



TECHNO INDIA NJR
INSTITUTE OF TECHNOLOGY

EDUCATIONAL ANDROID APPLICATION

A

Major Project Report

Submitted

In partial fulfillment

For the award of the Degree of

BACHELOR OF TECHNOLOGY

In the Department of Computer science and Engineering

Submitted by:

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TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY



TECHNO INDIA NJR
INSTITUTE OF TECHNOLOGY

CERTIFICATE

This is to certify that this project report “**Educational Android Application**” is the work of “**Aditi Jain, Tejasvini Mehta, Vрати Bhandari**” who have carried out the project work under my supervision. I approve this project for submission of the Bachelor of Technology in the **Department of Computer Science and Engineering, Techno India NJR Institute of Technology**, affiliated to Rajasthan Technical University, Kota.

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ABSTRACT

1. Purpose

1.1. Introduction

This Software Requirements Specification provides a complete description of all the functions and specifications of the Educational Android Application.

The main objective of this project is to raise awareness about menstruation and the menstrual cycle of young girls in rural areas and to educate them about the use of sanitary napkins instead of unhygienic products which affects their health a lot in different ways. It is a common problem faced by every girl and women and girls from rural areas do not want to talk and learn about it. This application provides a platform to learn and educate girls about this issue.

1.2. Scope

The scope of this android application is to spread awareness about menstruation hygiene among remote area adolescent girls. The users of this application are girls and women of villages who are not aware about the ways to stay healthy and hygienic during menstruation. This application will provide a means to interact with the girls and women facing the problem.

2. Document overview

The remainder of this document is 8 chapters, the first providing an introduction to the project. It lists all the functions performed by the system. The second chapter consists of software requirements specification. The third chapter provides details about system analysis and design. The fourth chapter gives data dictionary information. The fifth chapter consists of snapshots of the complete project. The sixth chapter gives testing for the project. The seventh chapter tells about the conclusion and future enhancements of the project. The final chapter concerns the bibliography.

ACKNOWLEDGEMENT

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I also wish to express my indebtedness to my parents as well as my family members whose blessings and support always helped me to face the challenges ahead.

At the end I would like to express my sincere thanks to all my friends and others who helped me directly or indirectly during this project work.

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28/05/2022

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List of Symbols

Term	Definition
User	The user who has the permission to insert or update category etc. in the database.
Field	Admin stored in the Database
XML	Extensible Markup Language
QA	Quality assurance
SCMP	Software Configuration Management Plan
SDD	Software Design Document
JDK	JAVA Development Kit
SRS	Software Requirements Specification
Android	an open-source operating system used for smartphones

CHAPTER – I
INTRODUCTION

Introduction

1. Purpose

1.1.1 Introduction

This Software Requirements Specification provides a complete description of all the functions and specifications of the Educational Android Application.

The main objective of this project is to raise awareness about menstruation and the menstrual cycle of young girls in rural areas and to educate them about the use of sanitary napkins instead of unhygienic products which affects their health a lot in different ways.

1.1.2 Scope

The scope of this android application is to spread awareness about menstruation hygiene among remote area adolescent girls. The users of this

application are girls of villages who are not aware about the ways to stay healthy and hygienic during menstruation.

1.1.3. References

[Bruade] The principal source of textbook material is “Software Engineering: An Object-Oriented Perspective” by Eric J. Bruade (Wiley 2001).

1.1.4. Document overview

The remainder of this document is 8 chapters, the first providing an introduction to the project. It lists all the functions performed by the system. The second chapter consists of software requirements specification. The third chapter provides details about system analysis and design. The fourth chapter gives data dictionary information. The fifth chapter consists of snapshots of the complete project. The sixth chapter gives testing for the project. The seventh chapter tells about the conclusion and future enhancements of the project. The final chapter concerns the bibliography.

This document is meant for describing all the features and procedures that were followed while developing the system. This document specially mentions the details of the project, how it was developed, the primary requirement, as well as various features and functionalities of the project, and the procedures followed in achieving these objectives.

This Android Application forms the lifeline of the Educational Institutes to the functioning of the Test and Modules. It is very essential for an organization to handle the users and their data. It is very useful for an

organization to provide education to its users continuously for their development. This system is helpful for conducting (MC) Multiple Choice Tests to check the knowledge which can be conducted in the application as well as for modules and provides immediate results saving precious time.

The IT initiatives have encouraged various Organizations to develop systems to facilitate their day to day operations. The Educational Android Application will include various Modules and subjects for learning about Menstruation. This system helps in providing knowledge quickly and can thus help in saving time and the operations will be carried out efficiently.

With effective use, any Organization can apply the “Educational android Application” for conducting quick learning and getting better results in less time.

1.2 Overall description

Educational Android Application is designed for Organizations like NGO's, and Schools to conduct learnings of their users on a regular basis. The system handles all the operations and generates a sense of knowledge as soon as the test is completed which saves precious time. The existing system is weak when it comes to surprise test organizations whereas this system can make it possible very easily.

1.2.1. Functional requirements definitions

Functional Requirements are those that refer to the functionality of the system, i.e., what services it will provide to the user. Nonfunctional (supplementary) requirements pertain to other information needed to produce the correct system and are detailed separately.

1.1.1. Use cases

This system will be used in Six User Modules, YouTube Links, and Tests. As all of these have different requirements the modules are designed to meet their needs and avoid any type of confusion. The Uses of the application are described below.

[1] User can do the following functions:-

- Register(Add Details)
- Login to the account
- Learn from PDF
- Learn from Videos
- Check Progress
- About Organization
- LogOut

[2] User can do the following functions in the Student Module:

- Give Test
- View Result

[3] User Can do the following in Registration:

- Edit User Details

- Provide Pictures
- Check Status

1.1.2. User characteristics

The user should be familiar with Hindi Language. The user should be familiar with the SmartPhone.

