



Proposal
For
Second Year Project
Bachelor of Science in Information Technology

Linux Commands

Submitted by
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Gyalpozhing College of Information Technology

Read carefully before filling the form.

1. Please do not alter the layout of the application form. Information must be filled in the spaces provided, under set format.
2. Guidance notes in various fields should not be deleted.
3. Required information should be duly filled in the specified fields.
4. Required heads/fields which are not relevant to the project should be marked **N/A** (Not Applicable) or left blank and should not be deleted.

Guidelines and Forms

Submission Procedure

Duly filled proposal forms completed in all respects should be submitted in form of soft copy and a hard copy to project guide and project coordinator. On receipt of the applications the proposals will be evaluated by reviewer panel and proposal would then be defended by student groups. The project group may need to revise the proposal in light of the evaluator's recommendations.

For further information, please contact:

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Application for Final Year Project

1. Project Identification

<p>A. Reference Number:</p> <p style="text-align: center;">(for office use only)</p>
<p>B. Project Title:</p>
<p>C. Project Internal Guide:</p> <p style="margin-left: 40px;">Name: _____</p> <p style="margin-left: 40px;">Designation: _____</p> <p style="margin-left: 40px;">Organization: _____</p> <p style="margin-left: 40px;">Mobile # : _____ Tel. # : _____</p> <p style="margin-left: 40px;">Email: _____</p>
<p>C1. Project External Guide:</p> <p style="margin-left: 40px;">Name: NA _____</p> <p style="margin-left: 40px;">Designation: _____</p> <p style="margin-left: 40px;">Organization: _____</p> <p style="margin-left: 40px;">Mobile # : _____ Tel. # : _____</p> <p style="margin-left: 40px;">Email: _____</p>
<p>C2. Student Group Lead:</p> <p style="margin-left: 40px;">Name: _____</p> <p style="margin-left: 40px;">Roll No: _____</p> <p style="margin-left: 40px;">Department: _____</p> <p style="margin-left: 40px;">Mobile # : _____ Tel. # : _____</p> <p style="margin-left: 40px;">Email: _____</p>

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D. Organizations Involved in the Project:

(Please identify all affiliated organizations collaborating in the project, and describe their role/contribution to the project.)

D1. Industrial Organizations:

#	Organization Name	Role / Contribution
	NA	

D2. Academic Organizations:

#	Organization Name	Role / Contribution

D3. Funding Organizations:

#	Organization Name	Role / Contribution
	NA	

E. Key Words: Online, Specific digital platform, E-learning, Open Educational Resource, and Interactive applications.

F. Research and Development Theme: Develop a platform to provide necessary materials for users to learn easily, adaptable to different operating system as well as to catch materials or linux commands within a short span. There are lots of users who are willing to used linux commands to install their needing things(Software), to connect with server but they did not have convenient source to refer. The linux commands mobile application will help the users to access the authentic information or linux commands regarding the cases which are really in need of learning purpose. As of now in Bhutan, there is no such application like linux commands of linux opearting system to explored and adapt with new version of operating system. Therefore, I am strongly motivated to come with such an idea and provide a better platform whereby they can view a commands and explored the version of Linux operating system. Moreover most computer users today are only familiar with the graphical user interface (GUI) and have been taught by vendors and pundits that the command line interface (CLI) is a terrifying thing of the past. This is unfortunate, because a good command line interface is amarvelously expressive way of communicating with a computer in much the same waythe written word is for human beings. It's been said that “graphical user interfaces

make easy tasks easy, while command line interfaces make difficult tasks possible” and this is still very true today. So looking at all that analysis, Linux commands mobile application will provide a facility to improve your skills and also helps to make you aware of the different Operating system and version of operating system.

G. Project Status:

(Please mark)

☐ New ☐ Modification to previous Project

☐ Extension of existing project

H. Project Duration:

Expected Starting Date:

Planned Duration in
months:

2. Scope, Introduction and Background of the Project

A. Scope of the Project: The linux commands is an android based mobile application to be developed where users (people who are in need of linux commands) can view their needs and it is also for beginners (who are exploring the linux operating system) to adopt with system and to explored with technology terms. The scope of the project is classified into two parts as following :

System scope(feature)

- I. Commands(view):** Anyone can access the linux commands without registering.
- II. Search:** Users can search the linux commands according to their needs.
- III. Sign up:** In order to discuss on the commands line problems, user needs to complete the registration process (Name, Email, and password).
- IV. Post:** Allow the registered user to post commands line problems/answers.
- V. Edit:** Allow the individual user to edit their posted answers/commands line.
- VI. Delete:** User can only delete their own post and commands line problem solution.
- VII. Report:** Allows the users to report any inappropriate comments/answers done in the discussion forum.
- VIII. Update:** The linux commands will be posted by the admin.
- IX. Exit:** After completing their tasks and then they can close the application by click on exit .

User Scope (Target and area coverage):

The scope this project is limited to bhutan since linux operating system is new version which was easily adaptable system for users. Also , users prefer more on linux operating system than windows operating system.

--

B. Introduction (Project Background and Literature Review, Current State of the Art):

(Detailed summary of what all has been done internationally in the proposed area quoting references and bibliography. Please note that this section demonstrates the depth of knowledge of the project team and builds the confidence of the evaluators about capability of the team in achieving the stated objectives.)

(Please describe the current state of the art specific to this research topic.)

Project Background

In the past decade, technology has undergone incredible advancements. In this modern era everything works on the internet and the smart electronic gadgets whereby the most of education system have made wiser decision of learning through online social media and mobile applications rather than reading whole text book for one commands.

Linux is a free Unix-like operating system that has become popular with PC users around the world. An independent POSIX (see Box 1) implementation, Linux does true multitasking and includes virtual memory, shared libraries, demand loading, memory management, TCPIIP networking and other features that are available with current full featured commercial operating systems (see Box 2). A feature of the Linux operating system that distinguishes it from other operating systems is that it is one of the few operating systems whose source code is also available as free software under the GNU (see Box 3) General Public License(GPL). The GNU GPL is intended to safeguard and guarantee the freedom of any user of free software to share, modify and also share the modified software. This is in contrast to the licenses given for proprietary software that prohibits its users to share or modify software. On modern Linux systems, many day to day tasks such as web browsing and reading email can be managed via a graphical interface. Nonetheless the command line is much more flexible and powerful, likely to be quicker when operating on large numbers of files at once, and essential for tasks such as scientific programming or analysing data.

Our project aims to create a platform consisting of linux commands on different topics, and fields for practice, explored with different type of commands lines, and adapt with operating system. Also, linux operating system is provide different service such as it is free with extremely stable (i.e., it rarely crashes), it is highly resistant to computer viruses, spyware and other *malware* and a large amount of high quality, completely free application programs are available for use on it as well as it can run on older computers that cannot accommodate the newer versions of Microsoft Windows. If the users wants view the commands line and then click on commnds and also users can search the liunx commands since linux commands will upload at main page with scrolling feature .

