

BOOK REPORT ON

ANDROID LEARNING APPLICATION FOR KIDS (e-SLATE)

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR FINAL YEAR OF

BACHELOR OF ENGINNERING IN INFORMATION TECHNOLOGY

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CERTIFICATE

This is to certify that the following project members of final year class have satisfactorily completed the PROJECT report on 'Mobile Application for Kids on Android Operating System' in the partial fulfilment of the Information Technology course of Bachelor of Engineering of the Mumbai University during July to November 2012.

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H.O.D. (IT) PROJECT GUIDE

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CHAPTER-1

INTRODUCTION

1.1 Introduction

One and a half billion people, all over the world, are walking around with powerful computers in their pockets and purses. The fact is they often do not realize it, because they call them something else. But today's high-end cell phones have the computing power of a mid-1990s personal computer (PC)—while consuming only one one-hundredth of the energy. Even the simplest, voice-only phones have more complex and powerful chips than the 1969 on-board computer that landed a spaceship on the moon.

. Mobile learning, through the use of mobile technology, will allow citizens of the world to access learning materials and information from anywhere and at anytime. Learners will not have to wait for a certain time to learn or go to a certain place to learn. With mobile learning, learners will be empowered since they can learn whenever and wherever they want.

There are thousands of application in the market for popular mobile operating systems mainly iOS, Android, Windows and Blackberry. This report shows analysis of various operating system of mobiles based on its existing application. It also gives the content of the application with the layout.

1.2 Problem Statement

A small kid is more attracted towards a mobile phone rather than a book. So if we develop a game through which we help the kids of age group 3-5 to learn the Alphabets, Numbers, Comparisons, Colours and objects it would be beneficial for the child for learning through the use of smart technology with fun .Also the children will get use to the new evolving technology and would help for the fundamental development of a child. This software will also allow the child to play games on the sections which kid has learnt.

1.3 Project Objective

The objective of this project to develop and implement a new android application which will help teachers as well as parents for teaching kids. The application will help child learn:

- o Alphabets:Introduction to alphabets,Phonics introduction,Drawing,Alphabet song.
- Numbers: Introduction to numbers, Phonics introduction, Drawing, Numbers song, addition, subtraction.
- o General Awareness: Colours, Animals, Vegetables, Fruits, Shapes.
- o Games:Alphabetic games, Numeric games.

CHAPTER-2

LITERATURE SURVEY

3.1 Learning Theories

Learning theories are conceptual frameworks that describe how information is absorbed, processed, and retained during learning. Learning brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and world views.

There are three main categories of learning theory: behaviorism, cognitivism, and constructivism. Behaviorism focuses only on the objectively observable aspects of learning. Cognitive theories look beyond behavior to explain brain-based learning. And constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts.

Behaviourism

Behaviorism (or behaviourism), also called the learning perspective (where any physical action is a behavior), is a philosophy of psychology based on the proposition that all things that organisms do—including acting, thinking, and feeling—can and should be regarded as behaviors, and that psychological disorders are best treated by altering behavior patterns or modifying the environment. According to behaviorism, individuals' response to different environmental stimuli shapes our behaviors. Behaviorists believe behavior can be studied in a methodical and recognizable manner with no consideration of internal mental states. Thus, all behavior can be clarified without the need to reflect on psychological mental states.

Three basic assumptions are held to be true. First, learning is manifested by a change in behavior. Second, the environment shapes behavior. And third, the principles of contiguity (how close in time two events must be for a bond to be formed) and reinforcement (any means of increasing the likelihood that an event will be repeated) are central to explaining the learning process. For behaviorism, learning is the acquisition of new behavior through conditioning.

There are two types of possible conditioning:

1) Classical conditioning, where the behavior becomes a reflex response to stimulus as in the case of Pavlov's Dogs. Pavlov was interested in studying reflexes, when he saw that the dogs drooled without the proper stimulus. Although no food was in sight, their saliva still dribbled. It turned out that the dogs were reacting to lab coats. Every time the dogs were served food, the person who served the food was wearing a lab coat. Therefore, the dogs reacted as if food was on its way whenever they saw a lab coat. In a series of experiments, Pavlov then tried to figure out how these phenomena were linked. For example, he struck a bell when the dogs were fed. If the bell was sounded in close association with their meal, the dogs learned to

associate the sound of the bell with food. After a while, at the mere sound of the bell, they responded by drooling.

2) Operant conditioning where there is reinforcement of the behavior by a reward or a punishment. The theory of operant conditioning was developed by B.F. Skinner and is known as Radical Behaviorism. The word 'operant' refers to the way in which behavior 'operates on the environment'. Briefly, a behavior may result either in reinforcement, which increases the likelihood of the behavior recurring, or punishment, which decreases the likelihood of the behavior recurring. It is important to note that, a punishment is not considered to be applicable if it does not result in the reduction of the behavior, and so the terms punishment and reinforcement are determined as a result of the actions. Within this framework, behaviorists are particularly interested in measurable changes in behavior. In operant conditioning we learn to associate a response (our behavior) and its consequence and thus to repeat acts followed by good results and avoid acts followed by bad results.

