A ANDROID BASED PROJECT & THESIS ON E-LEARNING SYSTEM

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

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APPROVAL

This Project/internship titled"**Smart Learning**", submitted by Shovan Paik, ID No: 153-15-6635, Habibur Rahman, ID No: 153-15-6638, to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 12-09-19.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Nusrat Jahan, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

The appropriate and successful integration of technologies into learning environment over the previous ten years period has left great gab between the amount of technology available and the support for teachers. Teachers have helped us use it and how can we get online education more widely. The Smart learning process aimed to creating an educational collaboration environment between student and teachers which include acquiring more skills, experiences, attitudes, and teaching strategies and others. We can take any kind of education related CSE that help a student a lot. It is also a good platform for teachers to share their experience here. In most cases, present lifestyle of mankind are legitimately digital and automated that people want to find anything faster and easier than before it was, where internet has sweeping impact for human race. So in this case this application help to faster in education system. Our application Smart Learning is very user friendly. We used java language, firebase storage, and many libraries. At the finishing, we did a white and black box testing which was very much important and we have achieved success. We believe the Smart learning will increase positive communications and interaction between educators and it will form an integrated information management system for the learning and teaching processes.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

E-Learning is a method that makes learning environment easy and vibrant. The large amount of student using technology. They have to prefer more dynamic environment. So, this is the most common and easy way that kind of people. They have some difficult to learn and communication. E-Learning systems make this easy. Because of modern equipment of e-learning helps to study from anywhere.

The e-learning is basically an android and web base application. Multimedia helps us to more comfortable to learning.

1.2 Motivation

If we want to increase the result of education, then we have to pay more attention to its four divisions. Those are Attention, Relevance, Confidence, and Satisfaction. So in the stage we are fully want that we are make an android app based on e-learning. That app helps student to achieve their goal. If we think the relevance of this work, hopefully this is very smart for student and teacher, because this is modern age of science. Most of people use internet, and most of student like to learn from internet. And this is better for our future because we have opportune and we use this. This part is also confidence to us. We just try to this app helps student and they use this. In future we try to provide more material and we think this is a successful app.

1.3 Rationale of Study

Our main goal is to achieve the trust of teachers and students. In this system we work to some important subject of CSE. Admin provide CSE related materials′ as like pdf, book, and video and also web link. Admin modify this system at any time. On other hand teachers and students need to verify their identity. Teacher also can give materials of their students and also give them advise. Students are accesses to

download or visited all materials that admin or teacher already given. Student share their problem through by comment. And teacher or admin solve this problem by using reply section. Every student share or given feedback if they want.

1.4 Research Question

We already noticed that bounteous work has done and introduced different model on e-learning. Among them some model gives extra ordinary performance. However, we need a huge dataset for achieving better performance. On the other hand a model needs high level Hardware requirements. Again most of the work has done on a special dataset. Now the hypothesis is how the model performs in our own dataset for smart learning. It is basically working in a simple via where dataset is very small.

1.5 Expected Outcome

We expect the outcome from our project is absolutely right, specific and befitting. We know that our education systems are not high. So this app helps to increase our education system. Student gain more knowledge easily and smartly. Offer access to updated content, this is the prime benefit of this. Teacher quick delivery lessons of his student. Students are communication of their teachers to get quick solve. In this whole system or project only student get benefit. And we get a successful application.

1.6 Report Layout

In this project a full overview of our system and related work and terminologies are given gradually. We recently made a survey on this similar work and try to what is more scope to develop this existing project. In chapter 2 we describe the challenges and facing problem which is making difficult to us. Another chapter 3 we describe data collection procedure. We also describe the requirement specification and try to disclose users demand. In, chapter 4 and 5 we disclose how we solve the problem and what we use to implement the project.

CHAPTER 2

BACKGROUND

2.1 Introduction

The e-learning was first mentioned in the CBT seminar. When the internet was not there and the students were allowed to do away with courses. During the 1840s Isaac pitman first applied it. Initially, it was made only for student but it became more common for day-to-day popularity.

2.2 Related Works

There is a lot of work on e-learning, where its benefits are highlighted. So, this section we discussed about on those paper. There are a lot of communication element to communicate with teacher and student. We just went to make this work more straightforward and interesting. Nasr provide advice for those people who are unhealthy and silent people who cannot speak or hear anything [1]. Shishehchi is another organization that is working on surveying personal tricks of the learners. And they get well result [2]. We have the opportunity to use internet and make e-learning based application, also we hope we will achieve success. We recharge some paper about e-learning system. Another organization who analyzed the views of facilitators, 77% said they prefer e-learning, 17% prefer in the classroom and the rest say 7% they like it completely [3]. Online learning is growing common across in Australia. So their new goals were e-learning. The core subject of James Cook University was Educational for Cultural Diversity. This subject only gave pre-service teachers. E-learning only comes that time, when there is an abb and flow between making judgments. Most of student spends their free time in internet (NMC Horizon Report 2013). So, E-learning and other technology grow up different affordance more than physical campuses. On the other hand Mobile-learning is a part of e-learning. Many universities highlight their designing software and wireless technology with high practice guidelines for student and educator. They include these technology such computer, MP3, notebook & tablets. So, they highlight how e-learning or mobile-

learning is more easy and attractive in their student and educator. In this place teacher share their experience between other and also take complex paraphernalia & difficult steps. Finally the process has created our own roles that are characterized by teachers as DJ metaphor [4].

2.3 Research Summary

We have developed our project/thesis for using as a completely android –based benefit to fulfill the system according to smart level. For this work we have researched some paper based on e-learning system. There are various systems of e-learning application but we think our application will be easy to use. Students are communication with teacher via comment or mail. And this is positive side that we make course the way they want. We believe that our project/thesis will increase positive communications and interaction between educators and it will form an integrated information management system for the learning and teaching processes.

2.4 Scope of the problem

The main purpose of our work is to create an android app on e-learning. It will be an easy way for student to learn and connect with teacher. Through this online process the student will get regular support, instruction & feedback as their study. We faced some problem as like we can't motivate all students to use this application. So we thought how it can be attractive to the student. On the other hand students are running short on time. There isn't enough time to learning. Most of student thinks that they will not be able to keep up with the era or they will spend too much time.

