



Yoga Mobile Application using XML

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Abstract The goal of this paper to propose an effective automated individual exercise with is yoga mobile application using XML to motivate and encourage people to exercise regularly. The Extensible Markup Language (XML) is a subset of SGML that is described in this paper. Its goal is to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with HTML. XML has been designed for ease of implementation and for interoperability with both SGML and HTML So researcher developed this XML program to be used on the mobile, support wide variety of applications and make it easy to write programs which process XML documents which will be human- legible and reasonably clear and easy to create. The application contains videos and illustrations of yoga to explain the steps. This application is designed for yoga training in a simple, easy and enjoyable way. It offers the best trainers in the world and can communicate with them via e-mail as well as with the program designers to avoid any problem and receive comments and suggestions to improve application and performance.

Keywords Yoga, Mobile Application, XML

Introduction

Along with the development of information technology, mobile applications are widely applied to various fields. The use of mobile applications is considered effective to help user in understanding the problem. One example of the application of mobile applications needed today is an application that can help to determine a wide range of health [1].

What is yoga? It's a type of exercise that integrates a system of poses and breathing techniques in order to bring physical and mental well-being. There are several varieties, including slower, more meditative styles like hatha that focus on breathing and mindfulness, and active styles like vinyasa that integrate more physical exercises for strength and flexibility. Whether it's a way of life or an occasional hobby, many people who practice feel the benefits are undeniable. According to the Yoga Journal study, people who practice yoga reported experiencing increased self-image, strength, flexibility, mental clarity, and spirituality. Several other studies have linked yoga to lowered body mass and risk of heart disease and increased overall well-being. Because it's great for any experience level, yoga is appropriate for people young and old and for people living with chronic conditions or not.

Continuous Delivery (CD) enables mobile developers to release small, high quality chunks of working software in a rapid manner. However, faster delivery and a higher software quality do neither guarantee user satisfaction nor positive business outcomes [2].

XML (Extensible Markup Language) has emerged as the most important format for data exchange and storage over systems across the greatest variety of tools and platforms. It is a rapidly maturing technology with powerful real-world applications, particularly for the management, display and organization of data. Together with its associated tools (XSL, XSLT, XPath, XLink, XPointer, DOM DTD, Schemas, ...etc), it is an essential



technology for anyone looking for more efficient and cost effective ways of both managing and transferring data.

Today, XML is invading the world of computers and occupying most of its fields. It is widely spreading over the internet, networks, information systems, software and operating systems, DBMS, search tools, web development and services, communication protocols and other fields. As a result, XML data are floating within and between different applications and systems all over the internet and intranets. Due to the huge amount of XML structured data being circulated, controlling XML data becomes imperative for various purposes and aims [3].

Object Oriented databases that could preserve XML data structures as objects could not compete with speed and reliability with their DBMS commercial competitors [4]. However, as the importance of and demand for storing XML data increased and different techniques for data extraction and inference from XML-based through applying summarization [5] and knowledge extraction are growing [6,7], two new approaches which are XML Enabled Database and Native XML Database have emerged to address those [8].

Exchanging data between different domains plays an important and essential role of doing businesses. As mobile applications use the internet as source of information, and these information is processed behind the scene by mobile application servers, some of the application servers adapted XML file structure to be as the transmission data format, therefore, XML increasingly become a standard format for transmitting data on networks between different businesses, the need of finding secured and efficient techniques of transmitting XML data files is a necessity matter [9].

What is XML?

Extensible Markup Language, abbreviated XML, describes a class of data objects called XML documents and partially describes the behavior of computer programs which process them. XML is an application profile or restricted form of SGML, the Standard Generalized Markup Language. By construction, XML documents are conforming SGML documents.

XML documents are made up of storage units called entities, which contain either parsed or unparsed data. Parsed data is made up of characters, some of which form character data, and some of which form markup. Markup encodes a description of the document's storage layout and logical structure. XML provides a mechanism to impose constraints on the storage layout and logical structure.

XML in future Web development

We have been participating in XML development since its creation. It has been amazing to see how quickly the XML standard has been developed, and how quickly a large number of software vendors have adopted the standard. We strongly believe that XML will be as important to the future of the Web as HTML has been to the foundation of the Web. XML is the future for all data transmission and data manipulation over the Web.