Since behaviorists view the learning process as a change in behavior, educators arrange the environment to elicit desired responses through such devices as behavioral objectives, competency -based education, and skill development and training.

Cognitivism

In psychology, cognitivism is a theoretical framework for understanding the mind that gained credence in the 1950s. The movement was a response to behaviorism, which cognitivists said neglected to explain cognition. Cognitive psychology derived its name from the Latin cognoscere, referring to knowing and information, thus cognitive psychology is an information processing psychology derived in part from earlier traditions of the investigation of thought and problem solving. Behaviorists acknowledged the existence of thinking, but identified it as a behavior. Cognitivists argued that the way people think impacts their behavior and therefore cannot be a behavior in and of itself. Cognitivists later argued that thinking is so essential to psychology that the study of thinking should become its own field.

Cognitivism Grew in response to Behaviorism. Knowledge is stored cognitively as symbols. Learning is the process of connecting symbols in a meaningful & memorable way. Studies focused on the mental processes that facilitate symbol connection.

There are two concepts

- 1) Discovery Learning
- 2) Meaningful Verbal Learning

Discovery Learning

1. Anybody can learn anything at any age, provided it is stated in terms they can understand.

2. Confront the learner with problems and help them find solutions. Do not present sequenced materials.

Meaningful Verbal Learning

- 1. New material is presented in a systematic way, and is connected to existing cognitive structures in a meaningful way.
- 2. When learners have difficulty with new material, go back to the concrete anchors (Advance Organizers). Provide a Discovery approach, and they'll learn.

Constructivism

Constructivism is a revolution in educational psychology. Built on the work of Piaget and Bruner, constructivism emphasizes the importance of active involvement of learners in constructing knowledge for themselves...Constructivism emphasizes top-down processing: begin with complex problems and teach basic skills while solving these problems. Constructivism explains why students do not learn deeply by listening to a teacher, or reading from a textbook. Learning sciences research is revealing the deeper underlying basis of how knowledge construction works. To design effective environments, one needs a very good understanding of what children know when they come to the classroom. This requires sophisticated research into children's cognitive development, and the learning sciences draws heavily on psychological studies of cognitive development (e.g., Siegler, 1998). The learning theories of John Dewey, Marie Montessori, and David Kolb serve as the foundation of constructivist learning theory. Constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge or experience. In other words, "learning involves constructing one's own knowledge from one's own experiences." Constructivist learning, therefore, is a very personal endeavor, whereby internalized concepts, rules, and general principles may consequently be applied in a practical real-world context. Constructivism itself has many variations, such as Active learning, discovery learning, and knowledge building. Regardless of the variety, constructivism promotes a student's free exploration within a given framework or structure. The teacher acts as a facilitator who encourages students to discover principles for themselves and to construct knowledge by working to solve realistic problems. Aspects of constructivism can be found in self-directed learning, transformational learning, and experiential learning.

Some learning theories

Piaget

Jean Piaget proposed that children's thinking does not develop entirely smoothly: instead, there are certain points at which it "takes off" and moves into completely new areas

and capabilities. He saw these transitions as taking place at about 18 months, 7 years and 11 or 12 years. This has been taken to mean that before these ages children are not capable (no matter how bright) of understanding things in certain ways, and has been used as the basis for scheduling the school curriculum. Whether or not *should* be the case is a different matter.

Piaget's Key Ideas

Adaptation	What it says: adapting to the world through assimilation and accommodation
Assimilation	The process by which a person takes material into their mind from the environment, which may mean changing the evidence of their senses to make it fit.
Accommodation	The difference made to one's mind or concepts by the process of assimilation. Note that assimilation and accommodation go together: you can't have one without the other.
Classification	The ability to group objects together on the basis of common features.
Class Inclusion	The understanding, more advanced than simple classification, that some classes or sets of objects are also sub-sets of a larger class. (E.g. there is a class of objects called dogs. There is also a class called animals. But all dogs are also animals, so the class of animals includes that of dogs)
Conservation	The realisation that objects or sets of objects stay the same even when they are changed about or made to look different.
Decentration	The ability to move away from one system of classification to another one as appropriate.
Egocentrism	The belief that you are the centre of the universe and everything revolves around you: the corresponding inability to see the world as someone else does and adapt to it. Not moral "selfishness", just an early stage of psychological development.
Operation	The process of working something out in your head. Young children (in the sensorimotor and pre-operational stages) have to act, and try things out in the real world, to work things out (like count on fingers): older children and adults can do more in their heads.
Schema (or	The representation in the mind of a set of perceptions, ideas, and/or

scheme)	actions, which go together.
Stage	A period in a child's development in which he or she is capable of understanding some things but not others

Stages of Cognitive Development

Stage	Characterised by		
Sensori-motor (Birth-2 yrs)	Differentiates self from objects Recognises self as agent of action and begins to act intentionally: e.g. pulls a string to set mobile in motion or shakes a rattle to make a noise Achieves object permanence: realises that things continue to exist even when no longer present to the sense (pace Bishop Berkeley)		
Pre-operational (2-7 years)	Learns to use language and to represent objects by images and words Thinking is still egocentric: has difficulty taking the viewpoint of others Classifies objects by a single feature: e.g. groups together all the red blocks regardless of shape or all the square blocks regardless of colour		
Concrete operational (7-11 years)	Can think logically about objects and events Achieves conservation of number (age 6), mass (age 7), and weight (age 9) Classifies objects according to several features and can order them in series along a single dimension such as size.		
Formal operational (11 years and up)	Can think logically about abstract propositions and test hypotheses systemtically Becomes concerned with the hypothetical, the future, and ideological problems		

The accumulating evidence is that this scheme is too rigid: many children manage concrete operations earlier than he thought, and some people never attain formal operations (or at least are not called upon to use them).