2.5 Challenge

Our biggest challenge is to keep pace with the current age. We have seen that those cannot go forward with the age, they have lost. We used the technology of the modern age. So you have to think about a lot if you want to have professional applications. Design one of them, than to-do list, schedules and more attention.

One of the most common e learning challenges that overall lack of learning motivation. In order to spend e-learning, our application will be attractive and inspirational. We can make the application simple and easy. If it is better than multimedia connect.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

There are basically two platforms for e-learning, web base and android base. But we think that android has kept most parts. The first reason for its availability and demand id its reason. Our software is making complex work easier and therefore everyone is attracted to this. And the web is helping us in many different ways. We can take any information, design, documents and guideline that are essential for us.

3.2 Research Subject and Instrumentation

Resource Allocation

We can recourse in many ways. For this, we need to have planned ideas and plans. We plan to do the recourse achieve the goal in the future.

Design

Whole design of this project is user friendly. Modern and updated design tools have been used for this project. Also new concepts have been considered to make it user friendly. In future any kind of edit is allowed as time permits.

Completion

Every panel will be updated any time.

Project Deliverables

Project deliverable is basically bringing out the original output from a project. And keep those outputs together. Basically what is the progress of our project, what kind of values should be analyzed?

3.3 Data Collection Procedure

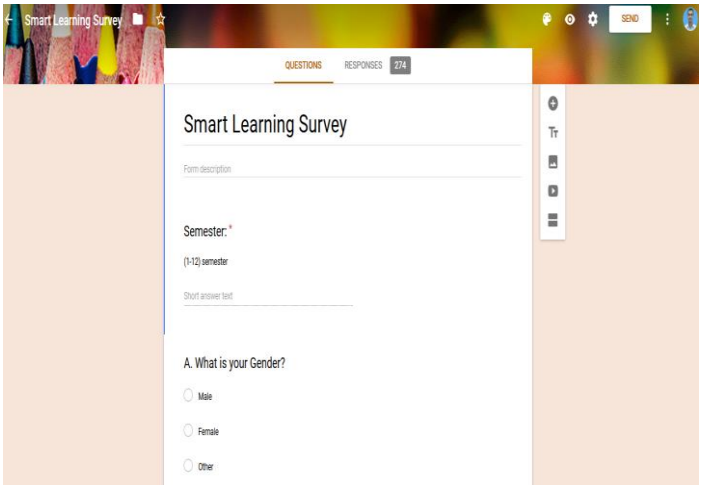


Figure 3.3.1: Google Survey form

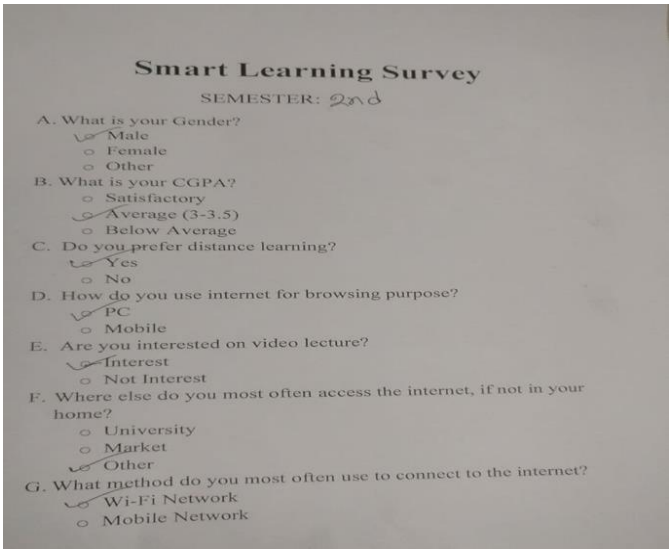
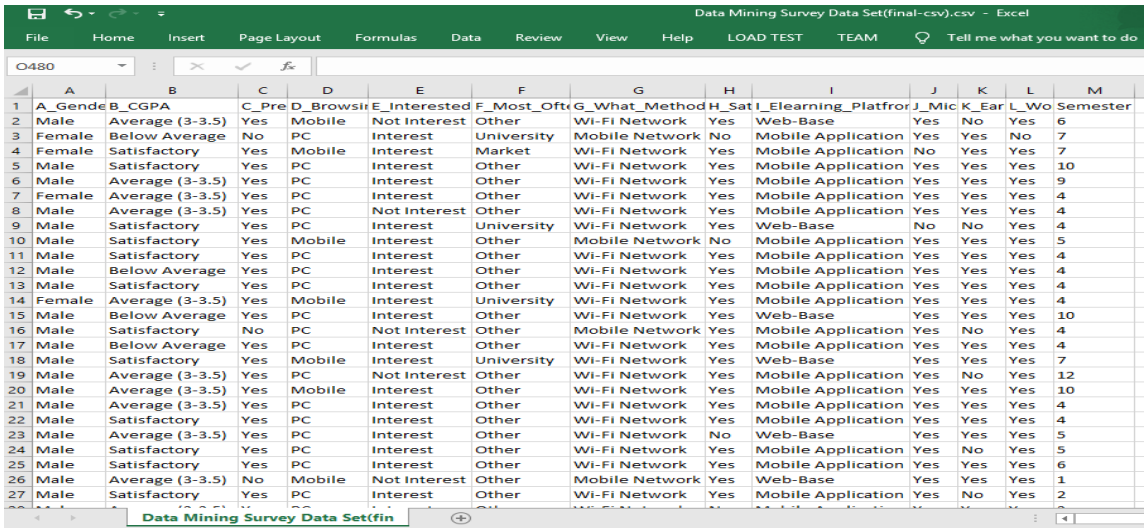


Figure 3.3.2: Offline Survey form

In this part we will discuss the most important tasks. In data collection we make a survey. Two types of collection we made in this project. One is online Google survey form and other is off line survey form. In figure 3.3.1 and 3.3.2 shows this survey question and more information.

3.3.1 Data preprocessing

After data collection we are preprocessing this data. We used some method to implement this data in our project.