Although, relational database systems are very popular to use but the processing of XML documents and in particular semi structured XML documents which account for the majority, is the area that we have to take two main approaches into our consideration. XML enabled databases are a good solution when it comes to XML data exchange between applications and other databases. An important consequence of using XML as a data exchange format is that an XML enabled database will only retain information captured by the underlying data model. Moreover, this model is not the most appropriate for fully and efficiently managing large XML documents, as shredding/publishing XML data to/from relational tables requires a large number of join operations. Native XML databases are focused on applications that need to store whole XML documents, in contrast with applications that simply store data that may or may not have been in an XML format [10].

Perhaps the most well known applications are web related, but there are many other non-web based applications where XML is useful—for example as a replacement for (or to complement) traditional database [11]. A lot of languages that are based on XML are around, e.g., RDF [12], OIL [13], DAML+OIL, OWL, etc. Further, XML tools have been used to develop a library of inference methods to be used for reasoning on different representations.



XML Structure

Each XML document has both a logical and a physical structure. Physically, the document is composed of units called entities. An entity may refer to other entities to cause their inclusion in the document. A document begins in a "root" or document entity. Logically, the document is composed of declarations, elements, comments, character references, and processing instructions, all of which are indicated in the document by explicit markup. A software module called an XML processor is used to read XML documents and provide access to their content and structure. It is assumed that an XML processor is doing its work on behalf of another module, called the application. This specification describes the required behavior of an XML processor in terms of how it must read XML data and the information it must provide to the application.

Well formed XML documents simply markup pages with descriptive tags. You don't need to describe or explain what these tags mean. In other words a well formed XML document does not need a DTD, but it must conform to the XML syntax rules. If all tags in a document are correctly formed and follow XML guidelines, then a document is considered as well formed.

Methodology

The yoga mobile application is the health improvement and an integrated system. In a group of old ritual originally from India, Yoga has become today part is linked with a workout significantly affected in all parts of the world. This system starts from trainee login and the system authorize the password email if it is correct the trainee can choose any king of yoga training and watch videos. In the other hand the trainee can browse the system to view all training notes or find about any king or browse the training and Coaches that attached in the system (fig. 1).

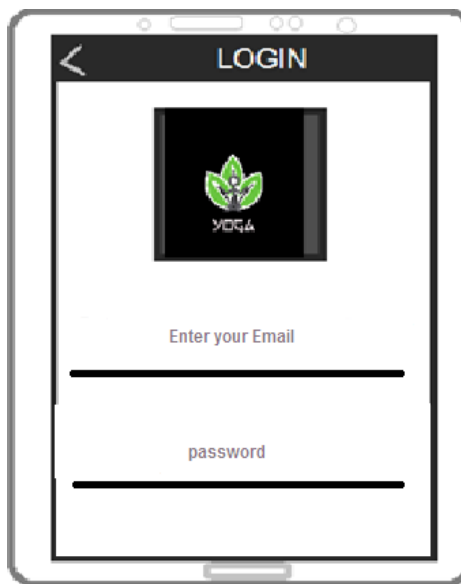


Figure 1: The Login page

Context Diagram

A Context Diagram is a diagram that defines the boundary between the system, or part of a system, and its environment, showing the entities that interact with it. This diagram is a high level view of a system (fig 2). It is similar to a block diagram.

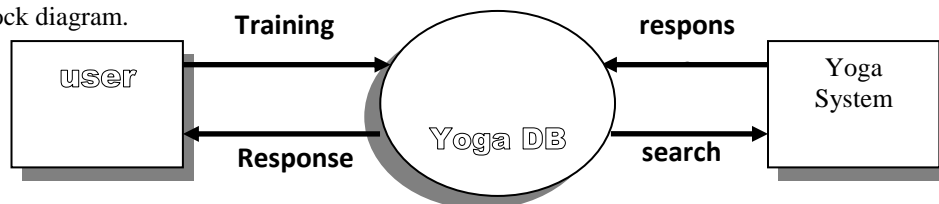


Figure 2: Context Diagram

Flow Chart

Flow chart describes the process of the system and the system working with many processes: the system starts from (trainee/coach) login and the system authorize the password and email if it is correct. The (coach) can make the change process in the system like add, update, delete (subjects, schedule, notes or assignments). In the other hand the (trainee/coach) can browse the system to view previous notes or find about any subject or brows the kind of training that attached in the system (fig. 3).