If the users only intend to view the commands they do not have to sign up but if they are opting for discussing the commands problems and expecting answers, a sign up page should be filled for security purposes, where they can put up their doubts and a person who knows the answer can reply to that person. Understanding how linux commands line are structured and difference the between linux and windows commands line. Also it helps you understand what they look for in an commands line. This mobile application helps the users to view the different commands line of linux

operating system for their reference.

Literature Review:

Linux is free and open source Operating System, Which is mainly used in servers and supercomputers. Linux is bundled with features of Windows and Mac OS X, Since its Open source, We have various Linux distributions, Which cater to different needs of different users. With these, linux commands application is an online platform where users can use to refer commands line of linux operating system according to their needs. It also provides users to post their commands line problem for solution and comment to each other problems which will increase the involvement in sharing knowledge. Linux commands can be platform to increase level of motivation towards learning as it allows users to share his/her opinion on that particular problem as well as post their view. Though different sources like websites and books exist in Bhutan to refer commands line of Linux operating system but the process of searching the websites for commands line for reference is usually time consuming process which doesn't always prove to be efficient. This clearly shows the need for specific common online platform to refer commands lines easily and it encourages learners of all age to learn and explore more in the field and generate more interest to make learning fun.

Linux is a multi-task and multi user operating system. A multitask operating system is capable of doing several tasks at the same time (well, not quite so, but it seems like that from the human point of view). A multiuser operating system has a concept of "user" away to identify the person that is using the system, and can allow different users to perform different tasks in the computer, and protect one user's tasks from interfering with another user's programs (Abhimanyu Sharma, 2016).

The command line interface is a marvelously expressive way of communicating with a computer in much the same way the written word is for human beings. It's been said that "graphical user interfaces make easy tasks easy, while command line interfaces make difficult tasks possible" and this is still very true today. Since Linux is modeled after the Unix family of operating systems, it shares the same rich heritage of command line tools as Unix (William E. Shotts, Jr. 2016). Linux/Unix commands are *case-sensitive*. The terminal can be used to accomplish all Administrative tasks. This includes package installation, file manipulation, and user management. Linux terminal is user-interactive.

Current state of arts:

In the present situation in Bhutan, there is a website where users can search to install one software in different website which was time consumed but in the developing an advanced many people prefer mobile application than website application since there is no features like discussion for the users to ask their doubts or commands problem given while installation time and the well-known person who has the knowledge that he/she wants to share with others to help others. A well-designed mobile application

can perform actions much quicker than a website application. The reason apps are better than website are that Apps usually store their data locally on mobile devices, in contrast to websites that generally use web servers. For this reason, data retrieval happens swiftly in mobile apps. One of the main distinctions between website application and mobile application is the ability of the latter to work offline. Yes, most of the products require internet connection, but basic content and features usually still function without it. Take the example of banking apps that do tax and installment calculations even when in the offline mode. That means brands can deliver value to consumers at any point in time.

C. Challenges: *(Please describe the challenges, specific to this research topic, currently being faced internationally.)*

Completing the task as per the schedule: Time needs to be spend on learning android development, on research, content part of the app (what needs to be included) and for developing the app. We can't assure the probability of completing the project as per the schedule.

Report: Since our app facilitates public discussion on the commands problems, the users may bring up inappropriate and unrelated subjects. Dealing with the reports done by individuals canbe a concern while developing this application.

Security: Security issues can be a concern while developing an application. Since our app requires some personal information of the users while registration, keeping those information safe and inaccessible can be a challenge.

Hardware failure: To developed an mobile application, our system need more RAM . Thus, it has high risk that laptop may crash in between process of develop App.

D. Motivation and Need:

(Please describe the motivation and need for this work.)

People are now becoming more internet savvy: they will prefer to go online in search of commands line rather than finding the commands line books. Till date there hasn't been any mobile app which provides such facility hence, we are introducing "linux commands " to help the people to update with technology version and will help them install and use software easily with free .Although there are existing websites to refer the commands line of linux operating system, a mobile application which compiles the both would be more efficient and in demand.

As when the users use the app and refer the commands, it will help them to explore the commands line of Linux operating system and able to know overall advantage of Graphical user interface.. Hence, our app would help them secure their laptop, desktop and make life more convenient as well as it can save money. Becoming familiar with Linux can result in a substantial financial savings because the software (both the operating system and the application programs) is available for free and because Linux can run on older and cheaper computers. In fact, most people who switch to Linux soon realize that they will never again have to purchase any software.

The process of searching the websites for Linux commands line and searching those same commands line from books for reference is usually a time consuming process which doesn't always prove to be efficient. So if such an app is developed, there will be easy access to the linux commands which will be categorized, and there will also be able to discuss the commands line problem in an efficient and less time consuming.

3. Aim and Objectives of the Project

(Please write the actual aim of your project. Also, describe the measurable objectives of the project and define the expected results. Use results-oriented wording with verbs such as 'to develop..', 'to implement..', 'to research..', 'to determine..', 'to identify..' The objectives should not be statements and should not include explanations and benefits. The objective should actually specify in simple words what the project team intends to achieve (something concrete and measurable/ deliverable). Fill only those objectives that are applicable to the proposed project.)

AIM :

To develop an android application for updating, discussing, and accessing the commands line of linux operating system.

OBJECTIVES :

The objective of our project are:

Our project proposes to develop a platform for easy accessibility of commands line of linux operating system and a discussion for to fixed commands line problems.

2. It will help the users get familiar with the type of linux commands , cope with different operating system and improve time management.

4. Methodology

A. Development / Research / Test Methodology:

(Please describe the technical details and justification of your development and research plan and test plan and testing strategies. Identify specialized equipment, facilities and infrastructure which are required for the project and their utilization plan. The block diagrams, system flow charts, high level algorithm details etc. have to be provided in this section. Also, describe the overall methodology to be used for the particular research topic)

General methodology

Following are the software process that will be involved in developing the project:

>Problem statement

The web application and guide book that exist in world which was used by learners I or uses is not efficient and effective method as that of mobile/online application since learners have to read the whole guide book for one commands line and it takes lot of time to search the web application for linux commands line. Therefore, in order to deal with these problems, the mobile application “Linux commands” will focus on the reduction of time, cost and users effort in exploration, education.

>Literature review

The comprehensive summary of previous research paper on related topic is thoroughly discussed in this phase. It includes articles, books and other sources relevant to particular topic.