Data Mining Survey Data Set(final-csv).csv - Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	A_Gende	B_CGPA	C_Pre	D_Browsi	E_Interested	F_Most_Oft	G_What_Method	H_Sat	I_Elearning_Platfor	J_Mic	K_Ear	L_Wo	Semester
2	Male	Average (3-3.5)	Yes	Mobile	Not Interest	Other	Wi-Fi Network	Yes	Web-Base	Yes	No	Yes	6
3	Female	Below Average	No	PC	Interest	University	Mobile Network	No	Mobile Application	Yes	Yes	No	7
4	Female	Satisfactory	Yes	Mobile	Interest	Market	Wi-Fi Network	Yes	Mobile Application	No	Yes	Yes	7
5	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	10
6	Male	Average (3-3.5)	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	9
7	Female	Average (3-3.5)	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
8	Male	Average (3-3.5)	Yes	PC	Not Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
9	Male	Satisfactory	Yes	PC	Interest	University	Wi-Fi Network	Yes	Web-Base	No	No	Yes	4
10	Male	Satisfactory	Yes	Mobile	Interest	Other	Mobile Network	No	Mobile Application	Yes	Yes	Yes	5
11	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
12	Male	Below Average	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
13	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
14	Female	Average (3-3.5)	Yes	Mobile	Interest	University	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
15	Male	Below Average	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Web-Base	Yes	Yes	Yes	10
16	Male	Satisfactory	No	PC	Not Interest	Other	Mobile Network	Yes	Mobile Application	Yes	No	Yes	4
17	Male	Below Average	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
18	Male	Satisfactory	Yes	Mobile	Interest	University	Wi-Fi Network	Yes	Web-Base	Yes	Yes	Yes	7
19	Male	Average (3-3.5)	Yes	PC	Not Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	No	Yes	12
20	Male	Average (3-3.5)	Yes	Mobile	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	10
21	Male	Average (3-3.5)	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
22	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	4
23	Male	Average (3-3.5)	Yes	PC	Interest	Other	Wi-Fi Network	No	Web-Base	Yes	Yes	Yes	5
24	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	No	Yes	5
25	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	Yes	Yes	6
26	Male	Average (3-3.5)	No	Mobile	Not Interest	Other	Mobile Network	Yes	Web-Base	Yes	Yes	Yes	1
27	Male	Satisfactory	Yes	PC	Interest	Other	Wi-Fi Network	Yes	Mobile Application	Yes	No	Yes	2

Figure 3.3.1.1: Survey Data set

3.3.2 J48-Decision Tree

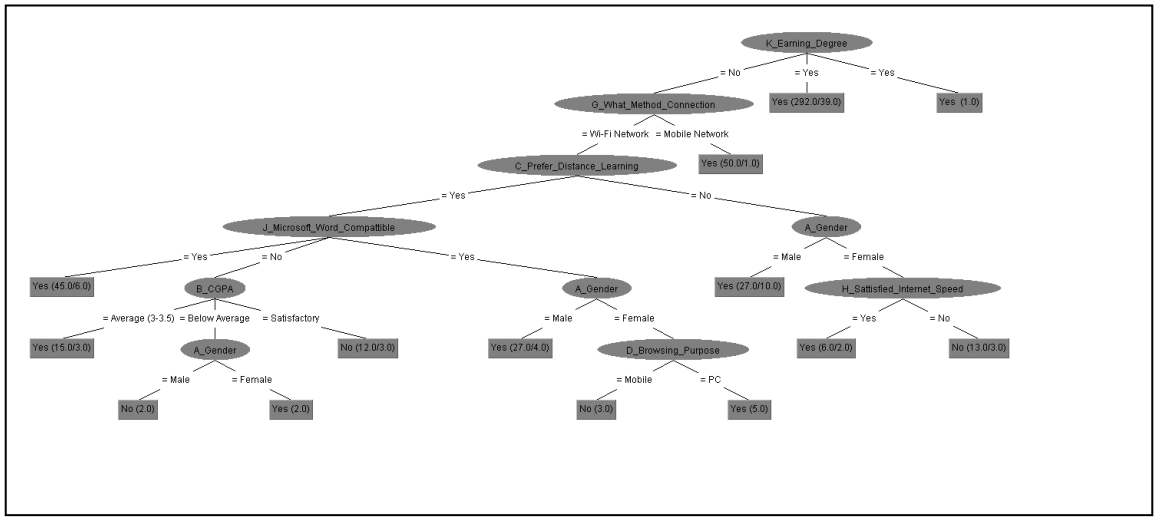


Figure 3.3.2.1: J48-Decision Tree

After we have data collection the data, we pre-process the data using j48 decision tree.

3.3.3 IBK Algorithm

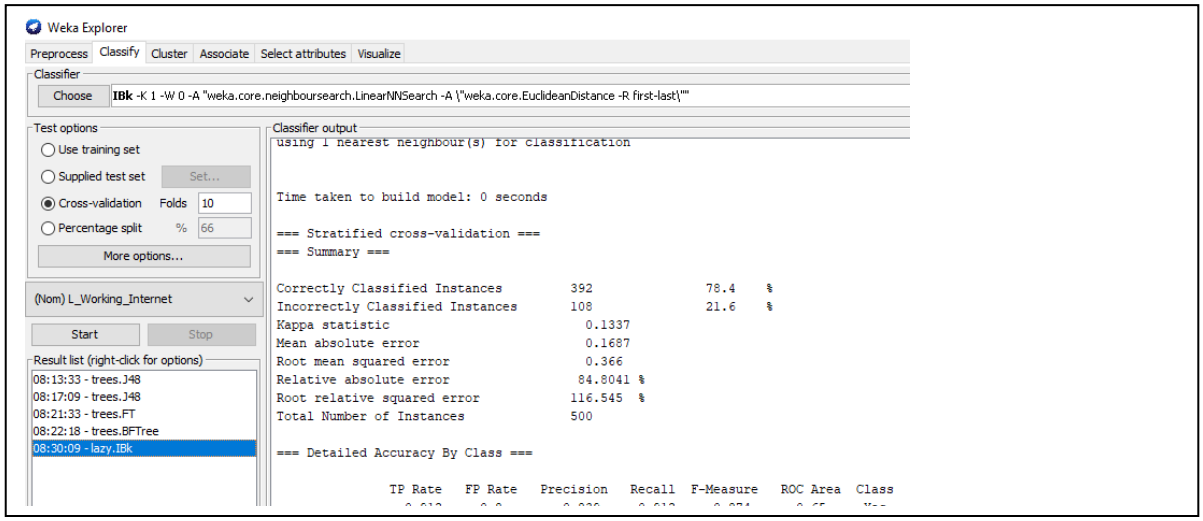


Figure 3.3.3.1: IBK Algorithm

Cross-validation is a process that actually avoids overfitting in the same run.....it always depends on the parameter, otherwise it would be the same. But, many algorithms have some random part that can lead to different results with the same dataset. In addition, it depends also on your train/test data partition. So, you look at the performance doing cross-validation repeated cross-validation, looking not only at the estimated performance, but also to its variance.

