

An Automated Attendance System Using Fingerprint

A report submitted to the Department of English, AIUB, in part-fulfillment of the requirements of the final examination in Business Communication, **Spring 2019-2020**.

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to

Course Teacher: AMAL MAJUMDER

Date of Submission:18/05/2020

American International University-Bangladesh (AIUB)

Forwarded Letter

Date: 18-05-2020

AMAL MAJUMDER

Business Communication

American International University Bangladesh

Subject: Report on Automated Attendance System For Educational Institutes

Dear Sir,

I have the pleasure to submit our report titled “**Automated Attendance System For Educational Institutes**”. The report allowed me to know how a student can simply and effectively give his attendance without losing any time.

Our research was on finding an effective and efficient way for all educational institutes to collect attendance.

From the research I found out that, dream jobs of all the average CS graduates are very different from the reality in Bangladesh. The job sector is limited in our country but there are lots of jobs abroad in CS sectors and online freelancing sectors for them.

Thank you for giving us the chance to do this report.

Yours sincerely,

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Acknowledgment

I am heartily thankful to our course instructor, whose encouragement, supervision and support from the preliminary to the concluding level enabled us to develop an understanding of the subject.

I am thankful to all the students, ex-students, and teachers who participated in this study. We greatly appreciate their sincere co-operation.

Also I want to thank some of my friends who helped me with collecting all analytical data and interviewing all the subjects.

Lastly, we offer our regards and blessings to all of those who supported us in any respect during the completion of the study.

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Abstract

The purpose of this study is to investigate/to find out.....To conduct this report qualitative/quantitative approach is followed regarding data collection. What have you found in general from the data? What are the major reasons for..(optional)? What are the given suggestions in general to improve the situation....

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1.0 Chapter 1: **Introduction**

It is a software developed for maintaining the attendance of the student daily in the institution. Here the staff, who are handling the subjects, will be responsible to mark the attendance of the students. Each staff will be given with a separate username and password based on the subject they handle. An accurate report based on student attendance is generated here. This system will also help in evaluating the attendance eligibility criteria of a student. Report of the student's attendance on a weekly and monthly basis is generated

1.1 Chapter 1:**System Analysis**

Analysis can be defined as breaking up of any whole to find out their nature, function, etc. It defines design as to make preliminary sketches of; to sketch a pattern or outline for a plan. To plan and carry out especially by artistic arrangement or in a skillful wall. System analysis and design can be characterized as a set of techniques and processes, a community of interests, a culture, and an intellectual orientation. The various tasks in the system analysis include the following.

- i. Understanding application.
- ii. Planning.
- iii. Scheduling

- iv. Developing candidate solution.
- v. Performing trade studies.
- vi. Performing cost-benefit analysis.
- vii. Recommending alternative solutions.
- viii. Selling of the system.
- ix. Supervising, installing, and maintaining the system.

This system manages the analysis of the report creation and develops manual entry of the student attendance. First design the student's entry form, staff allocation, and time table allocation forms. This project will help the attendance system for the department calculate percentages and reports for eligibility criteria of examination. The application attendance entry system will provide a flexible report for all students.

2.0 Chapter 2: Methodology

2.1 Method used

In this report We used quantitative and qualitative data.

As a statically analytical report the main method We used is quantitative. Because We needed to made statistics on the number of Gender, Age, Marital Status, Time Spent on Social Media, Used Device, some statistically asked questions on Automated System of Attendance and about the current CGPA of students, compared all the data. So quantitative should be used to make such an analytical statistic.

Also We used a qualitative method to survey the psychology of students about some asked questions about using their social media and attendance system. It helps me to identify the problems by comparing the quantitative data.

2.2 Selection of subjects/participants

As this report is on not only the CS graduates and undergraduates of AIUB but also for any gender, age, and institution, all of my subjects are organized as so. I took data from not only not only the CS graduates and undergraduates of AIUB but also from every gender, age, and institution

The reason for every aged people because of the current situation of our world, we needed to know the reaction of not only from AIUB students but also from other institution's students and people.

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2.3 Data analysis

I gave a questionnaire to all the subjects through Google form and collected some data. Using those data I did some different static graphs compared them with each other.

Graph and analysis:

2.3.1 Ratio of male and female Participants -

At first, we wanted to know about the number of males and females taking part in this survey. So we asked them to define so. It appears that males participated more than females.