1.1.3. Constraints

There is no maintainability of backup so availability will get affected.
Limited to Android.

Real-life credit card validation and Banking system is not implemented.
No multilingual support(Only Hindi).

CHAPTER – II

Software Requirement Specification

Software Requirement Specification

2.1. Purpose

2.1.1. Introduction

This Software Requirements Specification provides a complete description of all the functions and specifications of the Educational Android Application.

The main objective of this application is to efficiently evaluate the user thoroughly through a fully automated system that not only saves a lot of time but also gives fast results.

2.1.2. Scope

Scope of this project is very broad in terms of other manually Learning Applications. Few of them are:-

- This can be used in organizations as well as in the corporate world.
- Can be used anywhere any time as it is a mobile based application.

- No restriction that anyone has to be present when the user takes the test.
- Users should know only Hindi, no requirement of English or other languages.

2.1.3 Glossary

Table 2.1

Term	Definition
User	The user who has the permission to register or login etc. in the application.
Field	Data stored in the Database
XML	Extensible Markup Language

QA	Quality assurance
----	-------------------

SCMP	Software Configuration Management Plan
SDD	Software Design Document
JDK	JAVA Development Kit
SRS	Software Requirements Specification
Android	an open-source operating system used for smartphones

2.1.2. References

[Bruade] The principal source of textbook material is “Software Engineering: An Object- Oriented Perspective” by Eric J. Bruade (Wiley 2001).

CHAPTER – III
System Analysis and Design

System Analysis and Design

3.1. Study & Weaknesses of Current System

The Current system of application is highly complicated and expensive. Whenever tests are to be conducted there are various tasks that have to be done again and again.

- Setting questions in Hindi
- Checking for errors
- Scheduling Answers
- Checking Answers
- Preparing Marks
- Solving Question Papers

Weaknesses in Current System

The current system is as mentioned earlier very complicated and expensive as compared to the new system. It also wastes the precious time of the faculties which can then be used in solving girls queries and helping them improvise.

As Faculties are humans and so prone to errors, there can be mistakes in checking answer papers, calculating marks and the result charts

prepared may also have these errors. Only preventive measures are taking a double check to ensure these errors don't happen which would again require extra time and may also result in a mentally tired faculty. After the test has been conducted the faculty has to provide solutions to the questions asked in the exam. It would mean extra time and extra work for the faculty and also result in extra expenses of stationary. Thus, the current system is in every way ineffective for conducting examinations in these days when time is more costly than anything and they also pose a threat to the environment when we are amidst a global crisis and in the need of a Green Revolution.

3.2. Requirements of New System

3.2.1. User Requirements

The User requirements for the new system are to make the system fast, flexible, less prone to errors and reduce expenses and save time.

- Time can be saved in scheduling the faculty's time.
- A system that can automate the checking of answers which are pre-stored so that results can be generated as soon as the student gives the exam.
- A facility that can generate result charts as per required without manual interference for providing how a task is to be done instead only asking what is to be done.
- The system should have user and Faculty records on hand which can be used as per required only by authorized personnel.

- Finally, it should prove cost effective as compared to the current system.

3.3. Feasibility Study

A key part of the preliminary investigation that reviews anticipated costs and benefits and recommends a course of action based on operational, technical, economic, and time factors. The purpose of the study is to determine if the system's request should proceed further.

3.4. Features of the New System.

The new system has been designed as per the user requirements so as to fulfill almost all them.

Quick Scheduling

Exams can be created very quickly as compared to the existing system as it allows the use of previously entered questions to be used again. It saves time required to get the question papers printed and distributed before the students are allowed to appear for the examination. Questions entered once can be accessed by students as soon as they login to their account.

Immediate Results and Solutions

One of the most important drawbacks of the current system is that the faculties are required to check the answer papers which is again a lengthy process and prone to errors. The new system will generate the result as soon as the test is finished by the user and will also store it in

the database for further usage. The solution is also available as soon as the questions are inserted in the database.

Easy to Store and Retrieve Information

The new system makes it easy to store and retrieve information as required and does not involve storing information in separate sheets or papers. It thus saves data management problems faced in the current system as it has a Database Management System of its own which allows 33 reports to be generated when needed.

Cost Effective

One of the main reasons for the new system is its cost effectiveness. It saves the amount spent on stationary as well as overall cost of conducting an examination which also involves paying supervisors, paper checkers, question paper printers etc.

CHAPTER – IV
DATA DICTIONARY

DATA DICTIONARY

A data dictionary is a catalog-a-repository of the elements in a system. As the name suggests, their elements center on data and the way they are structured to meet user requirements and organization needs. In a data dictionary, you will find a list of all the elements composing the data flowing through a system. The major elements are data flows, data stores, and processes. The data dictionary stores details and descriptions of these elements.

If analysis wants to know characters are in a data item by what other names it is referenced in the system, where it is referenced in the system, or where it is issued in the system, they should be able to find the answers in issued in the system, they should be able to find the answer in the properly developed data dictionary.

The Dictionary contains two types of descriptions for the data following through the system.

1. Data Elements

The most fundamental data is the elements. They are building blocks for all other data in the system. Data elements are also alternatively known as fields, data items or elementary items.

