Chapter 1

1.0 Project Title:

E-learning for Kids.

1.1 Objective

To design and develop a web-based application that will achieve a more precise activity base-learning and focuses on using real-world objects to facilitate pre-school learning of the English alphabets and counting of numbers. A learning system based on formalised teaching but with the help of electronic resources.

Here we introduce a web-based application which focuses on making the kids learn in a fun and interactive manner and making good use of smartphones and internet to explore their talents and curiosity in an effective manner by the use of an interactive web Application. We are also focussing on making the kids physically active by introducing various dance and exercise videos.

We propose our web application since it have some key features which diverse it from others are as follows:

- A web-based application but yet simple that is able to focus on kids understanding, rather than destructions.
- A web-based application that help kids to be focus and happy to learn by using real world objects like sounds, and graphics that will attract kids' attention
- A web-based application that increase efficiency of teaching and learning at the pre-school level and maximizing the speed of learning in growing kids.
- A System that is limited to pre-school learning activities, but not the higher learning achievement and to establish a system that explains the much-needed areas when it comes to child development and learning ability.
- A web base application that is operating system (OS) independent.

It will be the first web-based application that focuses on e-learning for pre-school kids for development in good reading ability and understanding of any child is laid on. This now matters for parents to invest more time and money on materials and tools that

can help their little kids to gain knowledge and become successful in the future education and profession.

Based on a strong theoretical foundation, this website will propose a web-based system that will allow kids to develop cognitive and psychomotor skills such as recognition of numbers and alphabets, logical thinking. The system was designed with friendly navigation, backgrounds, sounds and colours to attain the attention of kids while learning. The idea first originated from web-based Application Development. The current system is developed on the basis of web-based browser platform. HTML and CSS are the two of the core technologies for building Web pages. HTML provides the structure of the page, CSS the (visual and aural) layout, for a variety of devices. It was developed by Tim Berners-Lee and World Wide Web Consortium (W3C) respectively.

1.2 Introduction:

Intentional use of electronic media and Information and Communication Technologies (ICT) in teaching and learning process is referred to as e-learning, where "e" denotes "electronic". It can also be described by many other terms including online learning, virtual learning, distributed learning, network and web-based learning. E-learning includes all educational activities carried out by individuals/groups working online/offline and synchronously/asynchronously through network/standalone computers and electronic devices.

Individualized self-paced e-learning - online refers to situations where individual learners access learning resources like database or course content online through Intranet/Internet. Individualized self-paced e-learning - offline is about a learner using learning resources like database/computer assisted learning packages.

E-learning enables higher interactivity among professors and students and study material coverage in both undergraduate/graduate students. Further, professors and assistants ensure that students' critical thinking is developed, and to provide them freedom in discussion, topics choice, exchange of ideas and information, and expansion of knowledge.

As the development of technology grows, e-learning helps students in their studies in an easy manner, anytime and anywhere. e-Learning has become a popular and acceptable way to study due to its flexibility and better innovativeness regarding introduction of new/contemporary programs as compared to traditional faculty. Also, many faculties who opted for e-learning started implementing various software packages supporting online learning in addition to application of different studying modalities.

1.3 Study of the Existing System

As part of our initial research, we decided to investigate applications that offer the same or similar services for android and other platforms. The aim is to see how these applications work and to see how they can be improved. Some of the websites that offer the relatively similar service are:

- **Khan Academy:** Khan Academy is a not-for-profit educational organization started by Salman Khan in 2008.They provide education worldwide for free. It is founded by Salman Khan. Sal was born and raised in New Orleans, Louisiana. His mother was born in Calcutta, India; and his father was born in Barisal, Bangladesh. Sal is a former hedge fund analyst with degrees from MIT and Harvard.

Limitation:

1)You are only exposed to one teaching style. Some students are auditory learners, others are visual, some are kinetic, and many students are a mix. Some students learn best with examples, some students learn best by doing.

2)It lessens spontaneous creativity. Khan Academy, by nature, takes away some of the creativity and innovation that develops as you learn. It can only instruct; it cannot inspire and guide you to come to a solution on your own. A fundamental part of education is not only learning the material—in conjunction with generating ideas and being able to execute them.

