

Mastering Data Structure using Android App

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Abstract - This project is developed mainly for the students as well as anyone can use it for learning the subject data structure using an android app. Due to Android platform it becomes very easy for the customers to download and use this application from any location in the world. This app will be available on play store for free. Our project Mastering Data Structure Using Android app is learning tutorial for students. This app covers all topics of data structure. Learning using smart phones and tablets just makes sense; it's a device which is used by almost every student in today's world. To make the learning more interesting we have an aim to develop software which is interactive with the students.

required for learning. our app will cover all the syllabus of the data structure so that the Student or learner will able to study the syllabus and prepare for their examination or test. This app will create excitement in students towards learning. It will allow the user to become tech-savvy. By using this app it will allow the user to reduce the time required for teaching to the students. Students will able to learn, and study whenever and wherever they want to so this is the major objective of our project which will allow the student to learn wherever possible. This is the platform which provides the user to learn effectively and quickly as possible. Student can perform operation like link list, stack, queue, etc. [4]

Keywords: Data Structure, Learning App, Android App, Data Storing, Data Retrieval

1. INTRODUCTION

Learning Android Programming is easy and developing an app in android is cost effective. Any software developer can be able to put Android into extraordinary use, if he thinks outside the box. In computer science data structure is used to organize data and it can be used efficiently. Data structures can be used to implement one or more abstract data types, which specifies some operations that can be performed on data structures and the complexity of those operations. In addition data structure is an implementation of specification provided by an abstract data types. Different kinds of applications require different kind of data structures hence studying data structures is very important [1]. Using data structure we can manage large amount of data efficiently like large databases and internet indexing services. We can design efficient algorithms using efficient data structures [2].Data storing and retrieval of Information can be in both main memories as well as in secondary memory by using data structure. For instance, we have got very less android apps that convey the knowledge of data structure. This scope is huge and massive. So there is a need of developing a learning app for education purpose therefore we are interested in developing such kind of application.

The main motive is to minimize the usage of the book at least for DS in short we can say that we can minimize time

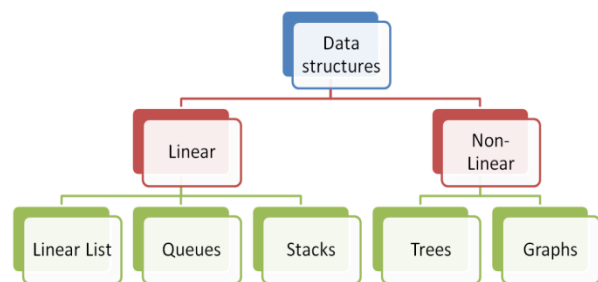


Fig -1: Data Structure Types

As shown in above figure1 the data structure types it will be included in our project student can perform operations on the given topics

2. LITERATURE SURVEY

2.1. Existing system

Some learning apps are better than others but they achieve some goals which are different from the others. The existing system of data structure learning app contains just only concept related to the data structure and examples related to it. Other than concepts those apps contains programs and algorithm along with diagrams.

3. PROPOSED SYSTEM

This proposed system is to overcome all the drawbacks of those existing systems and a very neat and appropriate project to be provided to the user. This system contains operations performed using graphics. It will also contain video sessions related to data structure as well as student can give a small test related to a particular topic of the subject data structure.

Table -1: Difference between existing and proposed System

EXISTING SYSTEM	PROPOSED SYSTEM
Existing System Does Not Contains Operations	Proposed System Contains Operations
Existing System Contains Only Theory	Proposed System Contains Theory As Well As Diagrams
The Existing System Does Not Contain Algorithms Related To The Topic	Proposed System Contains Algorithm Related To Each Topic
The Existing System Does Not Contain Program	Proposed System Contains Program As Well As Their Output
The Existing System Does Not Have Videos	Proposed System Contains Videos Related To Data Structure
The Existing System Does Not Contain Test Module	Proposed System Includes Test And Display Result

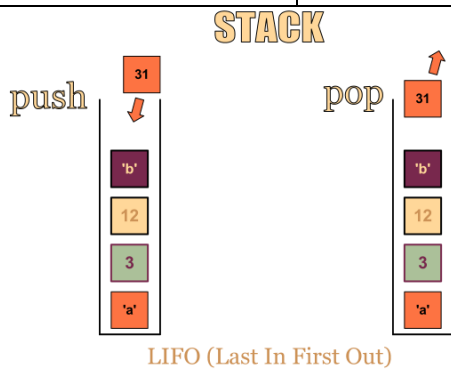


Fig- 2: Stack Operation

Figure2 shows stack operation which shows push and pop operation in a stack . the above figure is an example of how push and pop operations will be performed in a stack in our app.

Following are the modules of our proposed system:

- **Module1 Operations-** In this module we will show the basic operations of the data structure using graphics for example if we consider stack it will perform operations like push and pop. it will actually show how the stack works.
- **Module2 Concepts -** In this module we will display the all the concepts regarding the data structure

along with examples so that the student can understand the concepts clearly.

- **Module 3 Programs-** This module will contain all the programs related to data structure along with output.
- **Module 4 Algorithm -**This module will help the students to get the basic ideas about the algorithms.
- **Module 5 Exam-** In this module there will be exams based in the topics of the data structure where user can choose a particular topic and gave a small exam on it and the result will be displayed on the screen after the exam is over.

4. FUTURE SCOPE:

In future our project can be extended by including some new features like for example, if a student is unable to attend a lecture he/ she will be able to take benefit of this app by downloading the lectures which he/she missed. Another feature can be added like a blog for queries where a student can write queries as well as get a desired feedback from the experts. The student can also have a real time interaction with the experts to solve their queries.

3. CONCLUSIONS

The learning data structure using graphics is actually an implementation for engineering student to learn the data structure using this app anywhere anytime. By using this app, students no need to carry their books everywhere they can just learn the concepts of data structure with a single click. Nowadays education has become necessary for the students but they do not take interest in learning. this app will help them to learn as well as it will create interest in them towards learning data structure which will be helpful for our them to get the idea about what exactly is the data structure

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