Define Your Gender
42 responses

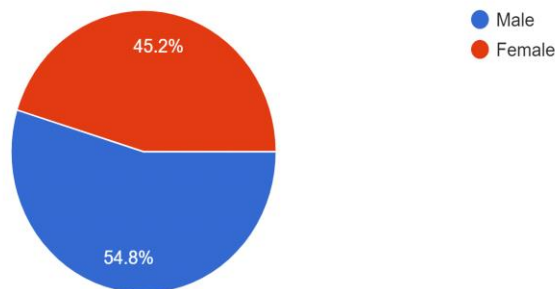


Figure: 01

2.3.2 Ratio of different aged participants-

Of what aged people we are dealing with, to define that we also added a subject to describe their age. We did not want to offend anyone that is why we kept it to a range of ages. It appears that most of the participants are from age 20 to 25 as we took the data most from AIUB.

Define Your Age
42 responses

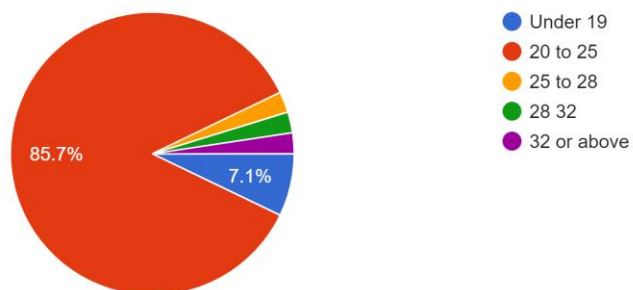


Figure: 02

2.3.3 Ratio of married and unmarried participants -

The whole survey could change at a point where participant's experiences of using social media could vary because of their marital status. And it appears that most of the participants are unmarried as expected and an equal ratio of people is from the status of married and other relationships.

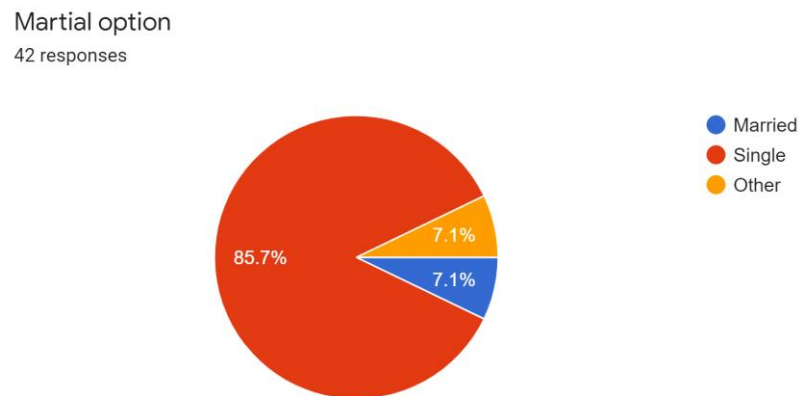


Figure: 03

2.3.4 Ratio of the usage of Social media among the participants -

As expected in this current situation of world participants are to spend more time on social media, either for work or just to spend some time. But the ratio is kind of high for participants to spend time above 180 minutes a day on social media.

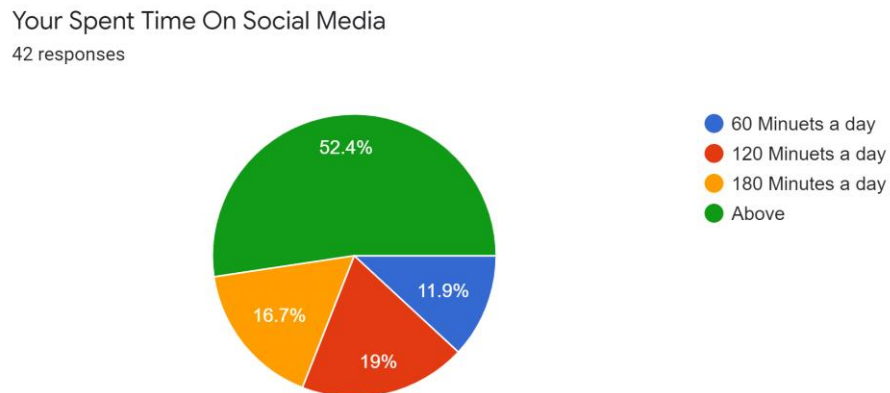


Figure: 04

2.3.4 Ratio of used device for using social media -

This depends on the participants which device they prefer more. But we can have a prediction which device will get the higher ratio. And of course it is Mobile phones and followed by that comes Laptops.