>Requirement gathering and analysis

When collection of all relevant information from research papers and existing system related to stated problems are completed, then I will works on understanding the detailed problem.It involves conducting several for brain storming and survey related to the topic. The SRS document is prepared simultaneously which will serve the purpose of input for design phase. This also helps to provide additional creative ideas and information while designing.

>Design

In this phase the design is prepared from the requirement specification which is studied in the firstphase. It helps specify hardware and requirements of the system.

>Implementation

After successful system design the project is divided into modules and actual coding is started.

This is the longest phase software development life cycle.

>Testing

After coding, it is tested to make sure that the product is actually serving the needs addressed and gathered during the requirement phase. It makes sure that the system functions as specified and eliminates any issues and errors in this phase.

>Documentation

Finally, after completing all the coding and fulfilling all the features of the application, project document is created.

Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product. An Agile model development begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements. This process is then repeated, producing a new version of the software at the end of each iteration of the model.

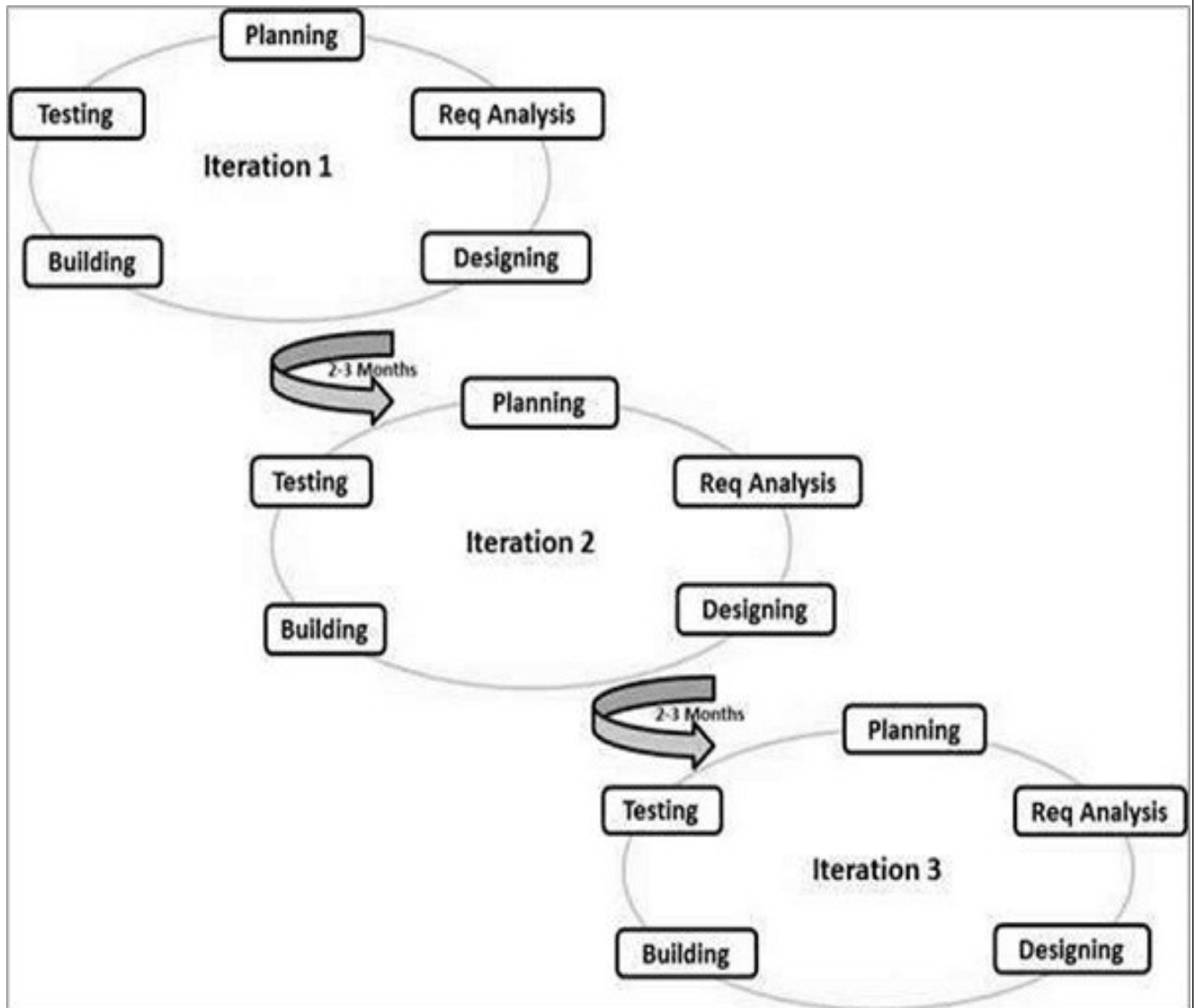


Figure 1.0: Agile Model

Reason for choosing the Agile model for our project are:

- 1) .Functionality can be developed rapidly and demonstrated.
- 2).The speed to change is high as they are iterative in nature and adapts to the changing

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requirements.

3).It is inexpensive while meeting the changing requirements as the working software is frequently

delivered to the user.

4).This model draws the inference that the needs of the end user do not remain the same so it requires

5).limited planning to begin the process of the project

6). Availability of risk identification factor.

7). Gives flexibility to developers.

9).High customer satisfaction.

10).Good models for environments that change steadily.

B. Project Team:	
<i>Title / Position</i>	<i>Number</i>
Project Internal Guide	
Project External Guide	
Student Team Members	
Others (please specify)	
Add more rows if required	

C. Project Activities:

(Please list and describe the main project activities, including those associated with the transfer of the research results to customers/beneficiaries. The timing and duration of research activities are to be shown in the Gantt chart in Section 8.)

Installation of software and tools: Installing android studio version (2 and above), Java Development Kit (v8 or more) and database server.

Resource gathering: Referring books, video tutorials, online reference related to android app development, Java programming language, SQLite and XML.

Design Phase: it includes designing user interface, database design and includes Understanding the functionalities, flow of information, keeping the design concepts in mind. Development of the product: The development of app begins here with coding, using Android.

Testing the product: The product will undergo unit test to ensure that each unit functions properly and will also carry out integration testing to ensure that it produce a desired function after combining all the units.

Final Documentation: After all the phases are done we will prepare the documentation of the project, project report and at the last we will end with final project presentation.

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D. Key Milestones and Deliverables:

(Please list and describe the principal milestones and associated deliverables of the project. A key milestone is reached when a significant phase in the project is concluded, e.g. selection and simulation of algorithms, completion of architectural design and design documents, commissioning of equipment, completion of test, etc.) The timing of milestones is also to be shown in the Gantt chart in Section 8.

