the header section of the CourseLessons.html file.

```

1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4 <meta charset="UTF-8">
5 <title>عن المقرر</title>
6 <link rel="stylesheet" href="CourseLessons/courselessons.css" >
7 </head>
8 <body>
9
10
11 <header>
12
13 <ul>
14 <li>
15 </li>
16 <li><a href="index.html">الصفحة الرئيسية</a></li>
17 <li><a href="ContactUs.html">عن المقرر</a></li>
18 <li><a href="AboutUs.html">تواصل معنا</a></li>
19
20 <div class="btns">
21 <a class="loginlink" href="login.html" id="btnLogin">
22 مدخل </a>
23
24 <button class="signup-btn">
25 <a class="signuplink" href="SignUp.html" id="btnSignUp">
26 إنشاء حساب </a>
27 </button>
28
29 </div>
30 </ul>
31
32 </header>
33
34
35
36 <div class="rightdiv" >
37
38 <div class="container">
39 <div> <i class="dotvideo" style="font-size: 2em; color: #007bff; margin-right: 10px;"></i> <label class="dotLab" style="color: #007bff; font-weight: bold; margin-right: 10px;">مقدمة المقرر </label> <div>
40 <div class="courseLessonNames" id="courseLessonNames" style="border: 1px solid #ccc; padding: 5px; width: 100%; height: 150px; overflow-y: scroll; margin-top: 10px;">
41
42 </div>

```

Screenshot of Brackets IDE showing the footer section of the CourseLessons.html file.

```

46 </div>
47 <div class="description" id="masak">
48 <p>مقدمة 1: ملخص المقرر</p>
49
50 <iframe width="500" height="315" src="" id="iframeCourseLessonVideo" frameborder="0" allow="accelerometer; autoplay; encrypted-media; gyroscope; picture-in-picture" allowfullscreen></iframe>
51 <input type="button" class="ifbtn1" name="next" value="المقدمة" id="next" style="width: 100px; height: 30px; border: 1px solid #007bff; background-color: #007bff; color: white; font-weight: bold; border-radius: 5px; margin-bottom: 10px;">
52 <input type="button" class="ifbtn2" name="previous" value="ال回到家" id="previous" style="width: 100px; height: 30px; border: 1px solid #007bff; background-color: #007bff; color: white; font-weight: bold; border-radius: 5px; margin-bottom: 10px;">
53
54
55 </div>
56
57
58
59 <script type="text/javascript" src="CourseLessons/courseLessons.js"></script>
60 <script src="https://unpkg.com/axios/dist/axios.min.js"></script>
61 <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
62
63 <footer>
64
65
66
67
68 <div class="contact">
69 <h3>-- تواصل معنا --</h3>
70 
71 
72 
73 <div> -- ملخص المقرر -- <br> -- sada2019@gmail.com --<br>
74 Tel : + 2 01025356175 </h3>
75 </div>
76
77 </div>
78
79 <div class="hyper-links">
80
81 <ul>
82 <li><a href="#">ال回到家</a></li>
83 <li><a href="#">الصفحة الرئيسية</a></li>
84
85
86 </ul>
87 </div>

```

8- Course Lessons Code Snapshot

E:/Faculty Of Science/4th Grade/CS/GDP 2019/GDP/Sada Website/sada-website/AllCourses.html (Getting Started) - Brackets

```

1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <title> التعليم المدرسي </title>
6   <link rel="stylesheet" href="Allcourses/style.css">
7   <link rel="stylesheet" href="Allcourses/normalize.css">
8   <script src="Allcourses/AllCourses.js"></script>
9   <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
10  <script src="https://unpkg.com/axios/dist/axios.min.js"></script>
11
12
13 </head>
14 <body data-spy="scroll">
15   <!-- start Header -->
16   <div class="header">
17     <div class="navbar">
18       <div class="container">
19         <ul>
20           <li><a href="index.html" >( ) محتوى </a></li>
21           <li><a href="index.html" >المصلحة الوطنية </a></li>
22           <li><a href="AboutUs.html" >عن المشروع </a></li>
23           <li><a href="ContactUs.html" >تواصل معنا </a></li>
24           <li><a href="SignUp.html" id="btnc SignUp" class="reg" >إنشاء حساب </a></li>
25           <li><a href="Login.html" id="btnc Login" class="active" >دخول </a></li>
26         </ul>
27       </div>
28     </div>
29   </div>
30   <!-- end Header -->
31   <!-- start features -->
32   <div class="features">
33     <div class="container">
34       <div class="feat">
35         <h2> التعليم المدرسي </h2>
36       </div>
37     <p> يهدف مسار التعليم المدرسي الى اكتساب المتعلمين بناءً معرفياً متضمناً لغة الاشارة القديمة والجديدة والحرروف العربية والواواف اليومية جميع مسارات المسار موجهة الى المستوى المبتدئ وايضاً الى المبتدئين يتمتعون بالقدرة على تعلمها بسهولة وسرعة</p>
38   </div>
39
40
41