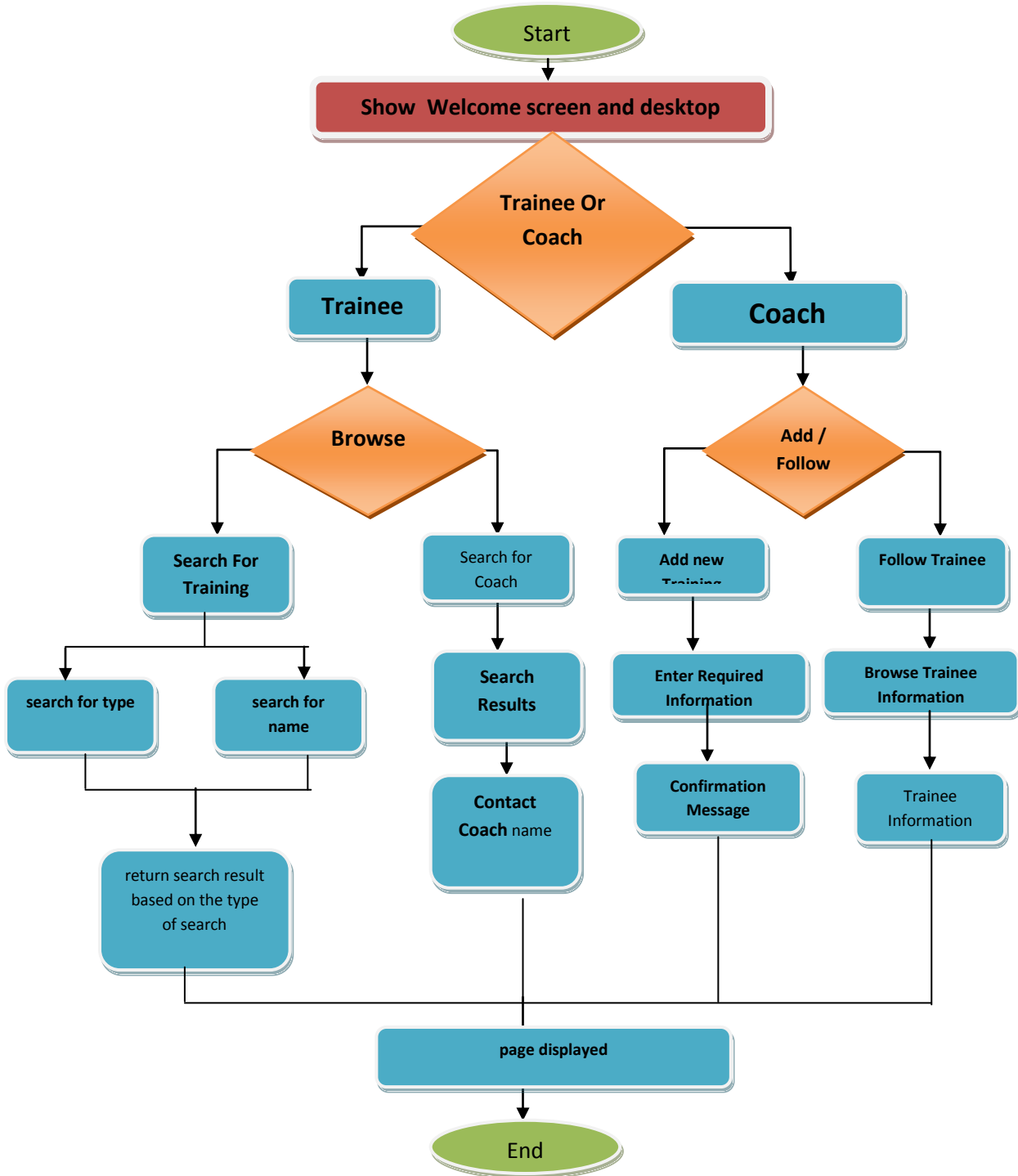


Figure 3: Flow Chart Diagram

ER Diagram

The Entity Relationship Diagram (ERD) depicts the relationship between the data objects. The ERD is the notation that is used to conduct the data modeling activity the attributes of each data object noted in the ERD can be described design a data object descriptions (fig. 4) .