- **Epic!:** Epic was born out of a single question: *How do we make books more accessible to kids?* As parents, it always seemed strange to us that our kids could so easily play games

and watch videos on their iPhones and iPads, but the same couldn't be said for books. So in 2013, we decided to build the first "epic" reading experience, designed just for kids. Today, Epic has grown into an award-winning subscription service, which gives millions of families and classrooms instant, unlimited access to thousands of books, videos and quizzes from leading publishers to help kids everywhere read, learn and grow.

Limitation:

1)Its only free for 30 days after that we have to pay.

Coolmathgames

Cool Math Games (branded as Coolmath Games) is an online web portal that hosts HTML and Flash web browser games targeted at children and young adults. Cool Math Games is operated by Coolmath LLC and first went online in 1997 with the slogan "Where logic & thinking meets fun & games."The site maintains a policy that it will only host games that the operators believe are non-violent and educational and is partnered with coolmath.com and coolmath4kids.com.

Limitation:

1) This particular website is only focused on teaching or exploring the talents of an individual kid only on one direction that is through math problems and ignoring all the other talents that a kid may be interested.

2) This particular website has advertisement for extra profit that may drift a kid to harmful information/content.

1.4 Features to be included in the system.

1. **Assessment Problems:** Most of the existing system does not support kid's assessment and this will make it difficult for parents and teachers to check the kid's development progress as well as their performance.

2. **Appropriate security access:** Since mostly the websites are exposed to external links for advertisements purposes to earn extra income for some of the creators of these online kids learning websites. Kids may navigate away to some of these unsafe contents and may

have negative impact on the kids. For example, adult contents or violence videos. Our website will be ad-free so that kids do not drift to unsafe content.

3. Operating system independent: Since the contents mostly in SWF file formats, iPads and iPods might not be able to display lessons. It is known that currently mackintosh operating system does not support flash content and this might be a problem for many kids to have access to some of these lessons if their parents are using Apple computers products. Our website will focus on limiting the use of SWF file format and flash content so that the website runs on every platform

4. Adequate information provision: The dangers and the problems associated with this is that the lessons might not suite the syllabus of what the kids will be learning in their schools. Our Admins and information provider will focus on providing the best content following the guidelines of the Education system.

5. To improve Efficiency: To increase efficiency of teaching and learning at the pre-school level and maximizing the speed of learning in growing kids.

6. Focus on Pre-school Learning: To develop a system that is limited to pre-school learning activities, but not the higher learning achievement and to establish a system that explains the much-needed areas when it comes to child development and learning ability.

Chapter 2 Feasibility Study and Requirement Analysis

The feasibility study is an evaluation and analysis of the potential of a proposed project which is based on extensive investigation and research to support the process of decision making. A feasibility study is simply an assessment of the practicality of a proposed plan or project.

2.1 Technical Feasibility

It is an evaluation of the hardware and software and how it meets the need of the proposed system.

2.1.1 Software Requirement

1. FRONTEND:- HTML, CSS
2. BACKEND:- My SQL
3. BROWSER:- Google Chrome & Mozilla Firefox, Safari
4. Operating System: -Windows XP and Above, Mac OS, Android