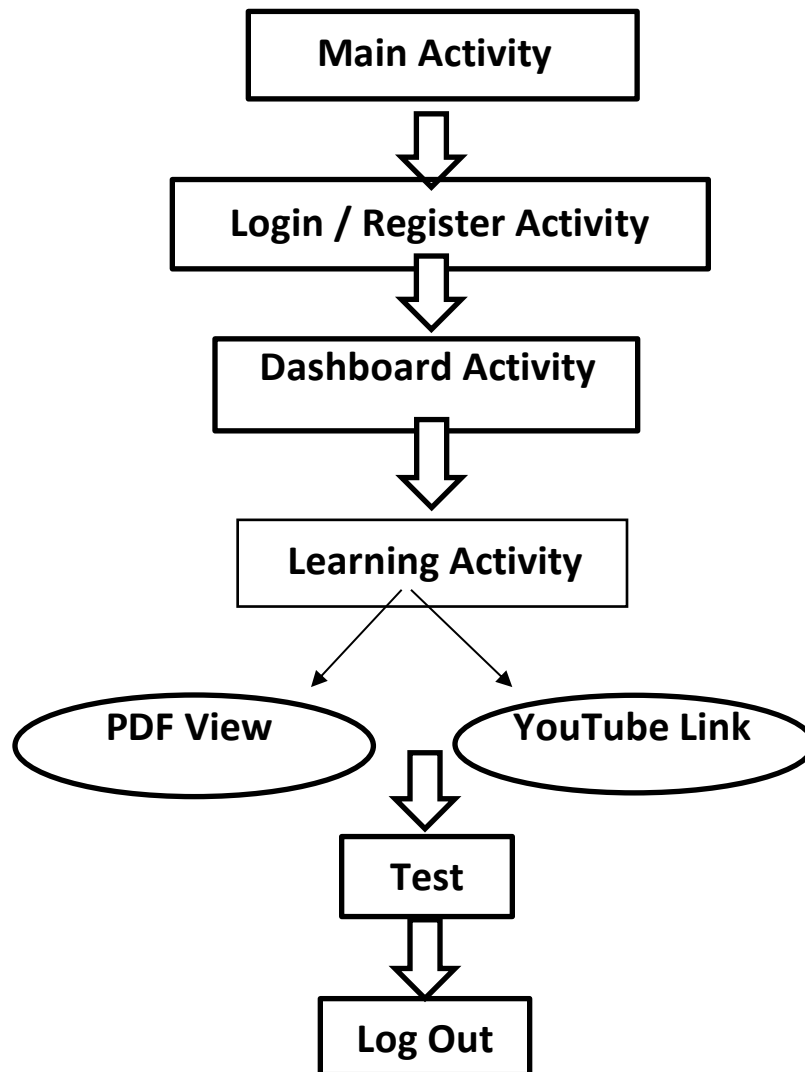
2. Data Structure

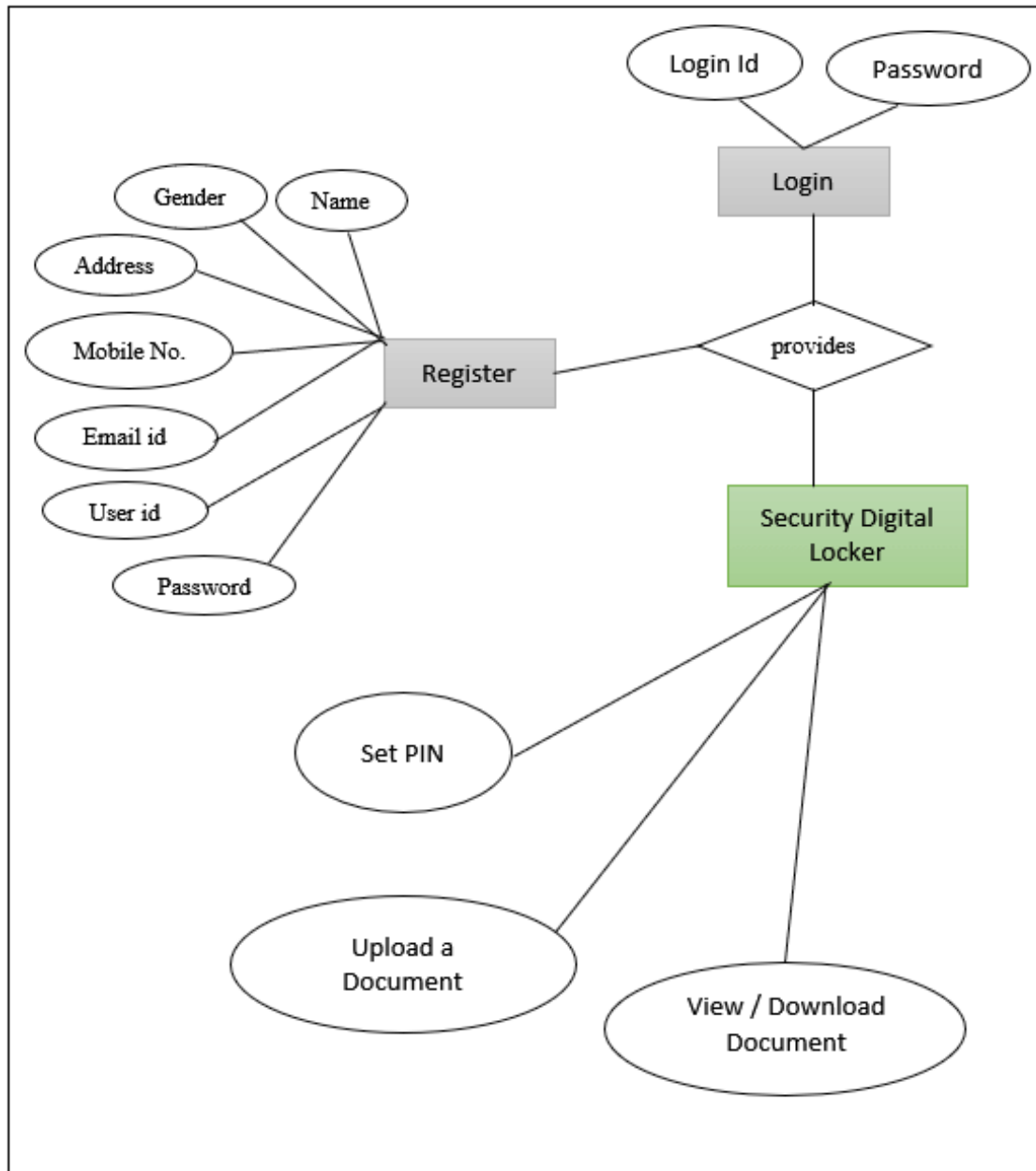
A data structure is a set of items that are related to one another and describe components in the system.