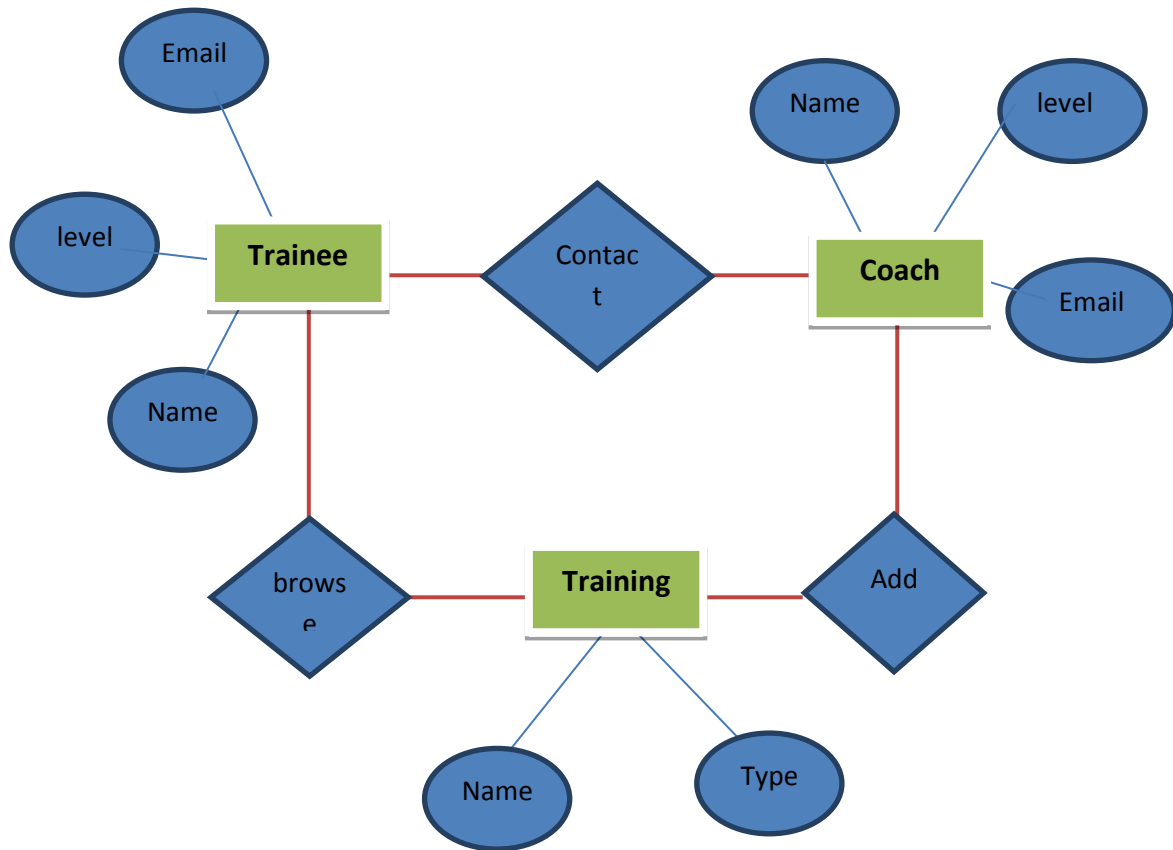


Figure 4: ER Diagram

Data Flow Diagram

Data flow diagram describes a process that is happened between the actor and the data. In my system, we have two actors (trainee/Coach) and System. Also, there are four data stores: training, user (trainee/Coach), instructions, videos.

Coach: he can make any change process on the Training’s Instruction based on the nature of training and status of trainee

Trainee: can list the training and can choose any kind of training to watch it and listen to instructions.

System: the system will do the process of saving the data at the database and request needed information for the user.

The following (fig. 5,6,7) shows the DFD for the proposed system.