3.4 Statistical Analysis

A project basically depends on its collected data. This data plays an important role in the whole project result. Every step is important in any project. If we collect wrong data or not take the original data than the whole project will be risk. And in future, this project maybe opposed. We will collect our required data and try to implement it. So that we are collected our project requirement as soon as possible. Then we started our work.

3.4.1 Business Process Model

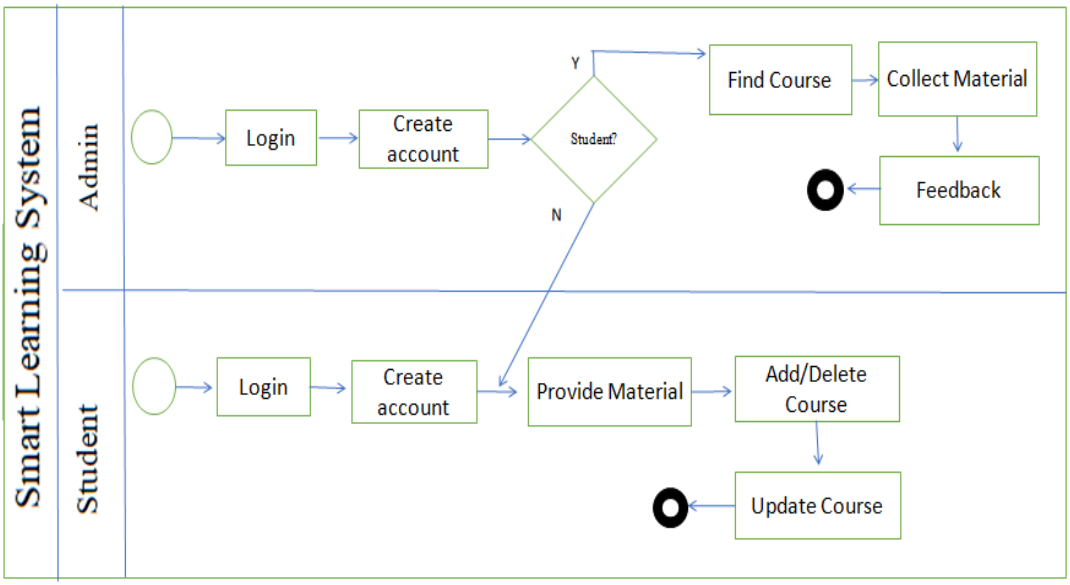


Figure 3.4.1.1: Business process modeling

Business process modeling (BPM) refers to the creation of a model of a business process in order to better understand that process. Business process modeling relies on conventions like Business Process Model and Notation (BPMN) or Unified Modeling Language (UML) to set up models or simulations of a business process for evaluation and possible alteration. A business process model is often presented as a simple visual. Items like flow charts, Gantt charts or PERT diagrams are used to provide a visual model. These models serve to analyze work flow and other aspects of a business process anywhere in the larger context of a comprehensive business model.

In addition to showing how a business process currently works, business process modeling can also aid planners in developing goals and solutions around various hypothetical scenarios. In general, the business process model demonstrates the value of concise, clear visuals in a plan, and the use of accurate models to enable precise desired outcomes.

3.4.2 Use Case modeling and description

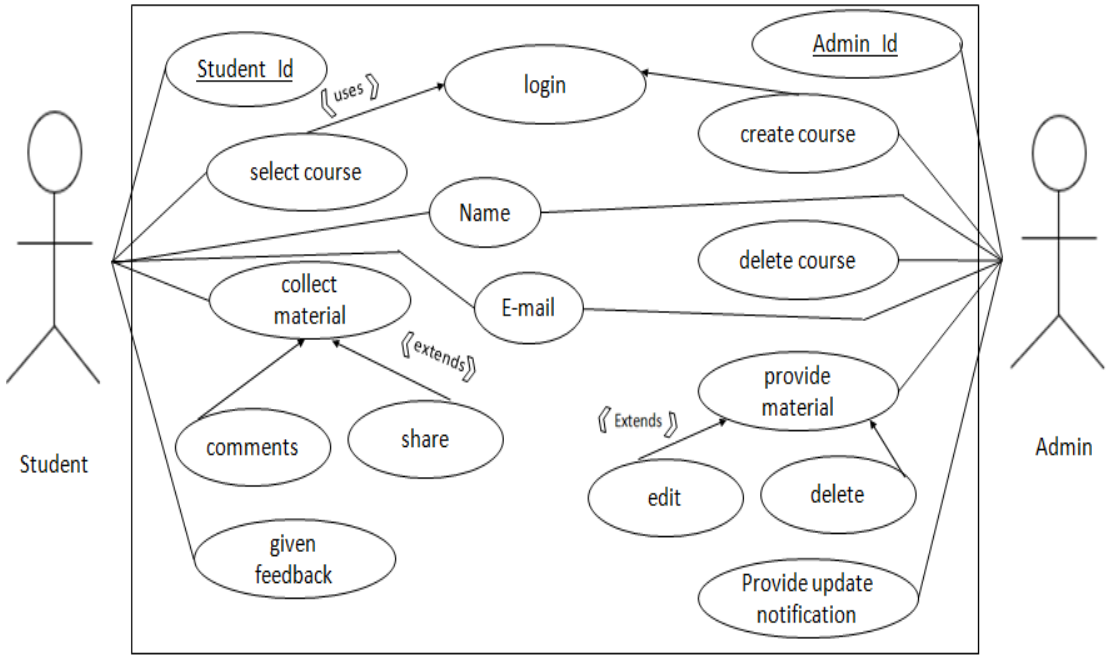


Figure 3.4.2.1: Use Case

Table 3.4.2.1: Use Case for Login

Use Case Name	"login"
Actor	Student
Pre-condition	Student E-mail
Primary Path	Enter Student E-mail Click "Login" Button
Exceptional Path	Invalid E-mail Internet Error

Table 3.4.2.2: Use Case for Course

Use Case name	"Course"
Actor	Student
Pre-condition	Student E-mail
Primary Path	Enter Student E-mail Click "Login" Button
Exceptional Path	Invalid E-mail Internet Error

Table 3.4.2.3: Use Case for Provide Material

Use Case name	"Provide Material"
Actor	Admin
Pre-condition	Admin E-mail
Primary Path	Enter Admin E-mail Click "Login" Button
Exceptional Path	Invalid E-mail Internet Error

3.4.3 Data Flow Diagram

DED is basically used to show a project graphical idea. Here we also process data if we want to. And also DFD gives a sense of what type of input it will output from.