3. Table Details

Field Name	Description	Constraints	Size	Data Type
Username	Name of the user		50	Text
Mobile Number	Act as password		50	Number

4. E-R Diagram





CHAPTER – V
SCREEN SHOTS

Vardaan



स्वागत है bhoomik

प्रशिक्षण मॉड्यूल

जागरूकता अभियान

स्वच्छता किट



SHRUSHTI

jumig[®]



कोरोनो वायरस क्या है और इससे कैसे सुरक्षित रहें



प्रशिक्षण लेख



प्रशिक्षण वीडियो

Module: 1

माहवारी क्या है?



प्रशिक्षण लेख



प्रशिक्षण वीडियो

Test

Module: 2

माहवारी से संबंधित लक्षण और समस्याओं



प्रशिक्षण लेख



प्रशिक्षण वीडियो

Test

Module: 3



Test

Module: 5



सैनिटरी नैपकिन के उपयोग की
उपयोगिता और लाभ



प्रशिक्षण लेख



प्रशिक्षण वीडियो

Test

Module: 6



माहवारी संबंधित भ्रांतियां और उनके सच



प्रशिक्षण लेख



प्रशिक्षण वीडियो

Test

अधिक जानकारी के लिए निम्नलिखित लिंक
पर क्लिक करें

<https://youtu.be/yBe6tAVjVoU>

<https://youtu.be/1Yofu23jxhE>

2:48

Voi LTE 77%



Vardaan

जाति

राजस्व गाँव

ग्राम पंचायत

पंचायत समिति

जिला

उदयपुर

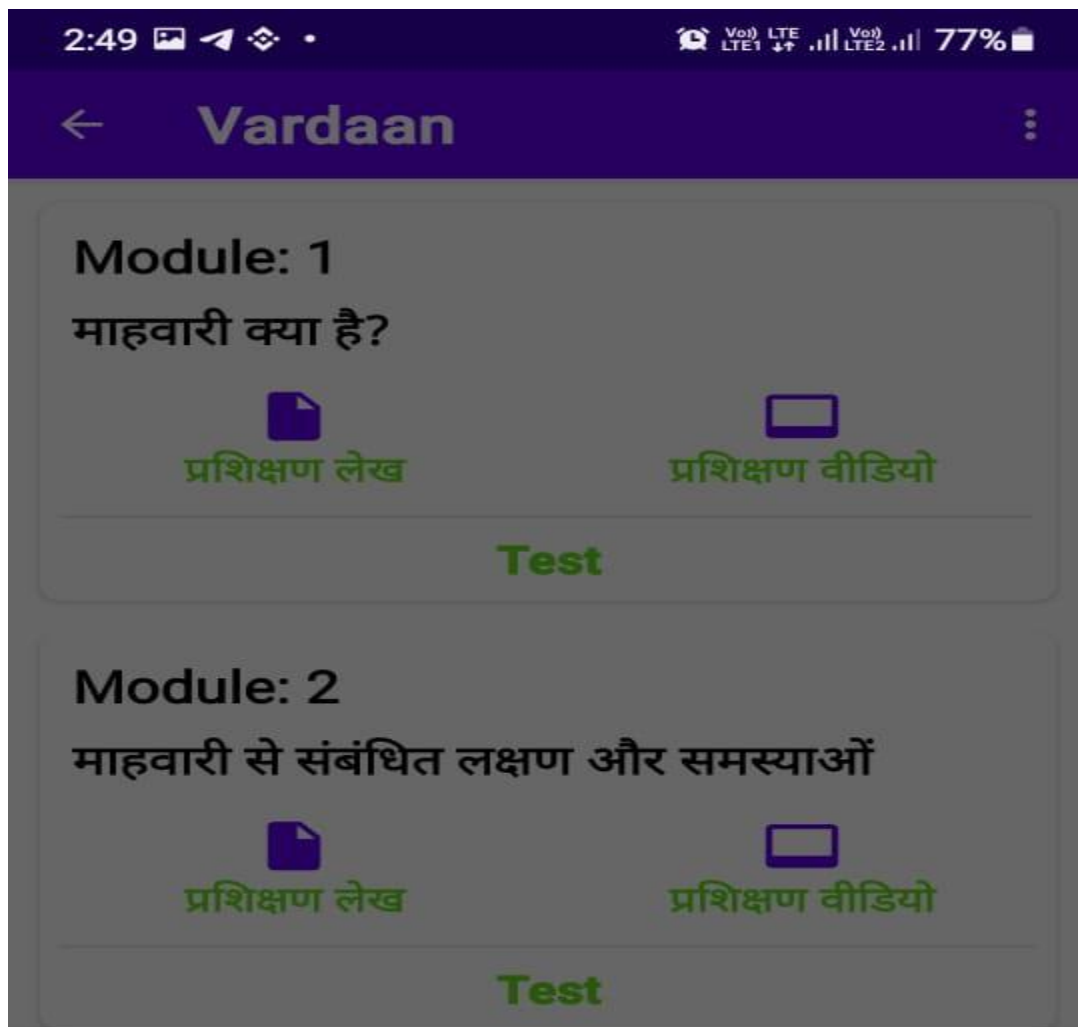


Pick from Gallery



Capture from Camera

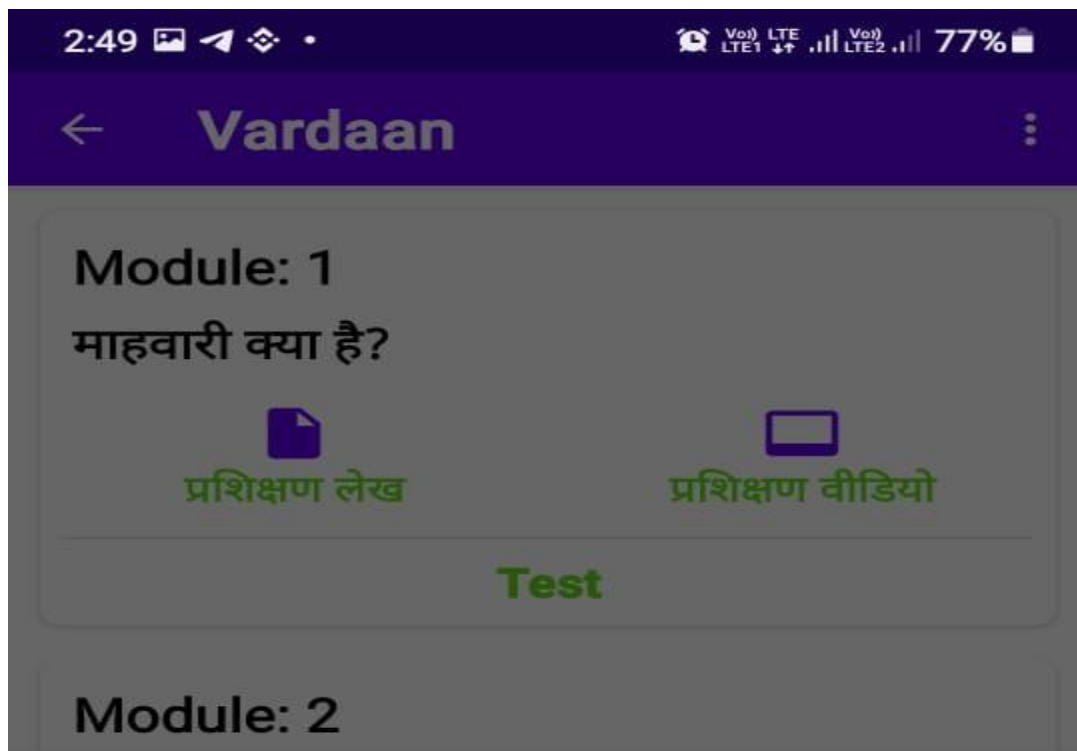




- सभी प्रश्नों के उत्तर देना अनिवार्य है।
- गलत उत्तर देने पर दोबारा विकल्प चुनें।
- अगर आपको उत्तर नहीं पता तो मॉड्यूल दोबारा देखें।

START TEST





माहवारी क्या है?

- शारीरिक विकास के साथ शरीर में होने वाले हार्मोनल
- ☐ बदलाव के कारण गर्भाशय से रक्त स्राव को माहवारी कहते हैं।
 - ☐ बच्चों में होने वाला रोग
 - ☒ महिला के चेहरे से संबंधित
 - ☐ एक गंभीर बीमारी