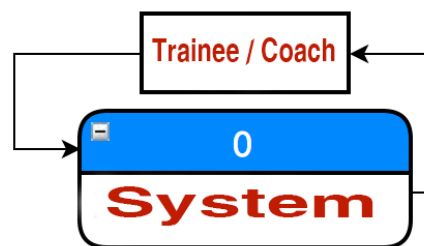


Figure 5: Data Flow Diagram – Context Diagram – Level 0

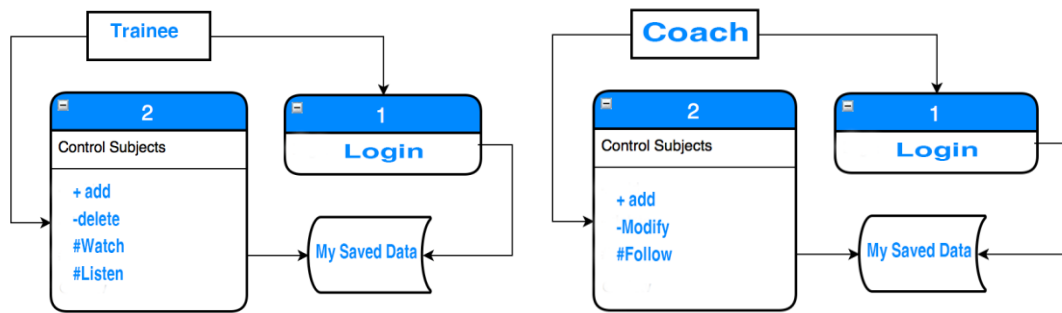


Figure 6: Data Flow Diagram – Context Diagram – Level 1

The Trainee can first login into the system and then control his profile (can add Item , delete item, Watch video , Listen to video).

The Coach can first login into the system and then control his profile (can add Item , Modify item, Follow some Trainee).

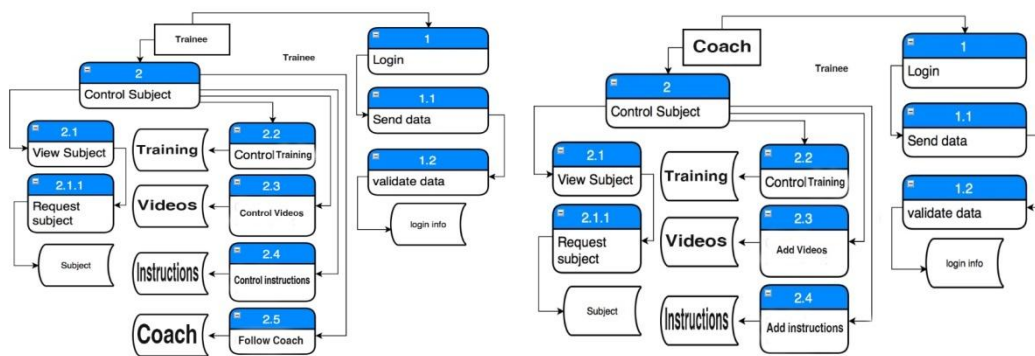


Figure 7: Data Flow Diagram – Context Diagram – Level 2

Implementation

The implementation stage comes, depends on the design phase of the implementation of the graphical user interfaces designed to apply yoga. Database design was done using entity-relationship (ER Diagram). XML format for operative data was designed using document type declaration – DTD and XML schema. Interchange model was designed using context diagram, dataflow diagram, system flowchart and process specification.

Yoga mobile consists of Microsoft .NET Framework, ASP .NET, ADO .NET and MSXML. We adopted an XML Technology to design Yoga mobile because flexible and extensible XML Schemas (XSD) offer a powerful set of tools for constraining and formalizing the vocabulary and grammar of XML documents. As XSD become large and complex, or when schemas that represent different types of pre-defined exercise yoga template have some sections in common, it can be useful to include smaller schemas as building blocks in the larger ones.

As shown in (fig. 8) , “Yoga Program” is the root node that has more than one “Session” node. “Session” node refers to the definition of an Yoga program.

Working Example

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema elementFormDefault="qualified" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
<name value="Yasser A Nada" interset="YOGA"></name>
<xs:sequence>
<xs:element name="Trainee" type="xs:string" />
<xs:element name="Coach" type="xs:string" />
<xs:choice>
<xs:element name="Duration Time" type="xs:decimal" />
```