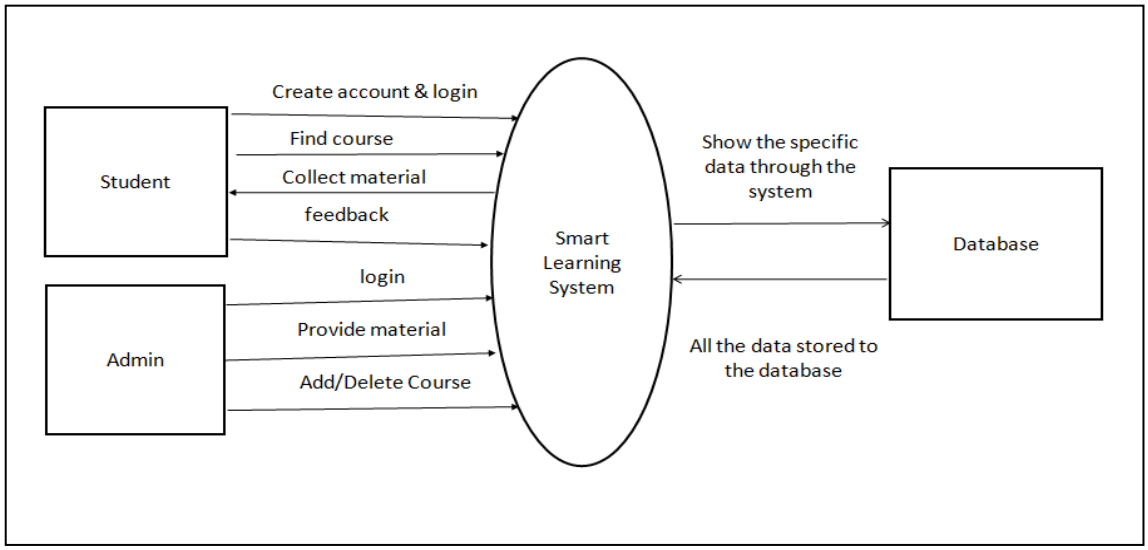


Figure 3.4.3.1: Data Flow Diagram

Also known as DFD, Data flow diagrams are used to graphically represent the flow of data in a business information system. DFD describes the processes that are involved in a system to transfer data from the input to the file storage and reports generation.

Data flow diagrams can be divided into logical and physical. The logical data flow diagram describes flow of data through a system to perform certain functionality of a business. The physical data flow diagram describes the implementation of the logical data flow.

3.5 Implementation Requirements

How much martial is needed for us to do a project. We can decide on which side we will take a closer look. So, implementation requirements are very important to in a project.

Non-Functional Requirement

Our system has some nonfunctional requirement that is described in the below:

Reliability Requirement

We are looking a system where both the students and the system authorities get dependencies. And all students can update their information without helping admin.

Usability Requirement

We are trying to simplify our system by thinking about our user.

Implementation Requirement

In our Smart Learning system we use only firebase and java.

Delivery Requirement

We hope that this system will take five months to complete the whole.

CHAPTER 4

EXPERIMENTAL RESULT AND DISCUSSION

4.1 Introduction

We have used various algorithms in this project, J48 one of them. It has been used to check the project. It will be measurement and tell us how successful our project is or how much we have been done. Using another algorithm which is called Decision tree. Through this we can be aware of the work of each level. Again, we will decide on which level it will help and it will help [11].

4.2 Experimental Result

J48 has been created if our target is not desired. Basically, it gives a preview of our work. It has an algorithm that is tree classification which collect data and analysis those data.

There are many features of this J48, but the ones that are extraordinary here are absent. Weka uses an algorithm J48 for data mining and its version is J48 C4.5.Weka fills check his data as well as we can cut trees. Until it is completely cleaned it will be repeated again. So, the result of his should be the highest level of accuracy. Because it extends to the highest level of accuracy. We think it give us the best result [13].

4.2.1 Counting Gain

We use entropy only that time when data disorder is measured**.** The entropy of $\underset{y}{\rightarrow}$ calculate by this way**.**

$$\text{Entropy}\left(\underset{y}{\rightarrow}\right) = -\sum_{y=1}^{n} \frac{|y_i|}{\left|\underset{y}{\rightarrow}\right|} \log\left(\frac{|y_i|}{\left|\underset{y}{\rightarrow}\right|}\right)$$

$$\text{Entropy}\left(j|\underset{y}{\rightarrow}\right) = \frac{|y_j|}{\left|\underset{y}{\rightarrow}\right|} \log\left(\frac{|y_j|}{\left|\underset{y}{\rightarrow}\right|}\right)$$

And Gain,

$$\text{Gain}\,(\underset{y}{\rightarrow}, j) = Entropy\,(\underset{\text{y}}{\rightarrow} - \text{Entropy(j}|\underset{\text{y}}{\rightarrow})$$

So far we′ve taken the classification rate − computed on a test set, or holdout, or cross-validation − as the measure of a classifier′s success. We′re trying to maximize the classification rate, that is, minimize the number of errors. But in real life, different kinds of error often have different costs. If the costs are known, they can be taken into account when evaluating a classifier′s performance. Error costs can also take into account when using a learning method to create a classifier − regardless of which learning method is used − to get a classifier that minimizes the cost rather than the error rate.

4.3 Descriptive Analysis

There are some specific aspects to follow in order to design a system. Where will be its description, module and the whole system will be described. In chapter 3 overall system design of our application has been showed, where architectural design, use case diagram, Business process modeling and data flow diagram included. Whole design of this project is user friendly. Modern and updated design tools have been used for this project. Also new concepts have been considered to make it user friendly. In future any kind of edit is allowed as time permits.

4.3.1 Architecture Design

One of the most important aspects of a system is its architecture. In architecture, the system′s conduct behavior, structure and work plan are described.Our application′s architectural design shows that-

- Users search the application name.
- Play-store finds the application & user install this application.
- Database show the information.