No.	Elapsed time from start (in months) of the project	Milestone	Deliverables
1	10/02/21 to 20/02/21	Topic selection of the project	Topic selected
2	21/02/21 to 13/03/21	Literature Review	
3	14/03/21 to 25/03/21	Requirement gathering , Proposal submission and analysis	Project proposal submission
4	26/03/21 to 8/04/21	Design	System design
5	9/04/21 to 3/05/21	Coding	Implementation
6	4/05/21 to 16/05/21	Testing	
7	17/05/21 to 24/05/21	Final Documentation	Final documentation with presentation
(Please add more rows if required.)			

5. Benefits of the Project (Expected output/outcomes):

Following are the benefits or the output obtained from our application:

- 1). Linux commands will be posted frequently.
- 2). Easier accessibility to the commands line of operating system.
- 3). Users can put up their doubts and fix the commands problems.
- 4). The app will be more interactive as users can easily give his/her comments on commands and answer.

6. Risk Analysis/Feasibility

A. Risks of the Project:

(Please describe the factors that may cause delays in, or prevent implementation of, the project as proposed above; estimate the degree of risk.)

(Please mark where applicable) Low Medium High

Technical risk

Timing risk

Budget risk

A1. Comments(Describe the risk):

Technical risk: we will have high technical risk since while developed android application we need high RAM and due to lack of RAM , our may be crash in the process of development.

Timing risk: Time needs to be spend on learning android development, on research, content part of the app (what needs to be included) and for developing the app. We can't assure the probability of completing the project as per the schedule.

Budget risk: we don't have budget risk because we don't have to buy any software or technology. Our project can be done using free software available on internet.

Feasibility

To check whether my project was feasible or not , I did a survey using Google form, among Bhutan peoples.

1. Where do you get the linux commands from (Source)?

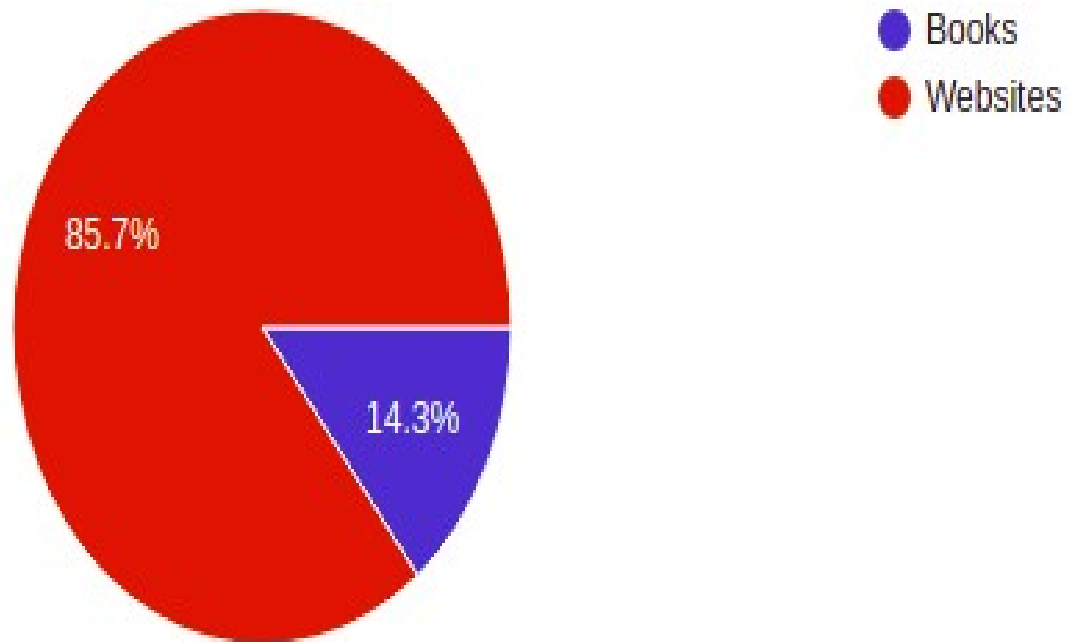


Figure 1.1: It show the source of linux commands

2. Do you find difficulties finding linux commands in browsers?

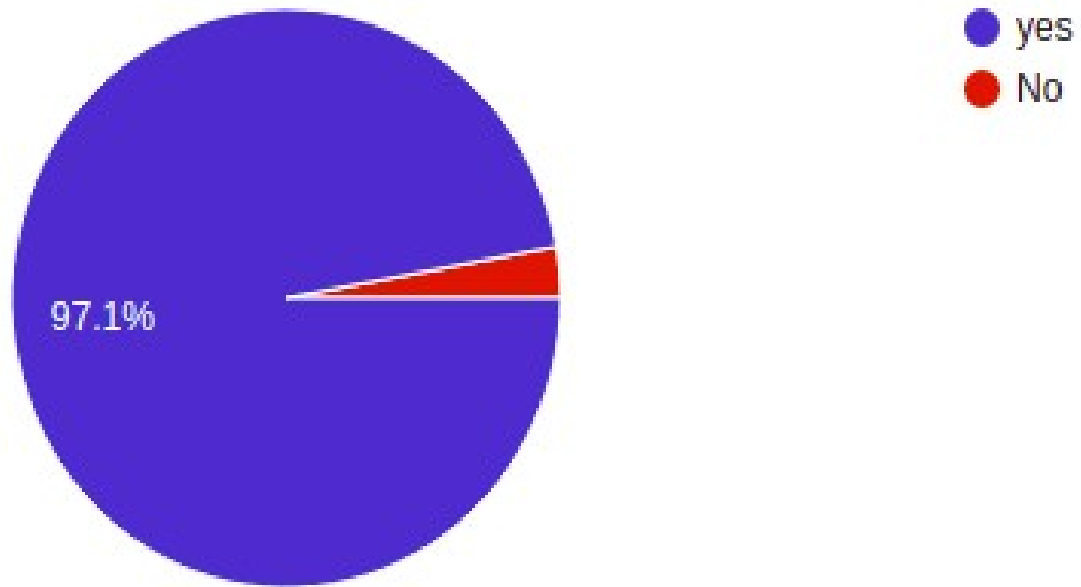


Figure 1.2: it show the difficulty faced by users to obtain linux command from browsers.