Piaget's approach is central to the school of cognitive theory known as "cognitive constructivism".

Vygotsky

Vygotsky's Social Development Theory is the work of Russian psychologist Lev Vygotsky (1896-1934), who lived during Russian Revolution. Vygotsky's work was largely unkown to the West until it was published in 1962.

Vygotsky's theory is one of the foundations of constructivism. It asserts three major themes:

Major themes:

- 1. Social interaction plays a fundamental role in the process of cognitive development. In contrast to Jean Piaget's understanding of child development (in which development necessarily precedes learning), Vygotsky felt social learning precedes development. He states: "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological)." (Vygotsky, 1978).
- 2. The More Knowledgeable Other (MKO). The MKO refers to anyone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept. The MKO is normally thought of as being a teacher, coach, or older adult, but the MKO could also be peers, a younger person, or even computers.
- 3. The Zone of Proximal Development (ZPD). The ZPD is the distance between a student's ability to perform a task under adult guidance and/or with peer collaboration and the student's ability solving the problem independently. According to Vygotsky, learning occurred in this zone.

Vygotsky focused on the connections between people and the sociocultural context in which they act and interact in shared experiences (Crawford, 1996). According to Vygotsky, humans use tools that develop from a culture, such as speech and writing, to mediate their social environments. Initially children develop these tools to serve solely as social functions, ways to communicate needs. Vygotsky believed that the internalization of these tools led to higher thinking skills.

Applications of the Vygotsky's Social Development Theory:

Many schools have traditionally held a transmissionist or instructionist model in which a teacher or lecturer 'transmits' information to students. In contrast, Vygotsky's theory promotes learning contexts in which students play an active role in learning. Roles of the teacher and student are therefore shifted, as a teacher should collaborate with his or her students in order to help facilitate meaning construction in students. Learning therefore becomes a reciprocal experience for the students and teacher.

2.3 Existing Application

In IOS

First Letters and Phonics



Featuring sleek graphics as well as two original renditions of the alphabet song by popular children's musician Debi Derryberry, First Letters and Phonics will have kids singing about letters and their shapes, the sounds of letters, and words that begin with each letter. Each letter is complemented by a beautiful illustration and a friendly narrator.

Alpha Writer



The innovative and gorgeous Alpha Writer app from Montessorium teaches children to read, write and spell phonetically while composing words and creating stories. In addition to establishing the basics of language, kids can also work up to identifying consonants and vowels as well as other challenges. Check out the developer's Intro to Letters app for even more practice.

Intro to Math



The Intro to Math app is almost distractingly beautiful, with each graphic looking like a work of art (probably one of the reasons it was featured in a recent Apple commercial). It's intended, however, to be much more than that. Your child will learn how to read and write numbers 0 through 9, to sequence numbers, to tell odds from evens, to solve problems and more.

Park Math



The very cute Park Math app will help your child learn how to count up to 50 as a rabbit swings, how to add up ducks as they climb to the top of a slide, how to balance a see-saw by adding and subtracting mice, how to subtract as apples fall from a tree, how to order numbered dogs in sequence, and more.

Abby's Train – Learn Colors!



Utilizing a vibrant palette, Abby's Train – Learn Colors! draws children into a world of adorable characters and interesting challenges. Adults can modify the number of colored objects (up to 10) that

a child has to choose from, as well as the particular colors the child will be learning. Kids focus on placing toys of a particular color into Abby's train in order to earn stickers as rewards.

In Android

ABC Learning Game for Kids



This ABC's learning app is designed to enable your child to learn alphabet letters in an enjoyable and rewarding environment.

The program will come in three separate apps:

- 1. Alphabet letters recognition with animated graphic and sound.
- 2. Alphabet lowercase and uppercase letters tracing for learning how to write without parent's present.
- 3. Game to test your child's learning progress.

Kids Learning



An amazing application for your kids.

This application contains Fantabulous pictures of Animal, Fruit, Flowers, Vegetables etc. Just click on the Match button and see the name of things in Hindi and english, so you can learn Hindi and English names of fruits, vegetables and Animals.

0-10 Numbers Baby Flash Cards



0-10 Numbers Baby Flashcards are fun for babies and toddlers. Numbers Flash cards will entertain and teach them as they learn the numbers, count and hear the words. With quiz and practice modes.