2.1.2 Hardware Requirement. (Minimum)

1. Pentium(R) Dual-Core CPU.
2. 512 MB RAM for windows XP/windows7/windows8.
3. 20 GB HDD

2.2 Schedule Feasibility

2.2.1 Work Breakdown Structure

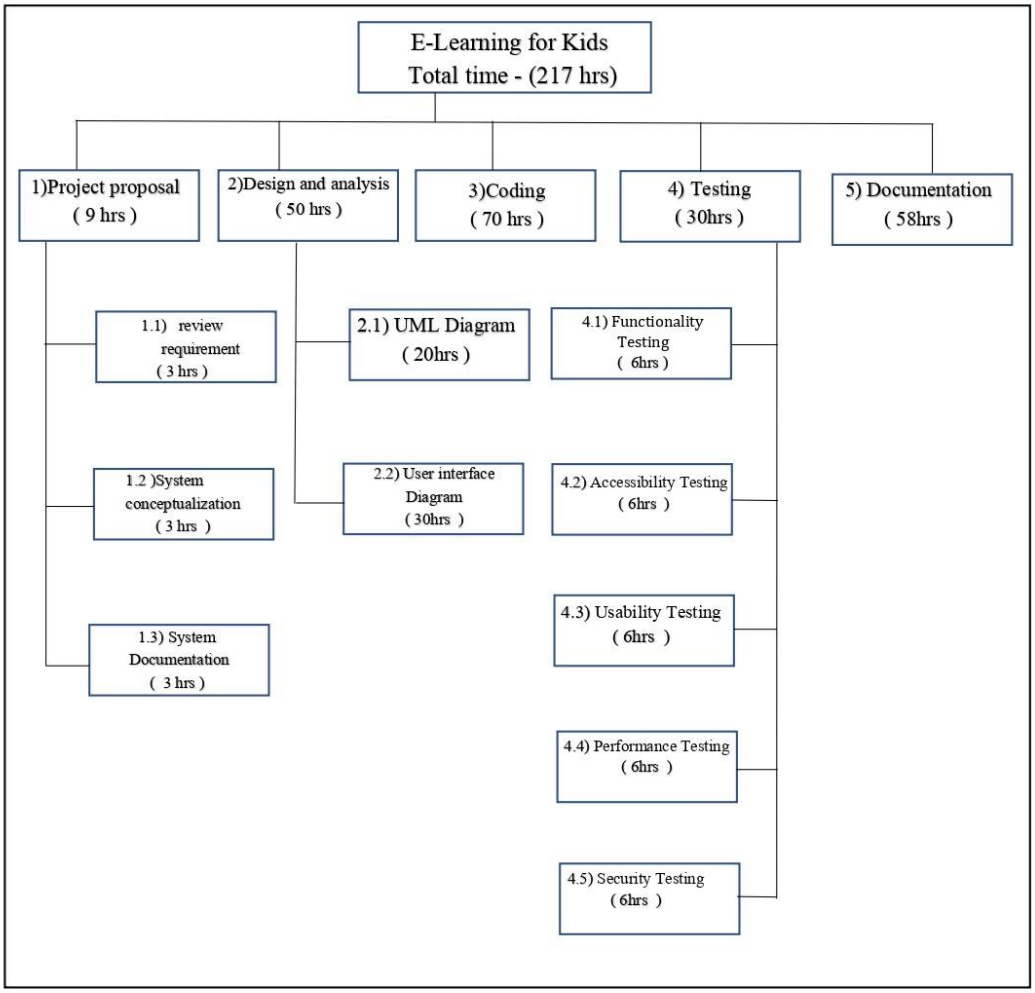

Fig 1: Work Breakdown Structure

2.2.2 Gantt Chart

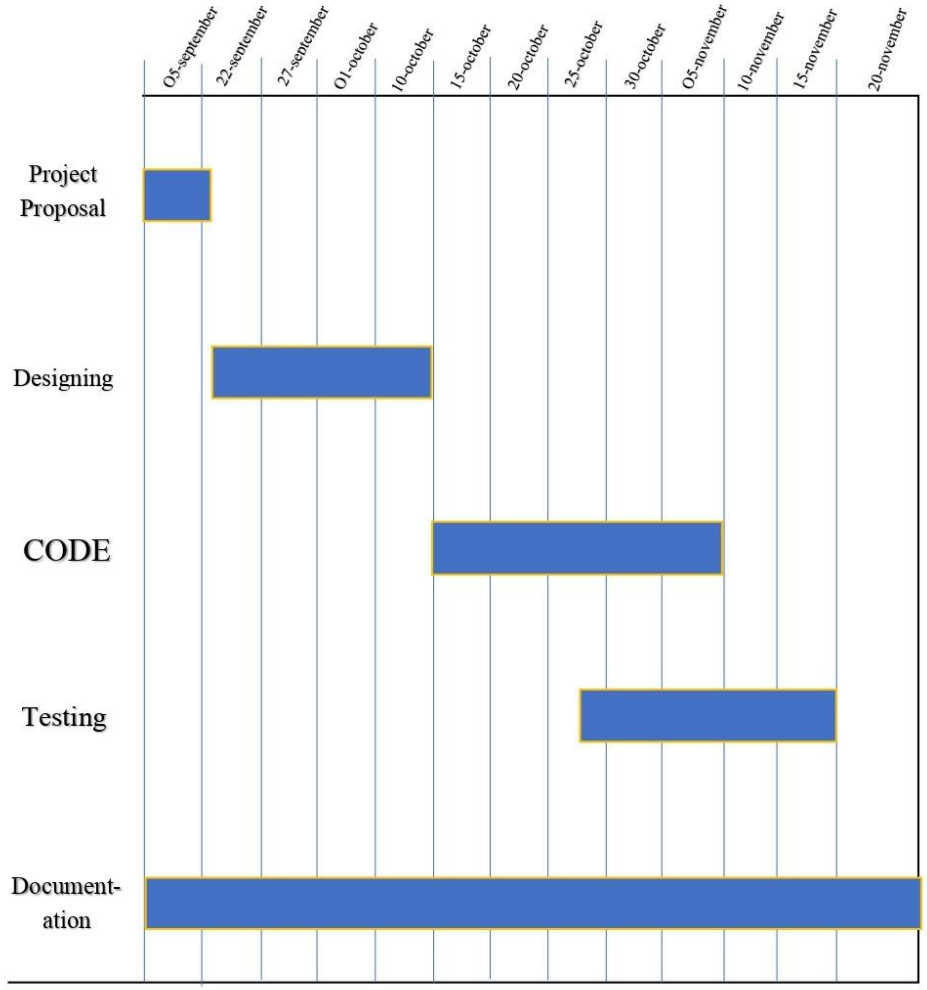

Fig 2: Gantt Chart

2.3 Economic Feasibility

The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. It includes quantification and identification of all the benefits expected. This assessment typically involves a cost/ benefits analysis.

2.3.1 COCOMO Model

COCOMO is one of the most generally used software estimation models in the world. COCOMO predicts the efforts and schedule of a software product based on the size of the software.

In COCOMO, projects are categorized into three types:

1. Organic
2. Semidetached
3. Embedded

Software Project	a_a	b_b	c_b	d_b
Organic	2.4	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

The Basic COCOMO equations take the form:

Effort = a_b KLOC b_b … (1)

Duration = c_b E d_b …(2)

People Required = Effort/Duration … (3)

We will be using the ORGANIC model. Accordingly, the calculations are as follows:

We assume that our project contains 3000 line of codes.

Therefore, KLOC=3

Effort = 2.4 (KLOC) 1.05 person/month

= 2.4 $(3)^{1.05}$ = 7.60 person/month

Duration = 2.5 (Effort) 0.38 months

= 2.5 $(7.60)^{0.38}$= 2.16 months

People Required = Effort/Duration

= 7.60 /2.16 = 3.52

2.4 Operational Feasibility

The proposed system is operationally feasible as the final output of the project can be used by any web browser the and it will be easy and user friendly to use. The proposed system does not require special training to operate the application.

3 Conclusion

The effectiveness of the e-learning depends on the quality and quantity of the applied e-learning materials, the needed time for taking the course and the results at the course end. As the time necessary for learning the new information that given course offers is shorter and the results at the end are better, the effectiveness of e-learning is higher.