Device you use for Using Social media
42 responses

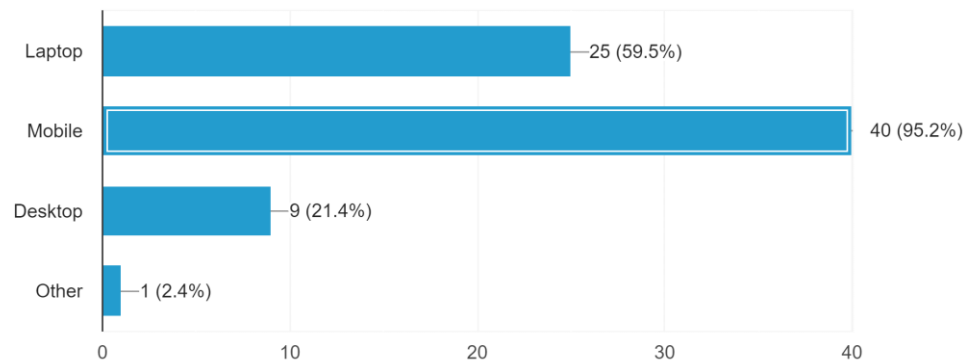


Figure: 05

2.3.4 Ratio of opinion of participants -

As expected this also depends on the participants to decide as this is their choice. But this current situation of the world also has an impact on their opinion. Most of the opinions will be for social media-based education system. But a majority of people are out of this service in our country.

Can social media be used as a base for study? *

42 responses

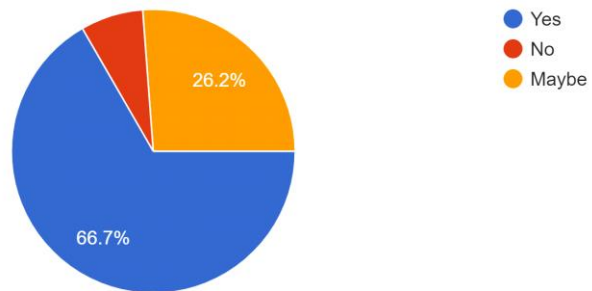


Figure: 06

2.3.4 Ration of opinion for “How the social network is used for study” -

This ratio depends on the participant's institutes, because depending on their resources they will have the decision of how they are going to use it for study.

How are social networks used for study? *

42 responses

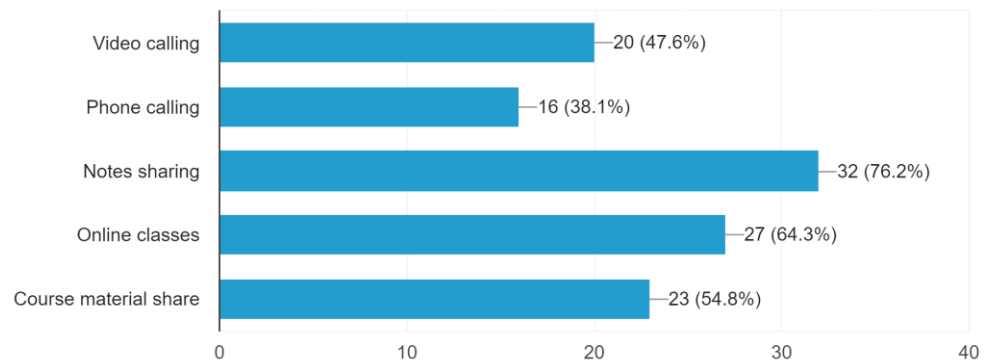


Figure: 07

2.3.4 Ratio between online study and physical study -

From the data we collected a very interesting ratio. Most of the participants disagreed with the idea of online study, this could be because they are not familiar with this system of study. A huge part of the participants is neutral in their opinion, as they have fewer ideas or have no idea what is this all about. We can see a few people have agreed with this idea, it seems they are familiar with the idea.