3. Do you think such App will benefit you?

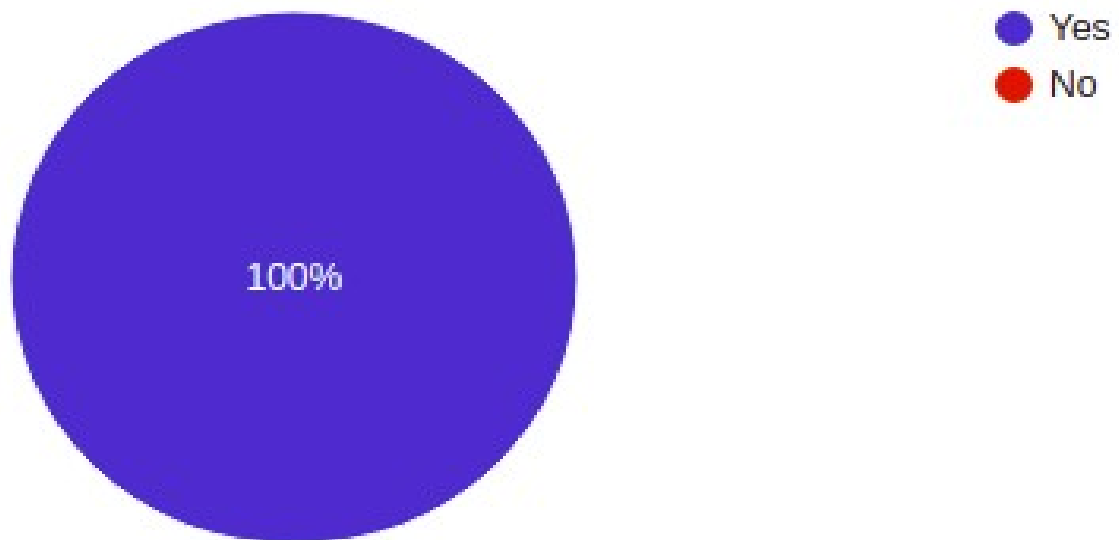


Figure 1.3: It show that App will benefit to user.

4. Which platform do you prefer to used?

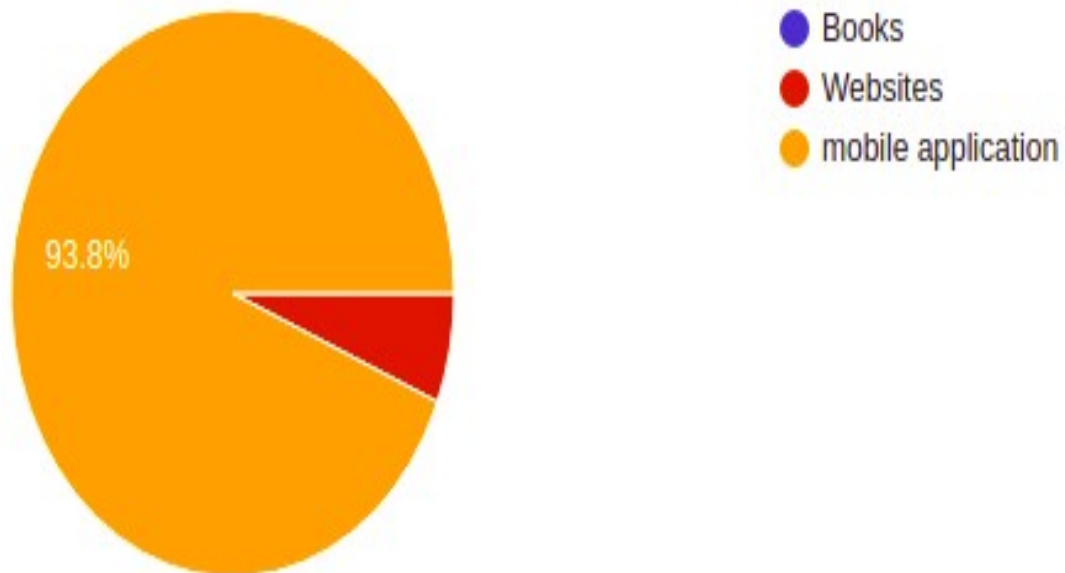


Figure 1.4: It shows that users prefer mobile application.

From survey form, I conclude that there are no certain sources where the users can discuss and refer the commands line of operating system together. Learners or users think that the present way of referring the commands line is not efficient with facing difficulty to find the particular commands line of his or her needs in different website or books. Users agree that there is a need of such app that will benefit them to update with linux operating system and install the software for multiple purpose (education, business).

7. Project Approval Certificate

(Approval of Project Proposal by the Competent Authority (Department Chairman) and

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Project Review Team is mandatory before the start of project execution.)

Project Review Team:

Sl #	Name	Signature
------	------	-----------

(Please add more rows if required.)

Project Coordinator

Name:

Designation:

Email:

Date:

Signature:

Competent Authority – Head of Department

Name:

Designation:

Email:

Date:

Signature

& stamp:

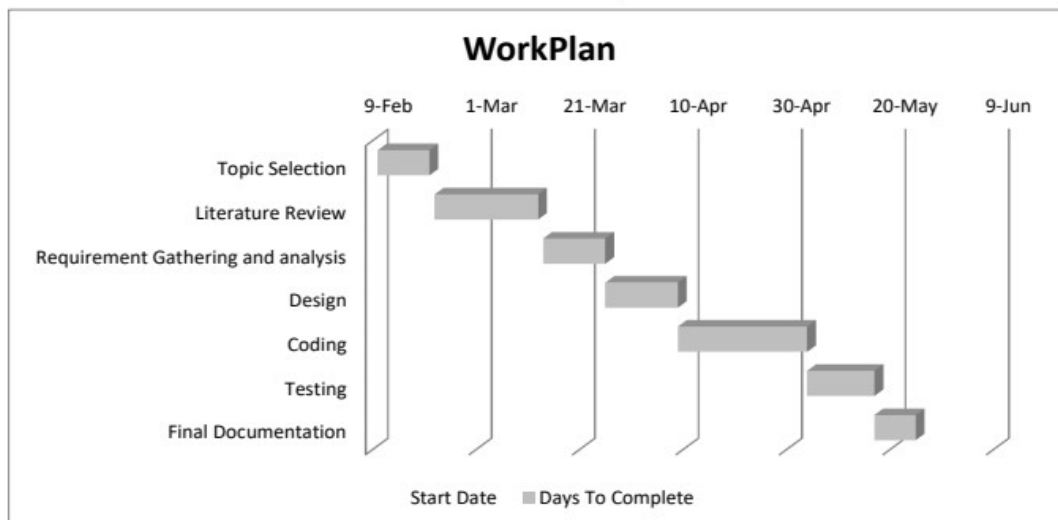
8. Reviewers Panel Comments

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10. Project Schedule / Milestone Chart /Work plan

(Project schedule using MS-Project (or similar tools) with all tasks, deliverables, milestones, clearly indicated are preferred. Task should be measured in terms of hours)

Activities	Start Date	Days To Complete	End Start
Topic Selection	10-Feb	10	20-Feb
Literature Review	21-Feb	20	13-Mar
Requirement Gathering and analysis	14-Mar	12	25-Mar
Design	26-Mar	14	8-Apr
Coding	9-Apr	25	3-May
Testing	4-May	13	16-May
Final Documentation	17-May	8	24-May



13. Report Writing Guidelines

(Project report will be written under the specified guidelines.)