1/5

SUBMIT



2:48

Vol LTE 77%

Vardaan

स्वागत है Naresh
Madawat

प्रशिक्षण मॉड्यूल

Logout

कृपया पुष्टि करने के लिए नीचे अपना नाम
लिखें

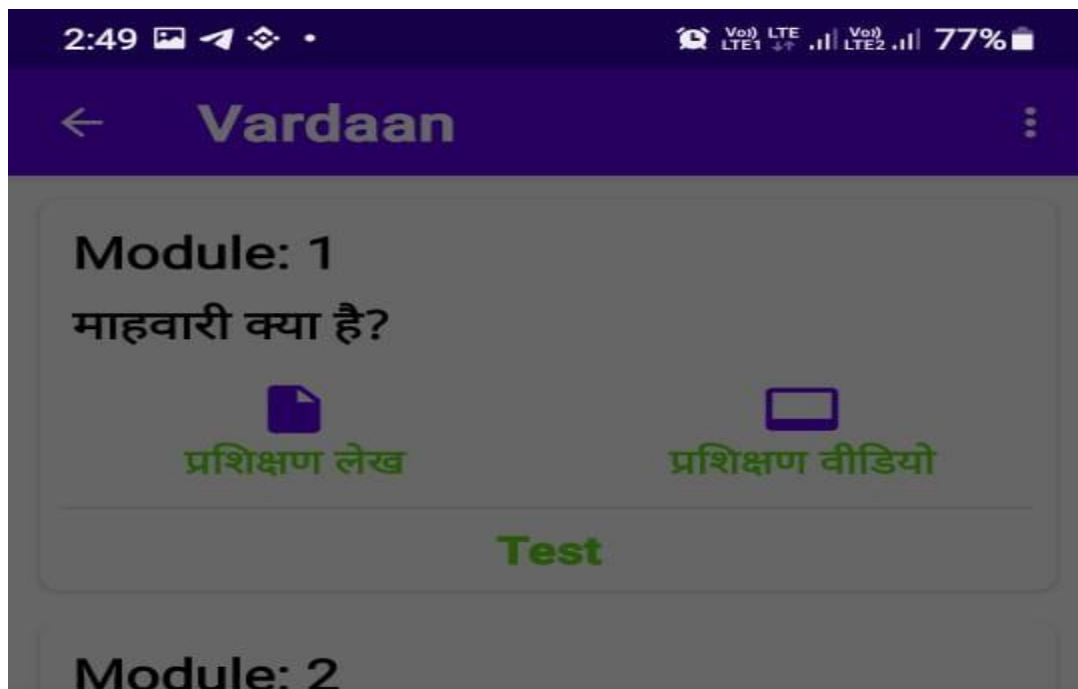
CANCEL

LOGOUT



SHRUSHTI

jumig®



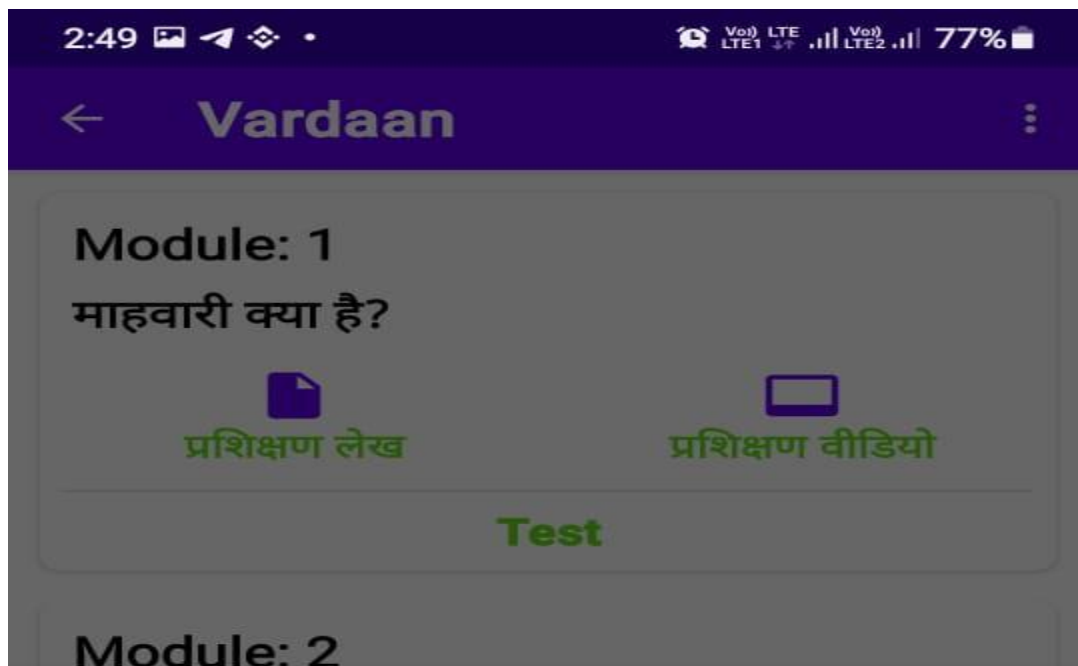
माहवारी के समय किस तरह का भोजन करना चाहिए?

- ☐ फल- हरी सब्जियां
- ☒ दूध का उपयोग
- ☐ चावल- रोटी
- ☐ उपर्युक्त सभी सभी

1/5

SUBMIT





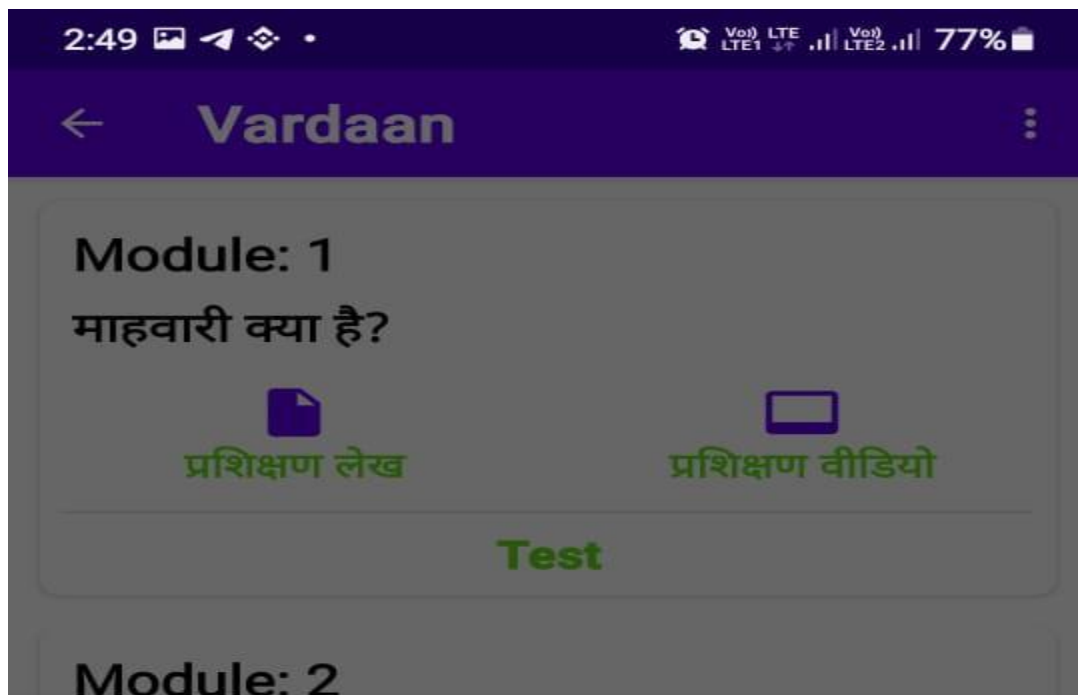
माहवारी के समय किस तरह का भोजन करना चाहिए?