0-10 Numbers Baby Flashcards Language/Sounds: English

Learning Colors for Kids



This is a small app for easy learning of colors. The app says which color shall be pressed. If a wrong color is pressed the app tells which color was pressed. When the correct color was pressed the app goes on with the next color.

Kids Shapes



A hands-on, real-life way for kids to learn shapes.

Wouldn't it be just wonderful if there was a simple game for preschoolers that made learning shapes enjoyable? There is! It's called Kids Preschool Shapes.

Analysis of the Existing Apps

We found that there are many learning application for kids on both Android and iOS platform. All the applications have very rich user interface. In order to compete with these existing application, the user interface of a new application must not only be rich but also user friendly.

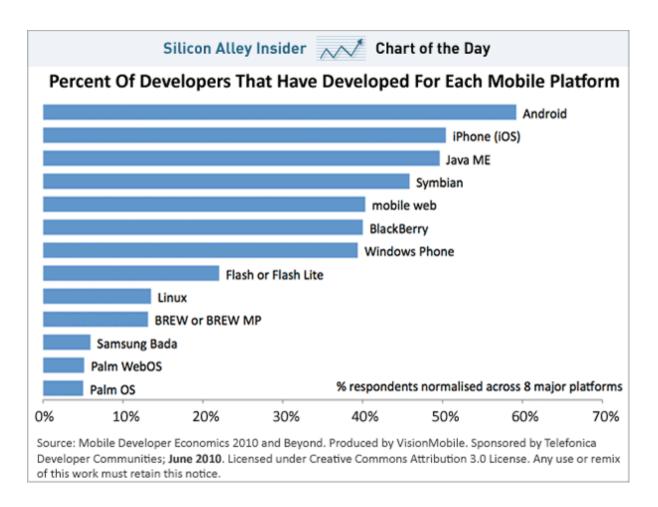
One of the drawbacks with these application is that there is no one application which has all sections that are taught to kids in a pre-school. For eg, there are separate application for alphabets, numbers, colors, fruits and animals etc.

2.3 Platform Analysis

Apple's sizable lead in the world of mobile apps is under attack from Google. Vision Mobile, an analysis and advisory firm, surveyed 401 mobile app developers, and found that developers have more Android experience than Apple iOS.

Visible says Android has passed Apple with developers because Google's developers kit costs less, and because Google has done a good job marketing its open source model. Further, Android phones are selling well now, so there's plenty of customers.

Other than Apple and Android, the rest of the mobile platforms are being left behind. Vision Mobile says, "other mobile platform are lagging far behind Android and Iphone.



Operating System Highlights

Android finished the quarter as the overall leader among the mobile operating systems, accounting for more than half of all smartphone shipments. In addition, Android boasted the longest list of smartphone vendor partners. Samsung was the largest contributor to Android's success, accounting for 45.4% of all Android-based smartphone shipments. But beyond Samsung was a mix of companies retrenching themselves or slowly growing their volumes.

iOS recorded strong year-over-year growth with sustained demand for the iPhone 4S following the holiday quarter and the addition of numerous mobile operators offering the iPhone for the first time. Although end-user demand remains high, the iPhone's popularity brings additional operational pressures for mobile operators through subsidy and data revenue sharing policies.

Symbian posted the largest year-over-year decline, a result driven by Nokia's transition to Windows Phone. But even as Symbian volumes have decreased, there continues to be demand for the OS from the most ardent of users. In addition, Nokia continues to support Symbian, as evidenced by the PureView initiative on the Nokia 808. Still, as Nokia emphasizes Windows Phone, IDC expects further declines for Symbian for the rest of this year.

BlackBerry continued on its downward trajectory as demand for older BlackBerry devices decreased and the market awaits the official release of BB 10 smartphones later this year. In addition, many companies now permit users to bring their own smartphones, allowing competitor operating systems to take away from BlackBerry's market share. Although RIM has not officially released BB 10, initial glimpses of the platform have shown improvement.

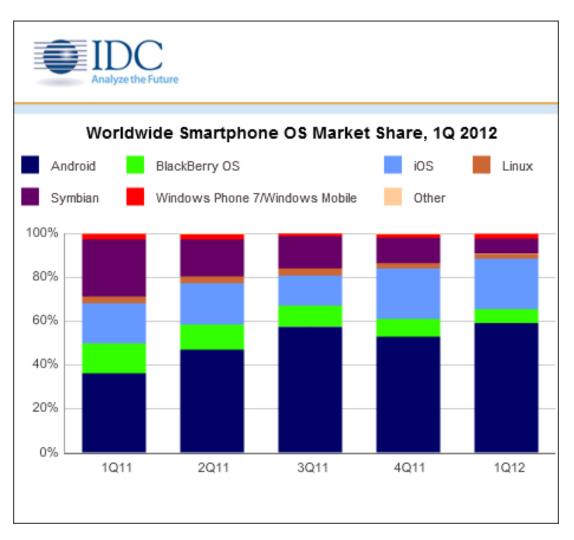
Linux maintained its small presence in the worldwide smartphone market, thanks in large part to Samsung's continued emphasis on bada. By the end of the quarter, Samsung accounted for 81.6% of all Linux-powered smartphones, a 3.6% share gain versus the prior-year period. Other vendors, meanwhile, have been experimenting with Android to drive volume. Still, Linux's fortunes are closely tied to Samsung's strategy, which already encompasses Android, Windows Phone, and later this year, Tizen.