```

Line 1, Column 1 – 99 Lines

INS UTF-8 HTML Spaces: 4

E:/Faculty Of Science/4th Grade/CS/GDP 2019/GDP/Sada Website/sada-website/AllCourses.html (Getting Started) - Brackets

```

45
46   </div>
47   <!--end features -->
48   <!--start About_me-->
49   <div class="container" >المسار </h1> </div>
50   <div class="divClass">
51     <div class="card" id="allCoursesDiv">
52
53   </div>
54 </div>
55 </div>
56
57
58 <!--End About_me-->
59   <!--start footer-->
60
61   <div class="footer">
62     <div class="container">
63       <div class="teap">
64
65         <div class="contant_us" ><b>تواصل معنا</b><br> </div>
66         <ul class="social" >
67
68           <li>
69             <a href="https://www.facebook.com/">
70               <i class="icon-facebook" ></i>
71
72               
73             </a>
74           </li>
75           <li>
76             <a href="https://www.instagram.com/">
77               <i class="icon-instagram" ></i>
78               
79             </a>
80           </li>
81           <li>
82             <a href="https://www.linkedin.com/">
83               <i class="icon-linkedin" ></i>
84               
85             </a>
86           </li>
87         </ul>

```

Line 1, Column 1 – 99 Lines

INS UTF-8 HTML Spaces: 4

9-All Courses Code Snapshot

File Edit Find View Navigate Debug Help

Working Files

- index.html
- Courseslessons.html
- AllCourses.html
- login.js**

Getting Started

- + screenshots
- index.html
- main.css

```
32 ]
33
34 //Check if user isloggedin or not.
35 v function isUserLoggedIn() {
36 v   if (userID != null){
37 v     return true;
38 v   }else{
39 v     return false;
40 v   }
41 };
42
43
44
45 //Check if user is logged in open home page.
46 v window.onload = function () {
47 v   if(isUserLoggedIn==true){
48 v     openHomePage();
49   }
50 }
51
52 //Start login process.
53 v btnLogin.onclick = function(){
54 v   axios.post('https://sada-edu.herokuapp.com/user/login',{
55 v     userPhone: form.elements[0].value,
56 v     userPass: form.elements[1].value
57 v   }).then(function (response) {
58 v     console.log("resultCodeResonse" + response.data.resultCode);
59 v     if (response.data.resultCode == 1) {
60 v       //Cache user details and open home page.
61 v       cacheUserDetails(response.data.data.id, response.data.data.userName, response.data.data.userPhone);
62 v       openHomePage();
63 v     } else {
64 v       alert(response.data.resultMessageAr);
65 v     }
66 v   }).catch(function (error) {
67 v     console.log(error);
68 v   }).then(function () {
69 v     // always executed
70 v   });
71 v   console.log("in axios");
72 v };
73 v };
74 }
```

Line 1 Column 1 – 80 Lines

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Working Files

- index.html
- Courseslessons.html
- AllCourses.html
- login.js**

Getting Started

- + screenshots
- index.html
- main.css

```
1 /* global document, window ,alert, axios,localStorage*/
2
3
4
5 //Initialize login form and signup,login buttons.
6 var form = document.getElementById("loginForm"),
7   btnLogin = document.getElementById("btnLogin"),
8   btnOpenSignUpPage = document.getElementById("btnOpenSignUpPage"),
9
10 //Get userId from cached data.
11 userID = localStorage.getItem("userID");
12
13
14 //Open home page.
15 v function openHomePage() {
16   window.location = 'index.html';
17 }
18
19
20 //Save user Info into Cache.
21 v function cacheUserDetails (id,userName,userPhone) {
22   localStorage.setItem("userID",id);
23   localStorage.setItem("userName",userName);
24   localStorage.setItem("userPhone",userPhone);
25 }
26
27
28 //Open SignUp page.
29 v btnOpenSignUpPage.onclick = function(){
30   window.location = 'SignUp.html';
31 }
32
33
34 //Check if user isloggedin or not.
35 v function isUserLoggedIn() {
36 v   if (userID != null){
37 v     return true;
38 v   }else{
39 v     return false;
40 v   }
41 };
42
```

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10-Login Page Code Snapshot

Conclusion:

Although there are no official statistics for the number of deaf people in Egypt, a 2007 study by the World Health Organization estimated that hearing loss is prevalent in 16% of the population of Egypt. This means more than 13 million people across all age groups.

As is the case in many countries, people with disabilities are viewed as people who live on charity. Underlying this are cultural assumptions and negative stereotypes that are placed on the deaf; to have a disability or a disabled child is sometimes seen as punishment from God for the sins of the family. Due to these negative assumptions, families with deaf children tend to keep them indoors, not allowing them to play outside or interact with others. They are often viewed as less than human, lazy and unable to do simple tasks, simply because they cannot communicate easily with the general public.

So, the aim from this project is to help the deaf people to live a better life through empowering them with a strong carrier, starting from the school education to learning new skills to help them to get job suitable with their disability.

Our Future Work:

1. Adding more categories of education.
2. Adding More trainings and courses to help them learning more skills to acquire jobs (like photographing, embroidery, etc.).
3. Adding detecting motion feature in solving exams.
4. Adding sign up for teacher to help him in controlling the students in his class and make classrooms.
5. Adding signup for parents to keep up the progress of their children in the school.

References:

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[4] Wikipedia.

[5] The Deaf Unit Cairo.

[6] Interviews Videos:

- <https://www.youtube.com/watch?v=qWYvtvEMmbg>

-https://www.youtube.com/watch?v=x_Ogewr-tGM

-<https://www.youtube.com/watch?v=Avu8fsuJEfk>