Figure 4.3.1.1: Architecture Design

4.3.2 Application features

In feature we show how our users will used it. And we think it will be easier for them to understand our application.

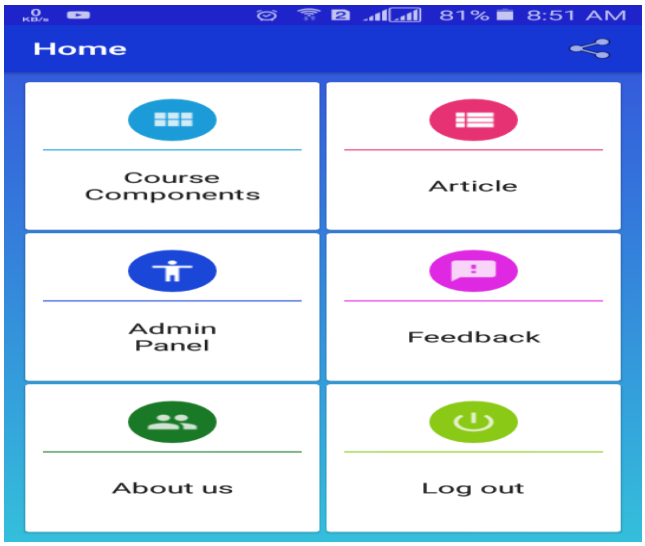


Figure 4.3.2.1: Home Page Screenshot

Figure 4.3.2.2: Courses Screenshot

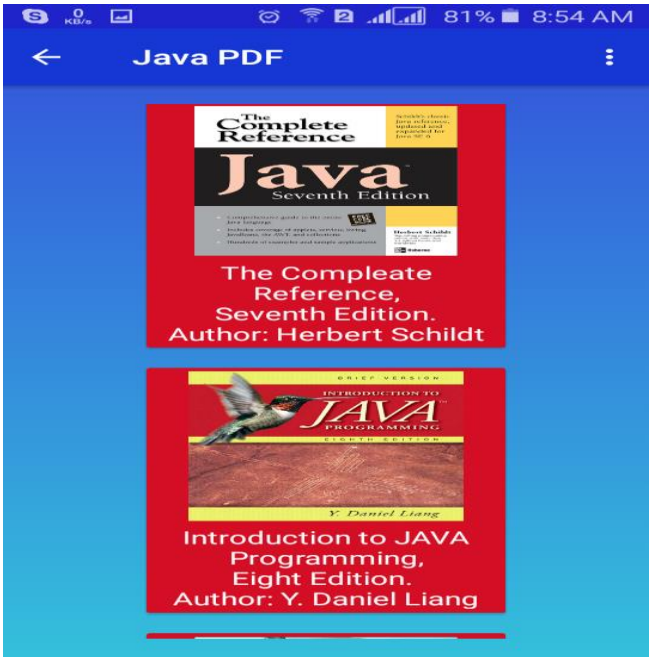


Figure 4.3.2.3: Course Equipment

4.3.4 Front-end Design

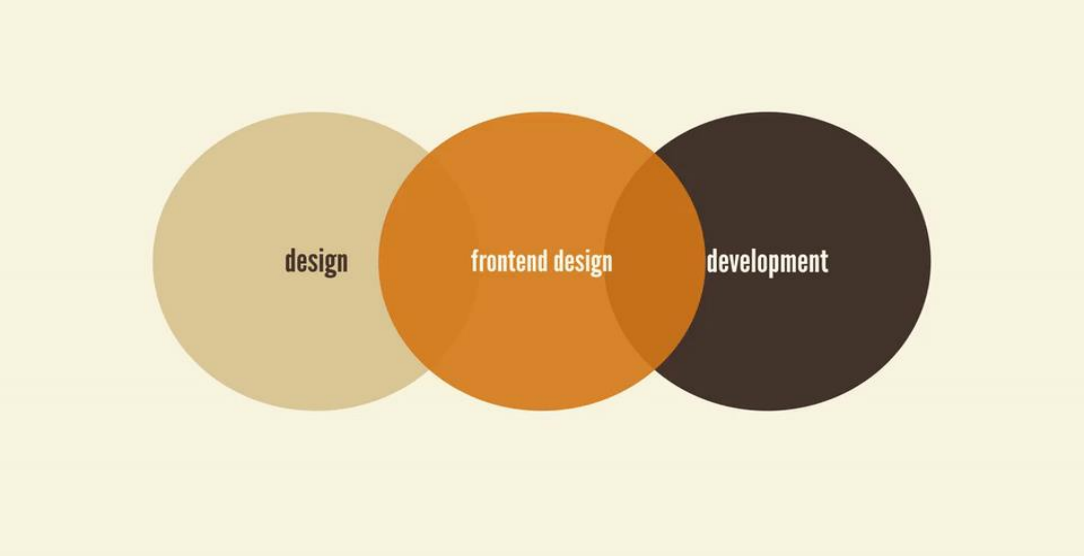


Figure 4.3.4.1: Front-end Design Relationship

Front-end design is a process that gives us a sense of work before we finished our work. Front-end tools; we used only java for our Smart Learning Application.

4.3.5 Back-end Design

Figure 4.3.5.1: Back-end Design Relationship

Backend design is the part of your system that the user cannot see. Moreover, it keeps track of the user′s identity and helps him get information. In backend design we use firebase and java.

4.4 Summary

We came to make this system with all of our efforts. We think we have given our best. But again we think there are some limitations here. We will work to overcome these limitations in the future. To overcome this limitation, we have to work more on this system. But end of the day we can say that we are not too far from our goal.

CHAPTER 5

SUMMARY, CONCLUSION, RECOMMENDATION AND IMPLICATION FOR FUTURE RESEARCH

5.1 Summary of the Study & Conclusion

We consider the Smart learning System will be integrated helpful, supportable, servable system to both Admin and teachers to achieve their works in complete manner. Withal, we believe Smart learning System reduce the time, cost, effort, and potentials which are needed in study. With that we access to good performance to our main purpose of this study. Smart learning System achieves a many of well-done communications, a lot of technologies and facilities, and access to effective goals of educational process.

5.3 Recommendation

This document is intended to read by anyone who is interested in e-learning system. This is a technical document and the basic technical terms should be understood by the readers. The rest of this report contains logical and physical architecture of e-learning system.