Windows Mobile/Windows Phone has yet to make significant inroads in the worldwide smartphone market, but 2012 should be considered a ramp-up year for Nokia and Microsoft to boost volumes. Until Nokia speeds the cadence of its smartphone releases or more vendors launch their own Windows Phone-powered smartphones, IDC anticipates slow growth for the operating system.

Top Six Smartphone Operating Systems, Shipments, and Market Share, 2012 Q1 (Units in Millions)

Mobile Operating	1Q12 Unit	1Q12 Market	1Q11 Unit	1Q11 Market	Year-over-
System	Shipments	Share	Shipments	Share	Year Change
Android	89.9	59.0%	36.7	36.1%	145.0%

iOS	35.1	23.0%	18.6	18.3%	88.7%
Symbian	10.4	6.8%	26.4	26.0%	-60.6%
BlackBerry OS	9.7	6.4%	13.8	13.6%	-29.7%
Linux	3.5	2.3%	3.2	3.1%	9.4%
Windows Phone 7/Windows Mobile	3.3	2.2%	2.6	2.6%	26.9%
Other	0.4	0.3%	0.3	0.3%	33.3%
Total	152.3	100.0%	101.6	100.0%	49.9%



2.4 Why Android

Android, the world's most popular mobile platform

Android powers hundreds of millions of mobile devices in more than 190 countries around the world. It's the largest installed base of any mobile platform and growing fast—every day another million users power up their Android devices for the first time and start looking for apps, games, and other digital content.

Android gives you a world-class platform for creating apps and games for Android users everywhere, as well as an open marketplace for distributing to them instantly.



Android growth in device activations

Global partnerships and large installed base

Building on the contributions of the open-source Linux community and more than 300 hardware, software, and carrier partners, Android has rapidly become the fastest-growing mobile OS.

Every day more than 1 million new Android devices are activated worldwide.

Android's openness has made it a favorite for consumers and developers alike, driving strong growth in app consumption. Android users download more than 1.5 billion apps and games from Google Play each month.

With it's partners, Android is continuously pushing the boundaries of hardware and software forward to bring new capabilities to users and developers. For developers, it's innovation lets you build powerful, differentiated applications that use the latest mobile technologies.

Powerful development framework

Easily optimize a single binary for phones, tablets, and other devices.

Android gives you everything you need to build best-in-class app experiences. It gives you a single application model that lets you deploy your apps broadly to hundreds of millions of users across a wide range of devices—from phones to tablets and beyond.

Android also gives you tools for creating apps that look great and take advantage of the hardware capabilities available on each device. It automatically adapts your UI to look it's best on each device, while giving you as much control as you want over your UI on different device types.

For example, you can create a single app binary that's optimized for both phone and tablet form factors. You declare your UI in lightweight sets of XML resources, one set for parts of the UI that are common to all form factors and other sets for optimizations specific to phones or tablets. At runtime, Android applies the correct resource sets based on its screen size, density, locale, and so on.

To help you develop efficiently, the Android Developer Tools offer a full Java IDE with advanced features for developing, debugging, and packaging Android apps. Using the IDE, you can develop on any available Android device or create virtual devices that emulate any hardware configuration.

Open marketplace for distributing your apps

Google Play is the premier marketplace for selling and distributing Android apps. When you publish an app on Google Play, you reach the huge installed base of Android. As an open marketplace, Google Play puts you in control of how you sell your products. You can publish whenever you want, as often as you want, and to the customers you want. You can distribute broadly to all markets and devices or focus on specific segments, devices, or ranges of hardware capabilities.

You can monetize in the way that works best for your business—priced or free, with in-app products or subscriptions—for highest engagement and revenues. You also have complete control of the pricing for your apps and in-app products and can set or change prices in any supported currency at any time.

Beyond growing your customer base, Google Play helps you build visibility and engagement across your apps and brand. As your apps rise in popularity, Google Play gives them higher placement in weekly "top" charts and rankings, and for the best apps promotional slots in curated collections.

Life cycle of an android

Activities in the system are managed as an *activity stack*. When a new activity is started, it is placed on the top of the stack and becomes the running activity -- the previous activity always remains below it in the stack, and will not come to the foreground again until the new activity exits.