Serious problem nowadays in e-learning is the lack of personalization of the teaching and learning process. In the Internet space can be found countless courses in one and the same theme, presented in different way, with different level of usage of multimedia elements, directed to different learning styles, with different duration and complexity. The user has the very difficult task – to find in the ocean of e-learning courses, the most appropriate for his learning style, basic knowledge and skills. This is not always possible, and even when the choice of an appropriate course is a fact, the chance the initial goal (gaining knowledge and skills in a given field) to be reached for a short time is not high. It is necessary to be created an approach, which will ensure knowledge (skills and competencies) acquiring and opportunity for preliminary selection from great number of e-learning modules with the aim for personalization of the e-learning environment according to the individuality of each student and his expectations about the final results.

The personalization in the e-learning may be described as a composition of procedures, approaches and techniques for giving the students the tools for self-learning, which will give them the opportunity to study according to their own capabilities, learning style, knowledge and skills, to choose the type of the e-learning material and the way of presentation of the new material, according to their own interests, needs and learning style.

One of the approaches for improving the personalization in the e-learning process is ensuring access to appropriate e-learning materials, according the individual learning style of the student.

The future work is directed to finding methods and tools for increasing the use of interactivity in the e-learning materials. The modern computer (hardware and software) technologies offer wide range of opportunities for creation of interactive multimedia e-learning resources, appropriate for the different learning style.

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