```

<xs:sequence>
<xs:element name="Repeation Count" type="xs:unsignedInt" />
<xs:element name="Sets" type="xs:unsignedInt" />
</xs:sequence>
</xs:choice>
</xs:sequence>
</xs:complexType>
<xs:complexType name=" control subjects ">
<xs:sequence>
<xs:element name="add" type="xs:string" />
<xs:element name="delete" type="xs:string" />
<xs:element name="watch" type="xs:unsignedInt" />
<xs:element name="listen" minOccurs="3" maxOccurs="3" type="PhaseType" />
</xs:sequence>
</xs:complexType>
<xs:element name="YOGA Program">
<xs:complexType>
<xs:sequence>
<xs:element name="Version" type="xs:decimal" nillable="true" />
<xs:element name="ValidPeriod" type="xs:date" />
<xs:element name="Session" type="SessionType" minOccurs="1" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:complexType name="PhaseType">
<xs:sequence>
<xs:element name="PhaseNumber" type="xs:int" />
<xs:element name="PhaseTime" type="xs:time" />
<xs:element name="ExerCiseUnit" type="ExerciseUnitRoot" minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
</xs:schema>

```

Figure 8: XML schema description of Yoga mobile

The implemented using the Android Studio includes java programming language. Contains the application logo and Home Page (fig. 9, 10).

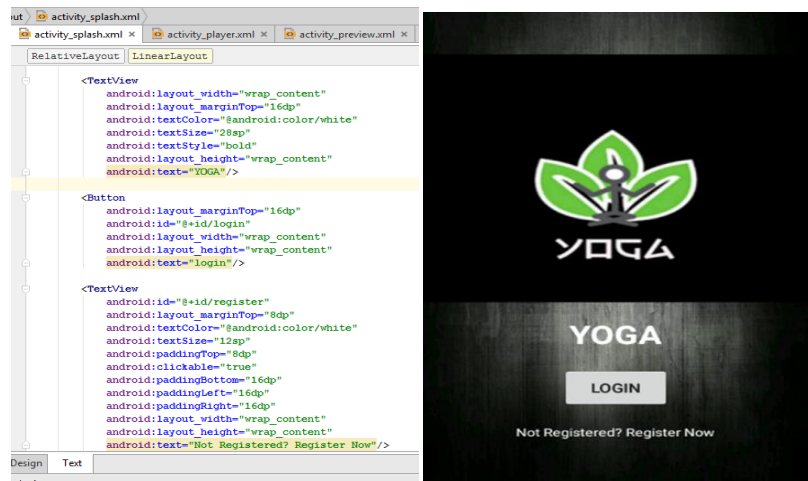


Figure 9: logo



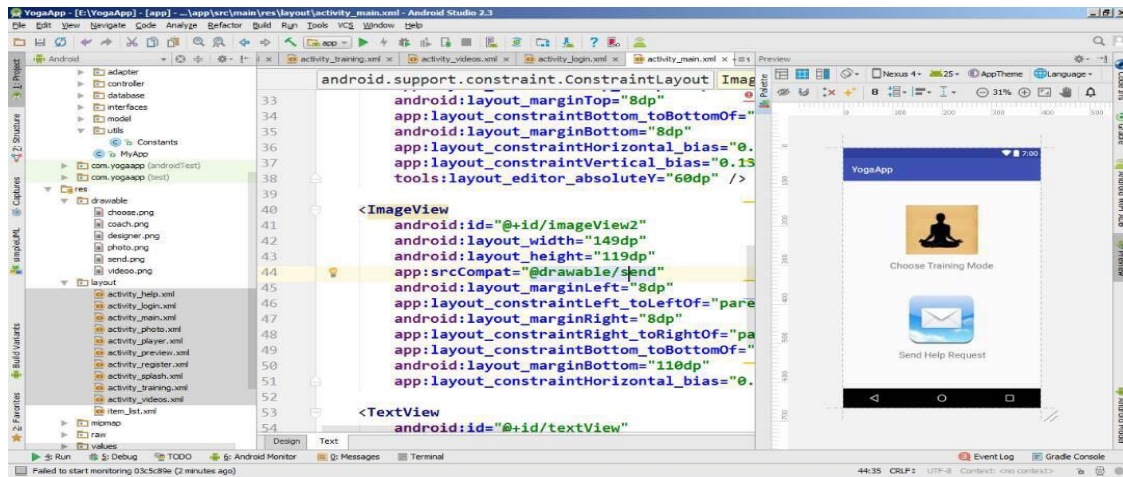


Figure 10: Home Page

Results and Discussion

Many people living in the 21st century’s modern society seldom have an opportunity to initiate and motivate themselves to exercise, despite understanding the importance of exercise. Furthermore, there are only few, if any, people who can regularly maintain exercise. This is a problem that is not only related to individual disposition such as patience, sincerity and tenacity but also intimately associated with an environment that does not lastingly support motivation to attain health.

The proposed solution suggests realistic goals to improve health and continuous concerns to maintain exercise (fig.11).

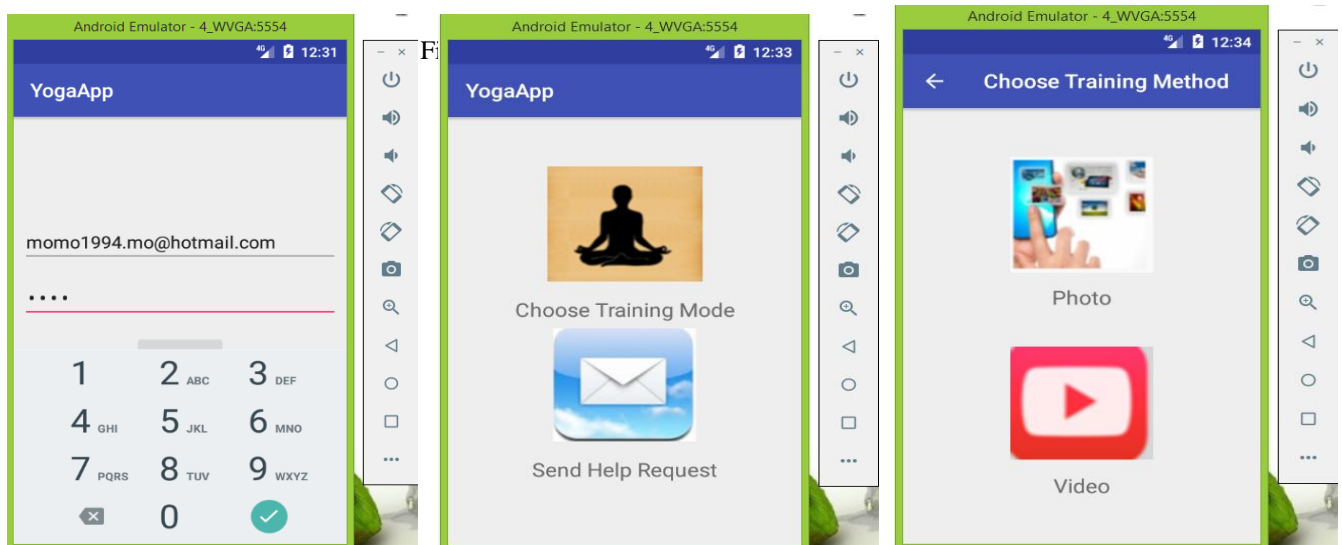


Figure 11: Choose training method