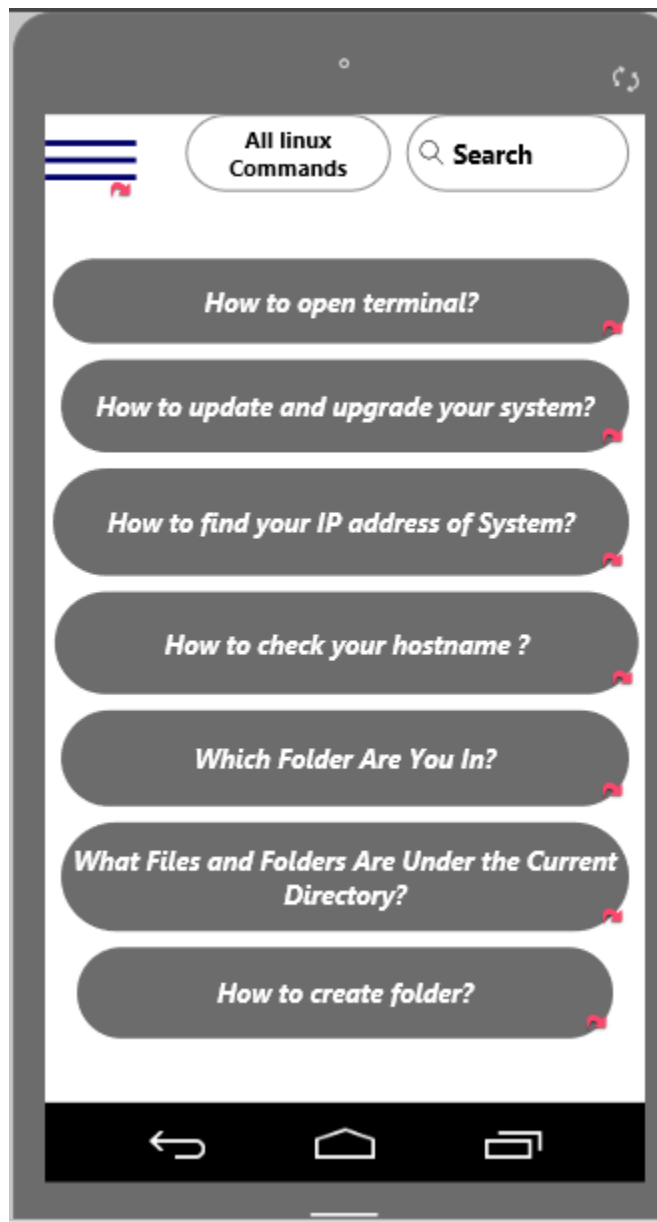
Prototype

This is the first page App and it slide and next will be main page.



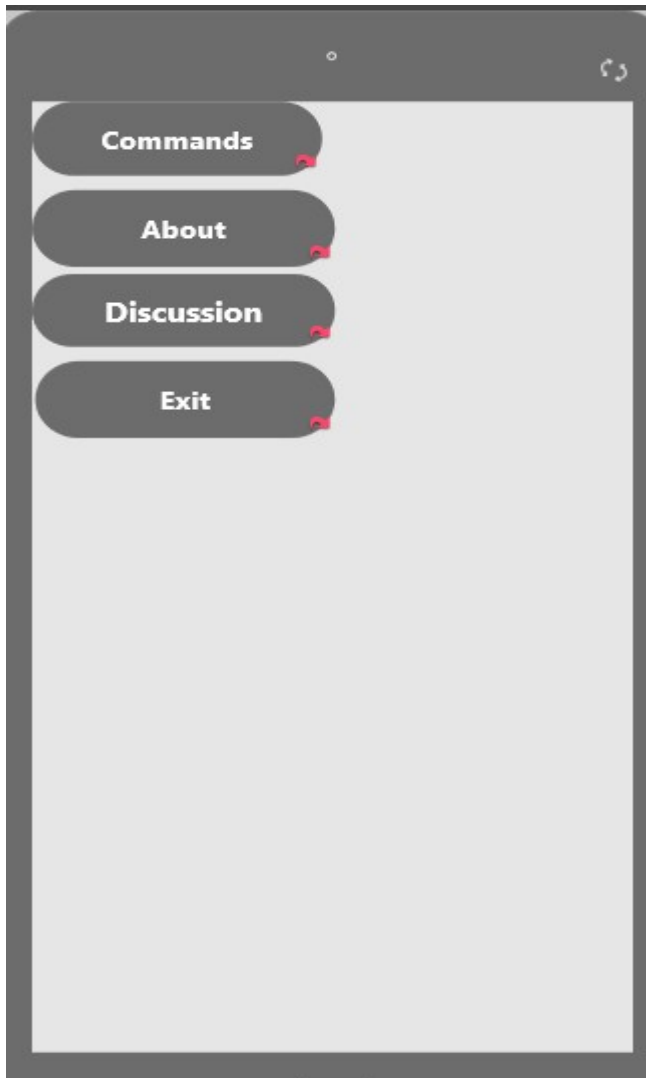
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This is the main page of app and you can view the commands line by press on button. Here there is menu bar called commands while click on commands and then it remain on same page. Also, if users think that scrolling feature take time then users can used search button for commands line.



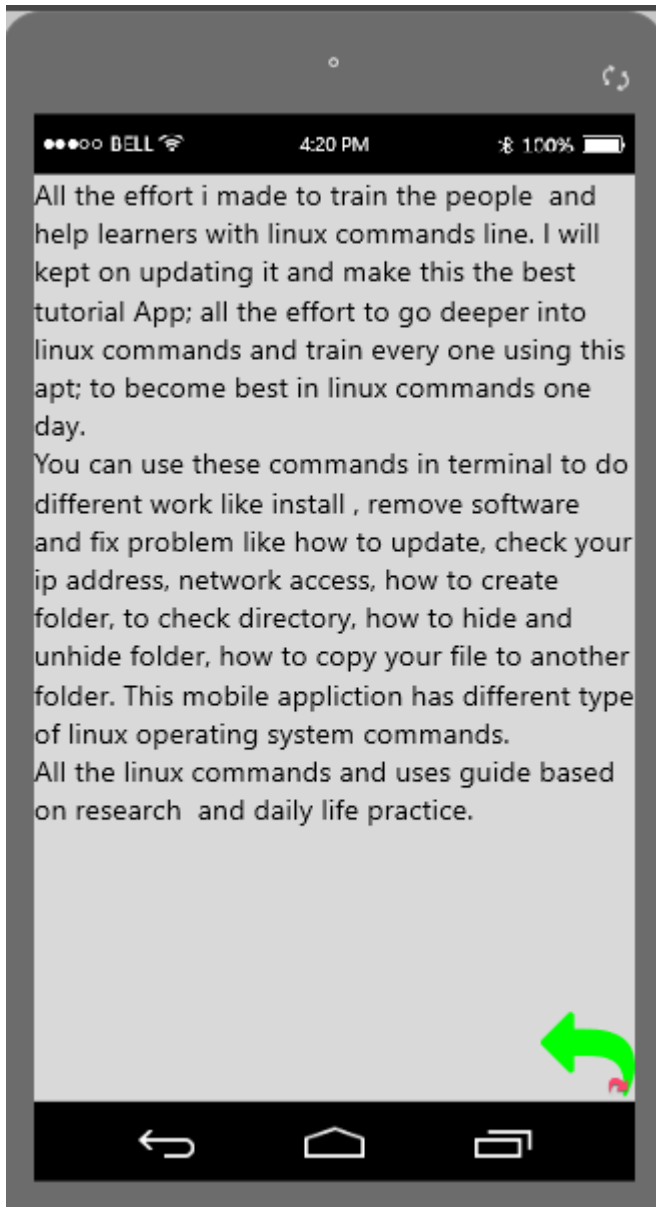
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This page is menu bar of app.