5.3 Implication for Further Study

Gradually our project work will be continued. We will make update our system day by day and try to publish it paper so that user face more comfortable to use this application. Later on, we will add more feature that both student and admin are benefited. We will try to solve the extra small systems also. In future, we must need to focus on the challenges.

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Appendices

Appendix A: Project Reflection

As what I have learnt during the work on our android base application, "Smart learning" system, a high performance team with would be one with high performance and high relationship.

When we first started off, we did not think that our team was not the high-task one. But I think our group is identical in a sense that another group member has his own identical character and we actually complement each other.

It's just how important for the composition of a team is. You need to recruit the right member to form a high-performance team. Perhaps, we were quite lucky to be put in the same team. We give each other idea to develop content.

All in all, after doing this project together, I have to come to realized that high relationship is very important component in a team. It may be the factor that exuberance the team to achieve a high-task performance.

Lastly, we faced many problems when we developed this project but we solved these problems together. There are some parts of our project were difficult for us to develop but this was possible to complete because of the spirit of our team.

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CHAPTER 1 INTRODUCTION 1.1 Introduction E-Learning is a method that makes learning environment easy and vibrant. The large amount of student using technology. They have to prefer more dynamic environment. So, this is the most common and easy way that kind of people. They have some difficult to learn and communication. E-Learning systems make this easy. Because of modern equipment of e-learning helps to study from anywhere. The e-learning is basically an android and web base application. Multimedia helps us to more comfortable to learning. 1.2 Motivation If we want to increase the result of education, then we have to pay more attention to its four divisions. Those are Attention, Relevance, Confidence, and Satisfaction. So in the stage we are fully want that we are make an android app based on e- learning. That app helps student to achieve their goal. If we think the relevance of this work, hopefully this is very smart for student and teacher, because this is modern age of science. Most of people use internet, and most of student like to learn from internet. And this is better for our future because we have opportune and we use this. This part is also confidence to us. We just try to this app helps student and they use this. In future we try to provide more material and we think this is a successful app. 1.3 Rationale of Study Our main goal is to achieve the trust of teachers and students. In this system we work to some important subject of CSE. Admin provide CSE related materials' as like pdf, book, and video and also web link. Admin modify this system at any time. On other hand teachers and students need to verify their identity. Teacher also can give materials of their students and also give them advise. Students are accesses to download or visited all materials that admin or teacher already given. Student share their problem through by comment. And teacher or admin solve this problem by using reply section. Every student share or given feedback if they want. 1.4 Research Question We already noticed that bounteous work has done and introduced different model on e-learning. Among them some model gives extra ordinary performance. However, we need a huge dataset for achieving better performance. On the other hand a model needs high level Hardware requirements. Again most of the work has done on a special dataset. Now the hypothesis is how the model performs in our own dataset for smart learning. It is basically working in a simple vio where dataset is very small. 1.5 Expected Outcome We expect the outcome from our project is absolutely right, specific and befitting. We know that our education systems are not high. So this app helps to increase our education system. Student gain more knowledge easily and smartly. Offer

access to updated content, this is the prime benefit of this. Teacher quick delivery lessons of his student. Students are communication of their teachers to get quick solve. In this whole system or project only student get benefit. And we get a successful application. 1.6 Report Layout In this project a full overview of our system and related work and terminologies are given gradually. We recently made a survey on this similar work and try to what is more scope to develop this existing project. In chapter 2 we describe the challenges and facing problem which is making difficult to us. Another chapter 3 we describe data collection procedure. We also describe the requirement specification and try to disclose users demand. In, chapter 4 and 5 we disclose how we solve the problem and what we use to implement the project. CHAPTER 2 BACKGROUND 2.1 Introduction The e-learning was first mentioned in the CBT seminar. When the internet was not there and the students were allowed to do away with courses. During the 1840s Isaac pitman first applied it. Initially, it was made only for student but it became more common for day-to-day popularity. 2.2 Related Works There is a lot of work on e-learning, where its benefits are highlighted. So, this section we discussed about on those paper. There are a lot of communication element to communicate with teacher and student. We just went to make this work more straightforward and interesting. Nasr provide advice for those people who are unhealthy and silent people who cannot speak or hear anything [1]. Shishehchi is another organization that is working on surveying personal tricks of the learners. And they get well result [2]. We have the opportunity to use internet and make e- learning based application, also we hope we will achieve success. We recharge some paper about e-learning system. Another organization who analyzed the views of facilitators, 77% said they prefer e-learning, 17% prefer in the classroom and the rest say 7% they like it completely [3]. Online learning is growing common across in Australia. So their new goals were e-learning. The core subject of James Cook University was Educational for Cultural Diversity. This subject only gave pre-service teachers. E-learning only comes that time, when there is an abb and flow between making judgments. Most of student spends their free time in internet (NMC Horizon Report 2013). So, E-learning and other technology grow up different affordance more than physical campuses. On the other hand Mobile- learning is a part of e-learning. Many universities highlight their designing software and wireless technology with high practice guidelines for student and educator. They include these technology such computer, MP3, notebook & tablets. So, they highlight how e-learning or mobile-learning is more easy and attractive in their student and educator. In this place teacher share their experience between other and also take complex paraphernalia & difficult steps. Finally the process has created our own roles that are characterized by teachers as DJ metaphor [4]. 2.3 Research Summary We have developed our project/thesis for using as a completely android –based benefit to fulfill the system according to smart level. For this work we have researched some paper based on e-learning system. There are various systems of e- learning application but we think our application will be easy to use. Students are communication with teacher via comment or mail. And this is positive side that we make course the way they want. We believe that our project/thesis will increase positive communications and interaction between educators and it will form an integrated information management system for the learning and teaching processes. 2.4 Scope of the problem The main purpose of our work is to create an android app on e learning. It will be an easy way for student to learn and connect with teacher. Through this online process the student will get regular support, instruction & feedback as their study. We faced some problem as like we can't motivate all students to use this application. So we thought how it can be attractive to the student. On the other hand students are running short on time. There isn't enough time to