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- ☐ उपर्युक्त सभी सभी

1/5

SUBMIT





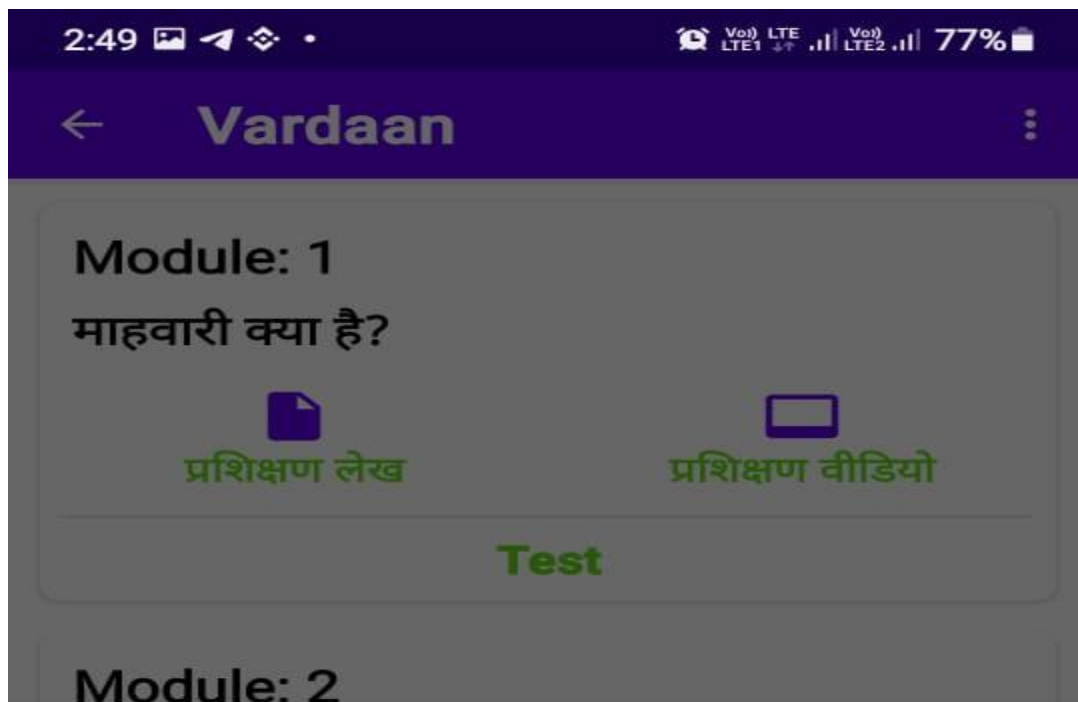
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- ☐ उपर्युक्त सभी सभी

1/5

SUBMIT





माहवारी के समय किस तरह का भोजन करना चाहिए?

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- ☐ दूध का उपयोग
- ☐ चावल- रोटी

☒ उपर्युक्त सभी सभी

1/5

SUBMIT



CHAPTER – VI
TESTING

Testing

Testing Methodology

Companies rely on software more than ever to provide and manage information with strategic and operational importance and to provide key decision support. Rising customer expectations for fault-free, requirements-exact software have increased awareness of the importance of software testing as a critical activity.

We begin the testing process by developing a comprehensive plan to test the general functionality and special features on a variety of platform combinations. Strict quality control procedures are used. The process verifies that the application meets the requirements specified in the system requirements document and is bug free. At the end of each testing day, we prepare a summary of completed and failed tests. Applications are not allowed to launch until all identified problems are fixed. A report is prepared at the end of testing to show exactly what was tested and to list the final outcomes.

Our software testing methodology is applied in three distinct phases: unit testing, system testing, and acceptance testing.

Unit Testing: The programmers conduct unit testing during the development phase. Programmers can test their specific functionality individually or with other units. However, unit testing is designed to test small pieces of functionality rather than the system as a whole. This allows the programmers

to conduct the first round of testing to eliminate bugs before they reach the testing staff. In unit testing the analyst tests the programs making up a system. For this reason, unit testing is sometimes called program testing.

Unit testing gives stress on the

modules independently of one another, to find errors. This helps the tester in detecting errors in coding and logic that are contained within that module alone. The errors resulting from the interaction between modules are initially avoided.

For example, a hotel information system consists of modules to handle reservations; guest checking and checkout; restaurant, room service and miscellaneous charges; convention activities; and accounts receivable billing. For each, it provides the ability to enter, modify or retrieve data and respond to different types of inquiries or print reports. The test cases needed for unit-testing should exercise each condition and option. Unit testing can be performed from the bottom up, starting with smallest and lowest-level modules and proceeding one at a time. For each module in bottom-up testing a short program is used to execute the module and provides the needed data, so that the module is asked to perform the way it will when embedded within the larger system.

System Testing: The objective of system testing is to ensure that all individual programs are working as expected, that the programs link together to meet the requirements specified and to ensure that the computer system and the associated clerical and other procedures work together. The initial phase of system testing is the responsibility of the analyst who determines what conditions are to be tested, generates test data, produces a schedule of expected results, runs the tests and compares the computer produced results with the expected results with the expected results. The analyst may

also be involved in procedures testing. When the analyst is satisfied that the system is working properly, he hands it over to the users for testing. The importance of system testing by the user must be stressed. Ultimately it is the user must verify the system and give the go-ahead. During testing, the system is used experimentally to ensure that the software does not fail, i.e., that it will run according to its specifications and in the way users expect it to. Special test data is input for processing (test plan) and the results are examined to locate unexpected results. A limited number of users may also be allowed to use the system so analysts can see whether they try to use it in unexpected ways. It is preferable to find these surprises before the organization implements the system and depends on it. In many organizations, testing is performed by persons other than those who write the original programs.