An activity has essentially four states:

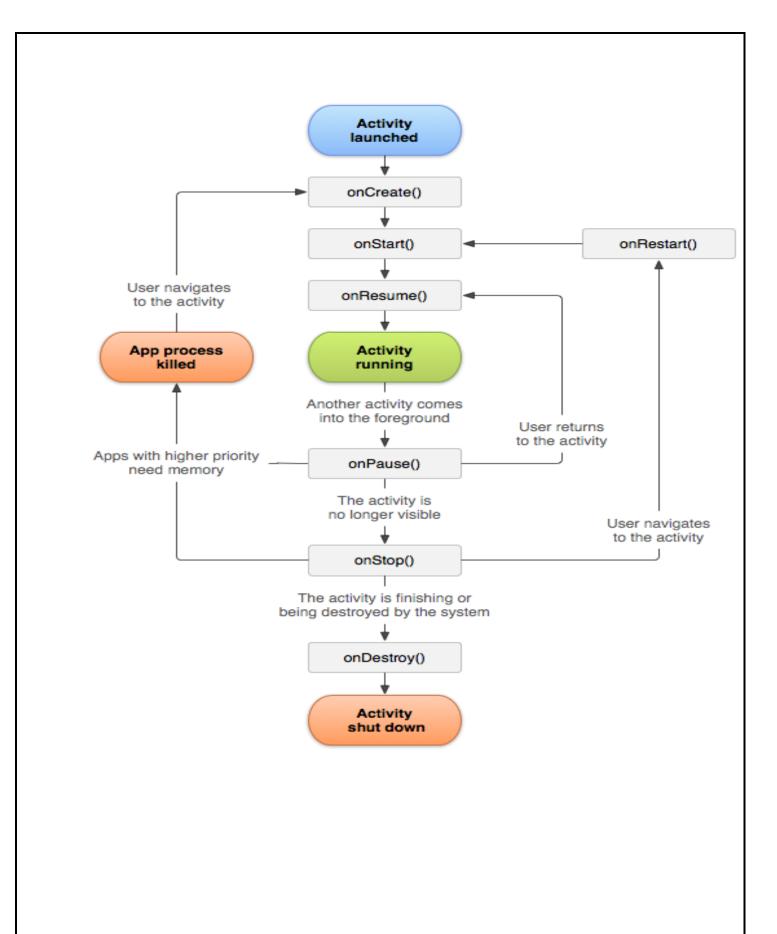
If an activity in the foreground of the screen (at the top of the stack), it is active or running.

If an activity has lost focus but is still visible (that is, a new non-full-sized or transparent activity has focus on top of your activity), it is *paused*. A paused activity is completely alive (it maintains all state and member information and remains attached to the window manager), but can be killed by the system in extreme low memory situations.

If an activity is completely obscured by another activity, it is *stopped*. It still retains all state and member information, however, it is no longer visible to the user so its window is hidden and it will often be killed by the system when memory is needed elsewhere.

If an activity is paused or stopped, the system can drop the activity from memory by either asking it to finish, or simply killing its process. When it is displayed again to the user, it must be completely restarted and restored to its previous state.

The following diagram shows the important state paths of an Activity. The square rectangles represent callback methods you can implement to perform operations when the Activity moves between states. The colored ovals are major states the Activity can be in.



CHAPTER-3

CONTENT OF THE APPLICATION

3.1 Content

Alphabets

- -Introduction to alphabets.
- -Phonics introduction.
- Drawing
- -alphabet song.

Numbers

- -Introduction to numbers
- Phonics introduction.
- Drawing
- -number song
- -adding numbers
- -subtracting numbers

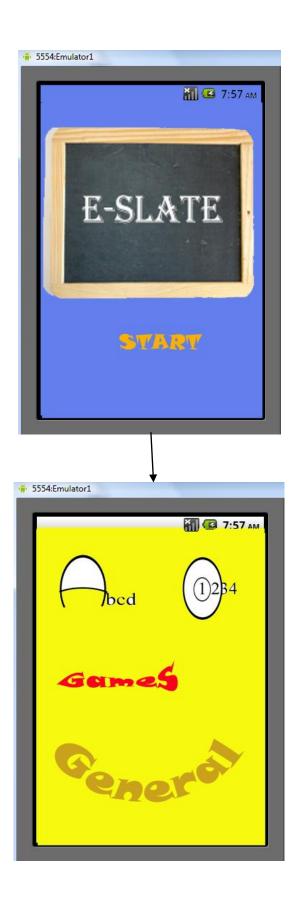
General Awareness

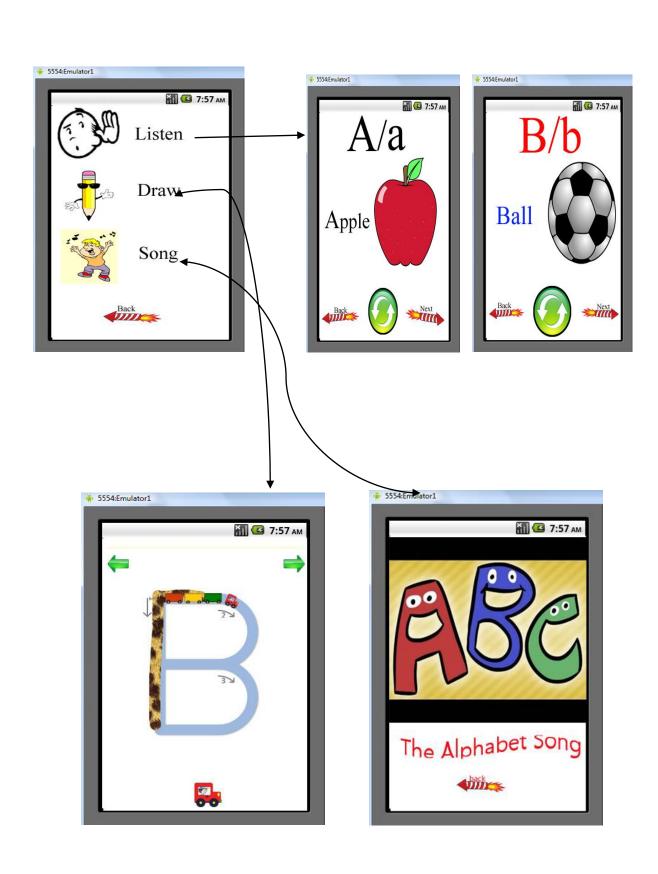
- -Colours
- -Animals
- -Vegetables
- -Fruits
- -Shapes