Is online learning better than physical study?
42 responses

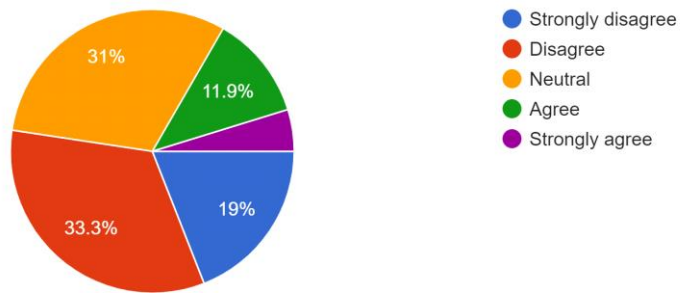


Figure: 08

2.3.4 Ration of the usage of invested time online among students -

Now this is a ratio between those students who are to invest their precious time or can be said waste their precious time online and those who do it less.

As student how much time do you think to be invested online ?
42 responses

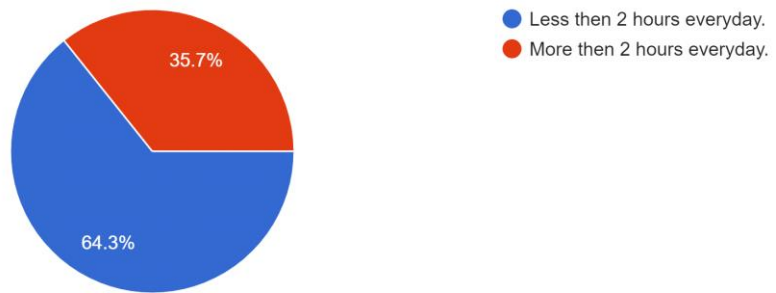


Figure: 09

2.3.4 Ration between “Strongly Agreement”, “Agreement”, “Neutral”, “Disagreement” and “Strongly Disagreement” for the “Automated Attendance System” -

From the data We collected the opinions of the participants on the "Automated Attendance System" for educational institutes. There is a set of question-based on which we collected the opinions.

The questions are -

- Every University needs this kind of system.
- The system is efficient and effective
- Attendance sheet is easy to allocate
- Record keeping is more organized
- Easy to track student absences
- The format of the report for students
- Delivery of reports for the students are easy to produce
- The process to inform students status to parents are effective
- Students are not difficult to contact to attend the discipline trials via email
- The potential of losing attendance sheet is low

Please respond to the following statements indicating your agreement or disagreement with each statement listed below by checking the appropriate box to the right of the corresponding statement. The statement refers to the "Automated Attendance System".

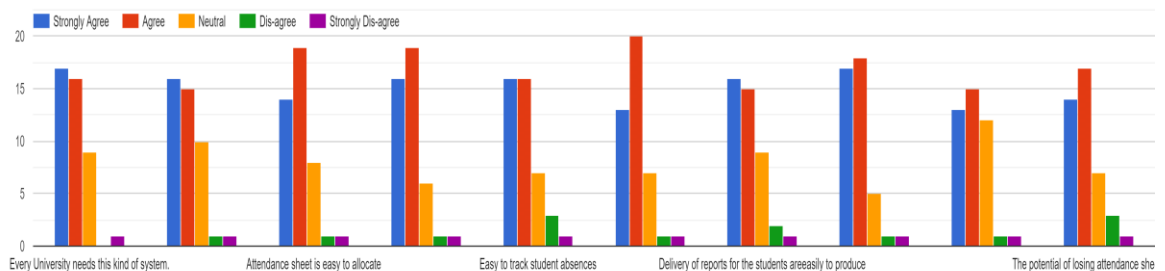


Figure: 10

2.3.4 Ratio between the CGPA s of the participants -

Now this survey was not to offend anyone, just to know which range of CGPA these students are from. To let the participants be comfortable we kept it to a range so they do not get offended.

What is your current Cgpa?(Don't Be Offended) ?