learning. Most of student thinks that they will not be able to keep up with the era or they will spend too much time. 2.5 Challenge Our biggest challenge is to keep pace with the current age. We have seen that those cannot go forward with the age, they have lost. We used the technology of the modern age. So you have to think about a lot if you want to have professional applications. Design one of them, than to-do list, schedules and more attention. One of the most common e learning challenges that overall lack of learning motivation. In order to spend e-learning, our application will be attractive and inspirational. We can make the application simple and easy. If it is better than multimedia connect. CHAPTER 3 RESEARCH METHODOLOGY 3.1 Introduction There are basically two platforms for e-learning, web base and android base. But we think that android has kept most parts. The first reason for its availability and demand id its reason. Our software is making complex work easier and therefore everyone is attracted to this. And the web is helping us in many different ways. We can take any information, design, documents and guideline that are essential for us. 3.2 Research Subject and Instrumentation Resource Allocation We can recourse in many ways. For this, we need to have planned ideas and plans. We plan to do the recourse achieve the goal in the future. Design Whole design of this project is user friendly. Modern and updated design tools have been used for this project. Also new concepts have been considered to make it user friendly. In future any kind of edit is allowed as time permits. Completion Every panel will be updated any time. Project Deliverables Project deliverable is basically bringing out the original output from a project. And keep those outputs together. Basically what is the progress of our project, what kind of values should be analyzed? 3.3 Data Collection Procedure In this part we will discuss the most important tasks. In data collection we make a survey. Two types of collection we made in this project. One is online Google survey form and other is off line survey form. In figure 3.3.1 and 3.3.2 shows this survey question and more information. Figure 3.3.1 Google Survey form Figure 3.3.2 Offline Survey form Data preprocessing: After data collection we are preprocessing this data. We used some method to implement this data in our project. Figure 3.3.3 Data set J48-Decision Tree: After we have data collection the data, we pre-process the data using j48 decision tree. Figure 3.3.4 J48-Decision Tree IBK Algorithm: Figure 3.3.5 IBK Algorithm 3.4 Statistical Analysis A project basically depends on its collected data. This data plays an important role in the whole project result. Every step is important in any project. If we collect wrong data or not take the original data than the whole project will be risk. And in future, this project maybe opposed. We will collect our required data and try to implement it. So that we are collected our project requirement as soon as possible. Then we started our work. Business Process Model Figure 3.4.1: Business process modeling Use Case modeling and description Figure 3.4.2: Use Case Data Flow Diagram DED is basically used to show a project graphical idea. Here we also process data if we want to. And also DFD gives a sense of what type of input it will output from. Figure 3.4.3 Data Flow Diagram 3.5 Implementation Requirements How much martial is needed for us to do a project. We can decide on which side we will take a closer look. So, implementation requirements are very important to in a project. Non-Functional Requirement Our system has some nonfunctional requirement that is described in the below: Reliability Requirement We are looking a system where both the students and the system authorities get dependencies. And all students can update their information without helping admin. Usability Requirement We are trying to simplify our system by thinking about our user. Implementation Requirement In our Smart Learning system we use only firebase and java. Delivery Requirement We hope that this system will take five months to complete the whole. CHAPTER 4 EXPERIMENTAL RESULT AND DISCUSSION 4.1 Introduction We have used various algorithms in this

project, J48 one of them. It has been used to check the project. It will be measurement and tell us how successful our project is or how much we have been done. Using another algorithm which is called Decision tree. Through this we can be aware of the work of each level. Again, we will decide on which level it will help and it will help [11]. 4.2 Experimental Result J48 has been created if our target is not desired. Basically, it gives a preview of our work. It has an algorithm that is tree classification which collect data and analysis those data. There are many features of this J48, but the ones that are extraordinary here are absent. Weka uses an algorithm J48 for data mining and its version is J48 C4.5.Weka fills check his data as well as we can cut trees. Until it is completely cleaned it will be repeated again. So, the result of his should be the highest level of accuracy. Because it extends to the highest level of accuracy. We think it give us the best result [13]. Counting Gain: We use entropy only that time when data disorder is measured. The entropy of → y calculate by this way. n Entropy (→) = − Σ |yi | |yi | y log( ) | →| y |→| y=1 y Entropy (j|→) = |yj| log(|yj|) y |→| y |→| y And Gain, Gain (→ , j) = $Entrnny$ (→ −Entropy(j| →) y y y 4.3 Descriptive Analysis There are some specific aspects to follow in order to design a system. Where will be its description, module and the whole system will be described. In chapter 3 overall system design of our application has been showed, where architectural design, use case diagram, Business process modeling and data flow diagram included. Whole design of this project is user friendly. Modern and updated design tools have been used for this project. Also new concepts have been considered to make it user friendly. In future any kind of edit is allowed as time permits. Architecture Design One of the most important aspects of a system is its architecture. In architecture, the system's conduct behavior, structure and work plan are described. Our application's architectural design shows that- ‣ Users search the application name. ‣ Play-store finds the application & user install this application. ‣ Database show the information. Figure 4.3.1: Architecture Design Front-end Design Front-end design is a process that gives us a sense of work before we finished our work. Front-end tools; we used only java for our Smart Learning Application. Figure 4.3.2 Front-end Design Relationship Back-end Design Backend design is the part of your system that the user cannot see. Moreover, it keeps track of the user's identity and helps him get information. In backend design we use firebase and java. Figure 4.3.3 Back-end Design Relationship 4.4 Summary We came to make this system with all of our efforts. We think we have given our best. But again we think there are some limitations here. We will work to overcome these limitations in the future. To overcome this limitation, we have to work more on this system. But end of the day we can say that we are not too far from our goal. CHAPTER 5 SUMMARY, CONCLUSION, RECOMMENDATION AND IMPLICATION FOR FUTURE RESEARCH 5.1 Summary of the Study & Conclusion We consider the Smart learning System will be integrated helpful, supportable, servable system to both Admin and teachers to achieve their works in complete manner. Withal, we believe Smart learning System reduce the time, cost, effort, and potentials which are needed in study. With that we access to good performance to our main purpose of this study. Smart learning System achieves a many of well- done communications, a lot of technologies and facilities, and access to effective goals of educational process. 5.3 Recommendation This document is intended to read by anyone who is interested in e-learning system. This is a technical document and the basic technical terms should be understood by the readers. The rest of this report contains logical and physical architecture of e-learning system. 5.3 Implication for Further Study Gradually our project work will be continued. We will make update our system day by day and try to publish it paper so that user face more comfortable to use this application. Later on, we will add more feature that both student and admin are benefited. We will try

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