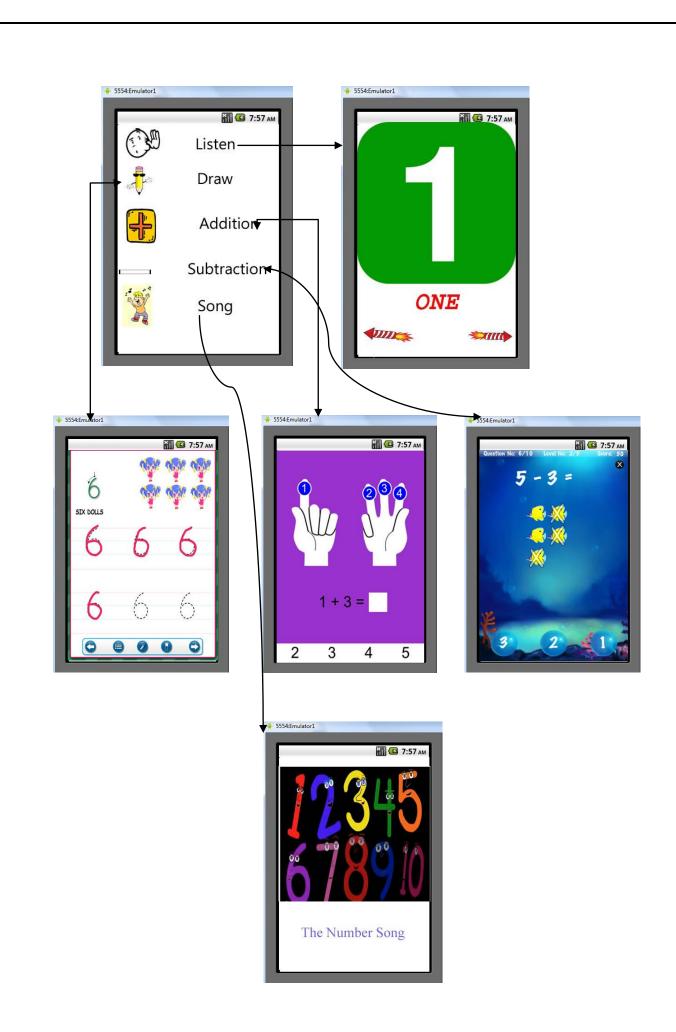
Games

- Alphabetic Games
 - -Arrange in order
 - -Learn to spell
 - -Match capital with lower case alphabets
- Numeric Games
 - -Arrange in order
 - -Find the largest number
 - -Count the objects
 - -Fill in the blanks