Many people believe that yoga is useless or difficult and requires a lot of effort to do this exercise. The importance of yoga and many of the benefits of the body as well as the self-life with positive energy and optimism to everything around us have been made clear. So researcher had designed the application including everything yoga trainers can access the application of transactions, which aims to apply yoga to implement transactions with the easy way with the help of the best coaches in all parts of the world and communicate with them via email. I identify the application of yoga because it can communicate with the designers of the application and makes the trainee communicate with them in any problem or proposal for application opinion or help them if they wanted to. Education of trainees in two ways, first through the illustrations with a simple explanation of the movements and the trainee must read the interpretation of simplification and then applying

animation, video and easier to follow the illustrations so that the trainee application of animation without resorting to read it before all of this. Rest of the trainee to learn yoga and applies its moves step by step.

Conclusion

In this paper, most of the major features of the XML Language have been discussed. Hopefully the reader will have enough background to pick up and read the XML specifications without difficulty. The primary objective of this paper is to develop a yoga mobile application that can be used in the guide exercise through the mobile. There are many beliefs and suspicions that yoga aims to achieve self-reliance and awareness of God and closer relationship between the body and the mind and the faith of the spiritual liberation and freedom from the delusion. The objectives of the study are: promote physical and mental health, breath control, meditation and understanding of the nature, focus and flexibility and balance of the body and the muscles. In addition, all of this helpful information is offered through the widely spread web-based technology that people easily use at home, fitness centers and many other places. Continuously motivating people to exercise regularly is more important than finding a barriers such as lack of time, cost of equipment or gym membership, lack of nearby facilities and poor weather or night-time lighting, and so it can be possible to remotely guide exercise through the mobile.

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