Using persons who do not know how certain parts were designed or programmed ensures more complete and unbiased testing and more reliable software.

The system is tested as a complete, integrated system. System testing first occurs in the development environment but eventually is conducted in the production environment. Functionality and performance testing are designed to catch bugs in the system, unexpected results, or other ways in which the system does not meet the stated requirements. The testers create detailed scenarios to test the strength and limits of the system, trying to break it if possible. Editorial reviews not only correct typographical and grammatical errors but also improve the system's overall usability by ensuring that on-screen language is clear and helpful to users. Accessibility reviews ensure that the system is accessible to users with disabilities.

System testing consists of the following five steps:

- i. Program testing
- ii. String testing
- iii. System testing
- iv. System documentation
- v. User acceptance testing

Program Testing

A program represents the logical elements of a system. For a program to run satisfactorily, it must compile and test data correctly and tie in properly with other programs. It is the responsibility of a programmer to have an error free program. At The time of testing the system, there exist two types of errors that should be checked. These errors are syntax and logic. A syntax error is a program statement that violates one or more rules of the language in which it is written. An improperly defined field dimension or omitted key words are common syntax errors.

These errors are shown through error messages generated by the computer. A logic error, on the other hand, deals with incorrect data fields out of range items, and invalid combinations. Since the logical errors are not detected by the compiler, the programmer must examine the output carefully to detect them. When a program is tested, the actual output is compared with the expected output. When there is a discrepancy, the sequence of the instructions must be traced to determine the problem. The process is facilitated by breaking the program down into self-contained portions, each of which can be checked at certain key points.

String Testing

Programs are invariably related to one another and interact in a total system. Each program is tested to see whether it conforms to related programs in the system. Each part of the system is tested against the entire module with both test and live data before the whole system is ready to be tested.

System Testing

System testing is designed to uncover weaknesses that were not found in earlier tests. This includes forced system failure and validation of total system as it will be implemented by its user in the operational environment. Under this testing, generally we Take low volumes of transactions based on live data. This volume is increased until the maximum level for each transaction type is reached. The total system is also tested for recovery and fallback after various major failures to ensure that no data are lost during the emergency. All this is done with the old system still in operation. When we see that the proposed system is successful in the test, the old system is discontinued.

System Documentation

All design and test documentation should be well prepared and kept in the library for future reference. The library is the central location for maintenance of the new system.

User Acceptance Testing

An acceptance test has the objective of selling the user on the validity and reliability of the system. It verifies that the system's procedures operate to system specifications and that the integrity of important data is maintained. Performance of an acceptance test is actually the user's show. User motivation is very important for the successful performance of the system. After that, a comprehensive test report is prepared. This report shows the system's tolerance, performance range, error rate and accuracy.

Table 6.1 Test Report with test data

TEST REPORT WITH TEST DATA

(To be filled by System Analyst/Programmer)

Project Name: Educational Android Application

A.	INTERFACE TESTING 1) User-friendliness 2) Consistent menus	OK NA
B.	CONTROL FLOW TESTING 1) IF-THEN-ELSE 2) DO WHILE 3) CASE-SWITCH	OK OK OK
C.	VALIDATION TESTING 1) Check for improper or inconsistent typing 2) Check for erroneous initialization or default values 3) Check for incorrect variable names 4) Check for inconsistent Data Types 5) Check for relational/arithmetic operators	OK OK OK OK OK
D.	DATA INTEGRITY/SECURITY TESTING 1) Data Insertion/ Deletion/ Updating 2) Boundary condition (Underflow, Overflow Exception) 3) Check for unauthorized access of data 4) Check for data availability	OK OK OK OK
E.	EFFICIENCY TESTING 1) Throughput of the system 2) Response time of the system 3) Online disk storage required by the system 4) Primary memory required by the system	OK OK OK OK
F.	ERROR HANDLING ROUTINES 1) Error description are intelligent/ understandable 2) Error recovery is smooth 3) All error handling routines are tested	OK OK OK

	and executed at least once	
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CONCLUSION AND FUTURE ENHANCEMENTS

7.1 Limitations:

The new system has been designed to meet almost all of the user requirements but it too has certain limitations some of which can be enhanced in the future enhancements or updates

7.2 Future enhancements:

Enhancements are the prerequisite for development of a system. Every existing system has proposed enhancements which make it better and easier to use and more secure. The enhancements that have been proposed for this system are listed here.

7.2.1 Availability on Different Platforms :

The new system will be available on different platforms such Mac, ios, Linux, etc.

7.3 Conclusion:

It is an android application for learning purpose. By the development of this Android application in Android Studio, we will get a clear understanding of overall process of the system. This design of this Android Application based on Android system requires elaborate design of all activities, by adopting ANDROID STUDIO 4.0.1 + Java language as technical support of this system, with the Android plug-in tools, and combination of Latest Android SDK version led to the comprehensive and smoothly design and development of the Android Application.

CHAPTER – VIII
BIBLIOGRAPHY

References and Bibliography:

List of useful Websites

- <https://developer.android.com/jetpack>
- www.w3schools.com
- <https://developer.android.com/studio>

List of useful Books

- [Android Programming: The Big Nerd Ranch Guide](#)
- [GUI Design for Android Apps](#)