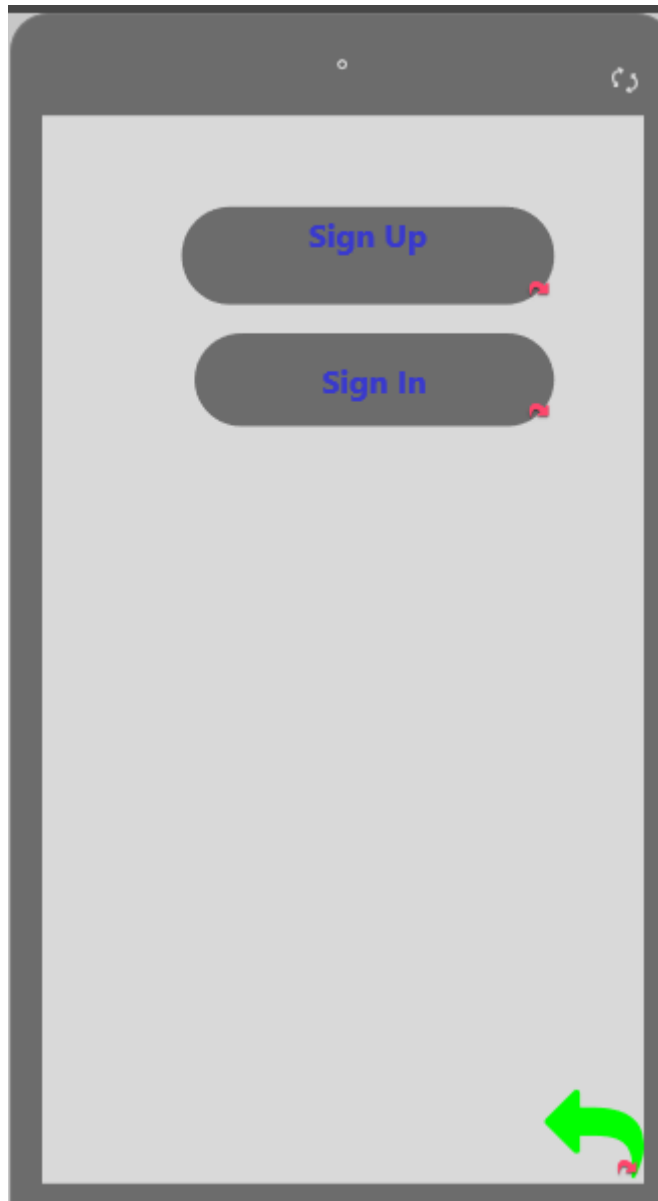
This page will be open when user click on about menu bar and it is about linux and why i choose to do this project .

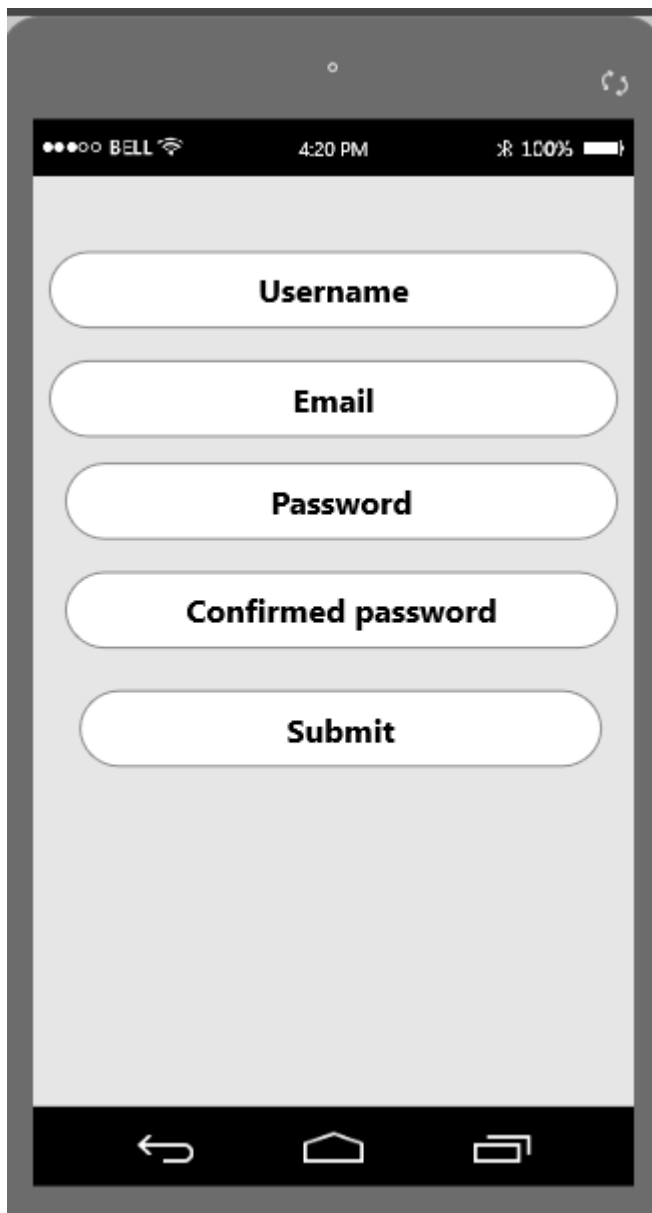
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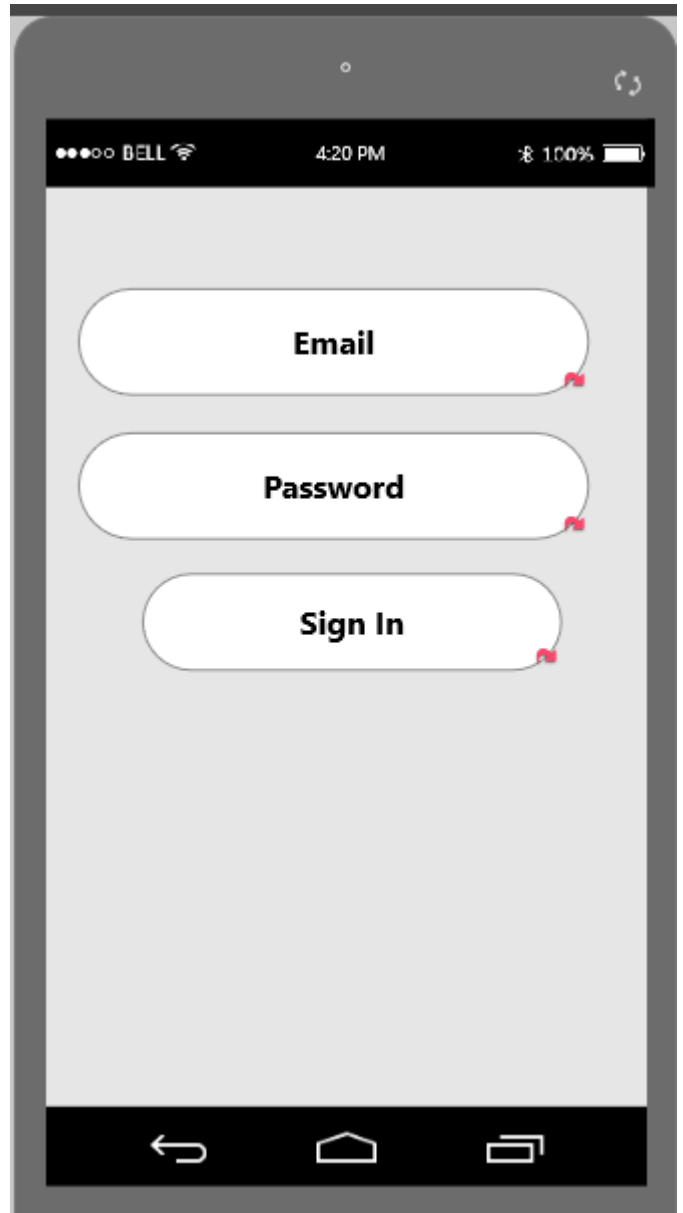
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If users click on discussion, then this page will be appeared. Here, it is platform for discussion to fixed the problem of linux commands. So, users have to create account and then click on sign up and filled the form. After creating an account, if users want to used again the discussion menu then, click on sign in and enter your information. After sign up or sign in, discussion page will be open and users can post their problem, delete and edit their post.