3.2 Proposed Layout

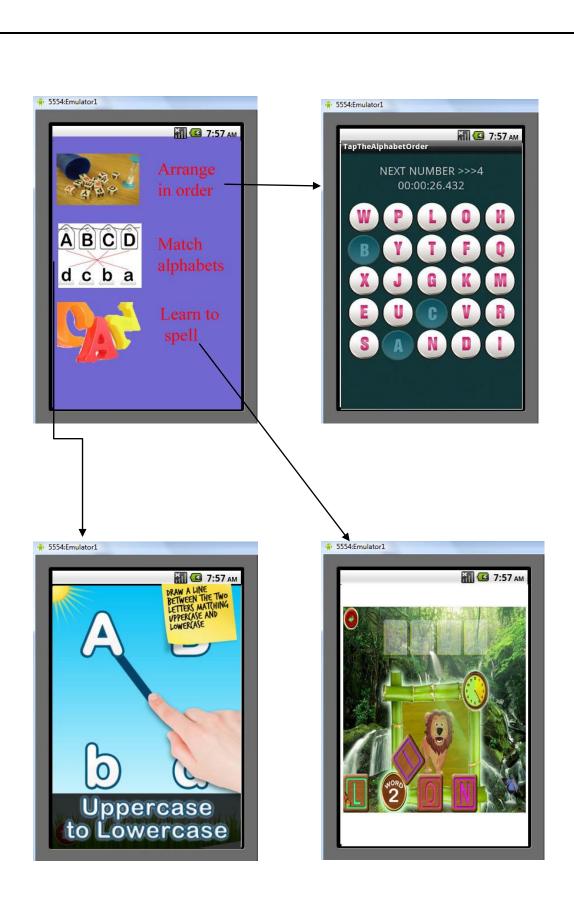


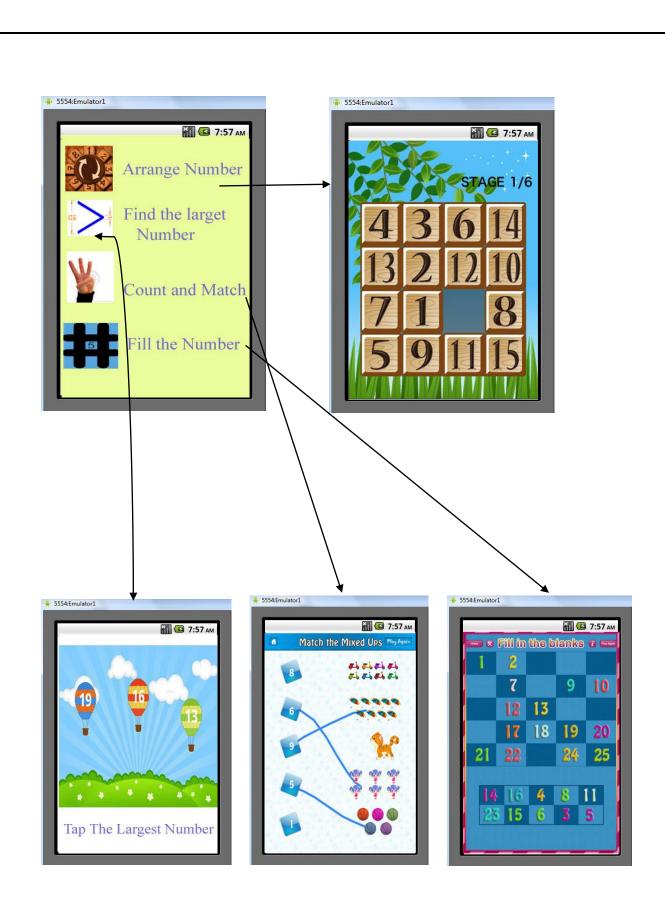


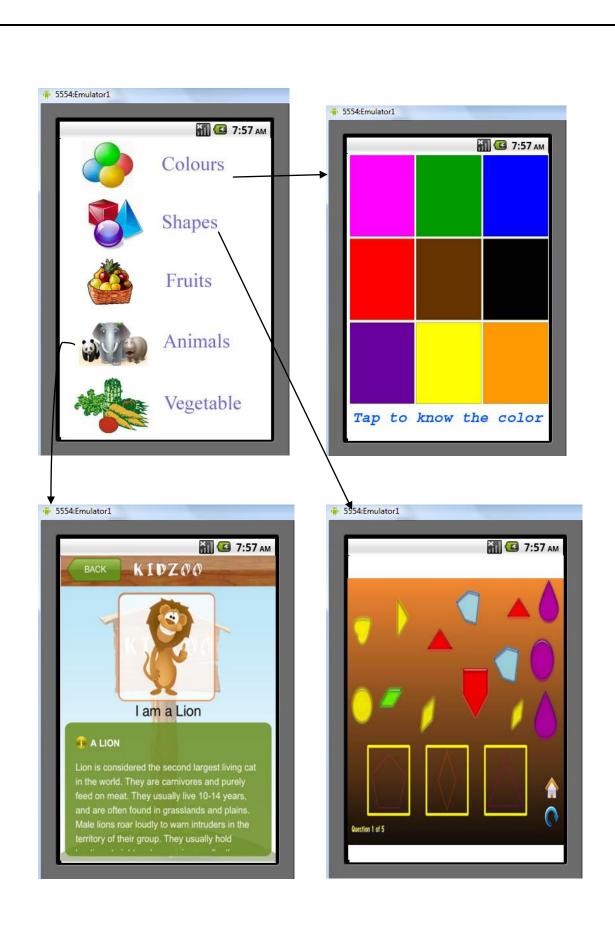
















3.3 Software and Hardware Requirement

Software:

- Java JDK1.6
- Eclipse Juno
- Android SDK

Hardware:

Basic Configurations

✓ Processor: 600MHz ✓ RAM: 256MB or more

Targeted Platform

✓ Android OS version 2.3

CHAPTER-4

CONCLUSION

4.1 Conclusion

"The kids these days are not digital kids. The digital kids were in the '90s. The kids today are mobile, and that's a difference. Digital is the old way of thinking, mobil e is the new way." As parents search for ways to make the most of the travel time during road trips, the answer might be as close as their pocket. A recent study finds that mobile apps can provide an engaging, educational experience for kids. The study findings are particularly relevant as smart phones and mobile devices have become increasingly popular among families and parents are faced with a proliferation of mobile apps designed for kids. According to a recent study, smart phone usage is 12% higher in households with children than other households. "Mobile apps can be a great learning tool in the hands of children." "This research is important in helping to better understand and guide the development of new apps that improve the value of children's screen time with significant educational outcomes. "Parents echo this desire for fun, yet educational, screen time, with more than half of those participating in the study saying that it is "very important" for their child to learn from media they use.

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- http://www.learning-theories.com
- https://play.google.com
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- http://www.gartner.com