A mobile app registration form with a light gray background. At the top, a status bar shows 'BELL' with signal strength, '4:20 PM', and '100%' battery. The form contains five white rounded rectangular input fields stacked vertically, labeled 'Username', 'Email', 'Password', 'Confirmed password', and 'Submit'. At the bottom, a black navigation bar contains three white icons: a back arrow, a home house, and a recent apps square.

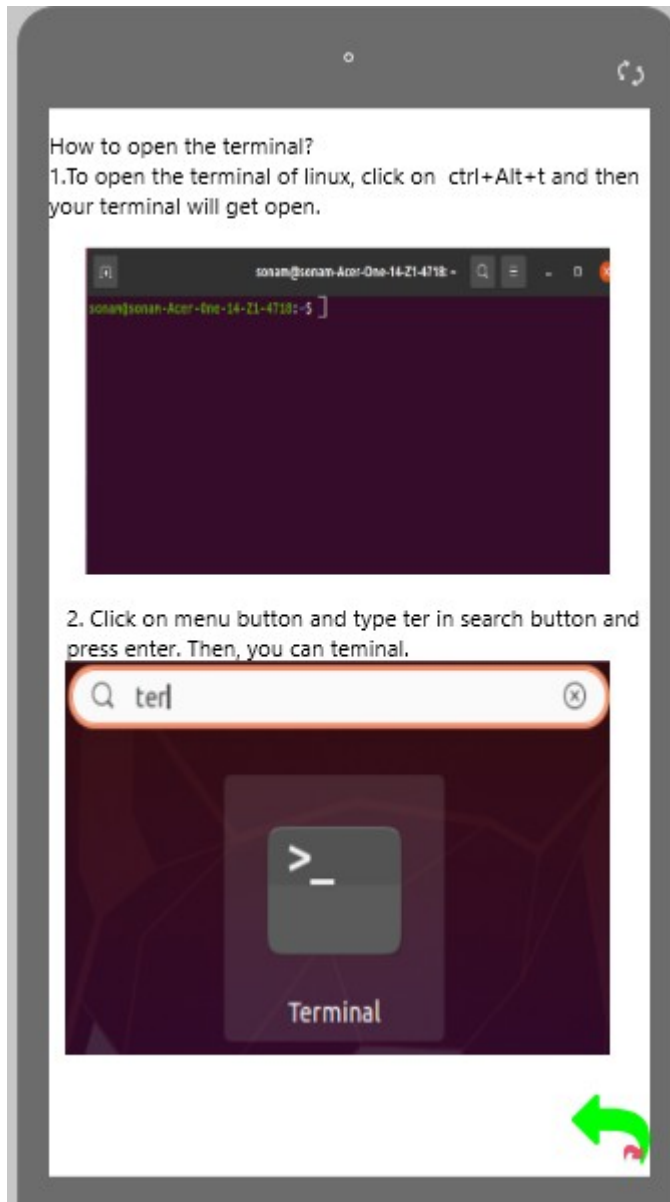


A mobile app login form with a light gray background. At the top, a status bar shows 'BELL' with signal strength, '4:20 PM', and '100%' battery. The form contains three white rounded rectangular input fields stacked vertically, labeled 'Email', 'Password', and 'Sign In'. Each of these three fields has a small red heart icon at its bottom right corner. At the bottom, a black navigation bar contains three white icons: a back arrow, a home house, and a recent apps square.

The image is a wireframe of a mobile application interface for creating a post. It consists of a dark grey header bar at the top with a small circle icon on the left and a refresh icon on the right. Below the header is a large white rectangular area for text input. At the bottom of this area is a row of three buttons: 'Post', 'Edit', and 'Delete'. The 'Post' button is the largest and is positioned on the left. The 'Edit' and 'Delete' buttons are smaller and positioned to the right of the 'Post' button. The entire interface is enclosed in a dark grey border.

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If user click on button called 'How to open terminal ' then this page will be display.



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https://www.researchgate.net/publication/228790967_Some_useful_linux_commands
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