38 responses

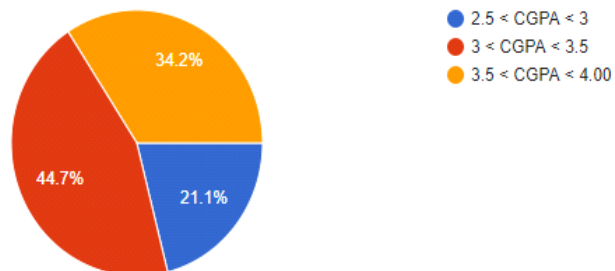


Figure: 11

3.0 Chapter: Findings and Analysis

3.1 Findings

From the data taken from the Automated Attendance System Survey the statistic result of Gender:

Male	23%
Female	19%

Age :

Under 19	36%
20 to 25	3%
25 to 28	1%
28 to 32	1%
Above 32	1%

Martial Option:

Single	36%
Married	3%

Our spent time on media :

120 minutes a day	8%
4 hour a day	20%
Above 4 hour	60%
Others	14%

Device you use for Using Social media

Laptop	59.5%
Mobile	95.2%
Desktop	21.4%
Other	2.4%

Can social media be used as a base for study?

Yes	66.7%
No	7.1%

Maybe	26.2%
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How are social networks used for study?

Video calling	47.6%
Phone calling	38.1%
Notes sharing	76.2%
Online classes	64.3%
Course material share	54.8%

Is online learning better than physical study?

Strongly disagree	19%
Disagree	33.3%
Neutral	31%
Agree	11.9%
Strongly Agree	4.8%

As a student how much time do you think to be invested online?

Less than 2 hours every day	64.3%
More than 2 hours every day.	35.7%

3.2: Responses on Automated Attendance System

Please respond to the following statements indicating your agreement or disagreement with each statement listed below by checking the appropriate box to the right of the corresponding statement. The statement refers to the “Automated Attendance System”.

1. Every University needs this kind of system.

Strongly Agree	17
Agree	16
Neutral	9
Disagree	
Strongly Disagree	1

2. The system is efficient and effective

Strongly Agree	16
Agree	15
Neutral	10
Disagree	1
Strongly Disagree	1

3. Attendance sheet is easy to allocate

Strongly Agree	14
Agree	19
Neutral	8
Disagree	1
Strongly Disagree	1

4. Record keeping is more organized

Strongly Agree	16
Agree	19
Neutral	6
Disagree	1
Strongly Disagree	1

5. Easy to track student absences

Strongly Agree	16
Agree	16
Neutral	7
Disagree	3
Strongly Disagree	1

6.The format of the report for students

Strongly Agree	13
Agree	20
Neutral	7
Disagree	1
Strongly Disagree	1

7. Delivery of reports for the students are easy to produce

Strongly Agree	16
Agree	15
Neutral	2
Disagree	2
Strongly Disagree	1

8. The process to inform students status to parents are effective

Strongly Agree	17
Agree	18
Neutral	5
Disagree	1
Strongly Disagree	1

9. Students are not difficult to contact to attend the discipline trials via email

Strongly Agree	13
Agree	15
Neutral	12
Disagree	1
Strongly Disagree	1

10. The potential of losing attendance sheet is low

Strongly Agree	14
Agree	17
Neutral	7
Disagree	3
Strongly Disagree	1

What is your current GPA?(Don't Be Offended) ?

$2.5 < \text{CGPA} < 3$	44.7%
$3 < \text{CGPA} < 3.5$	24.1%
$3.5 < \text{CGPA} < 4.00$	34.2%

3.2 Analysis of the result

At first, from the data, we can see that people are very interested in media or social browsing like Facebook YouTube, etc. From the survey, it appeared that these are more interesting, very high risky. Single or married people do not know how they react like in this but we can call it much time expense. It has some advantage and some disadvantage:

Advantages:	Disadvantages:
1. Students can gather some knowledge using YouTube.	1. Students day by day lose there creativity and day by day they are getting lazy.
2. People can get information from YouTube, they can learn many things through YouTube.	2. They try to solve everything using google.
3. Also online class can help a student like they are at the academy.	3. Also, day by day cybercrime is increasing for this media.

4.0 : Chapter: Conclusion

4.1 Summery: Our proposed project, —An Automated Attendance System using fingerprint has been envisioned to reduce the errors that occur in the traditional (manual) attendance taking system. Person wise

fingerprints are unique. that's why we have taken this as a source of attendance system. The aim is to automate and make a

system as useful as an Institute to the organization.

Fingerprints play a key

role in machine functioning

The developed system is very helpful in saving valuable student and lecturer

time, as well as paper and report generation at the necessary time.

The program will record the clock-in and clock-out time of students and

employees very conveniently using their fingerprints to avoid impersonation and minimize absence rates. This also removes most administrative work and minimizes human mistakes, prevents punching of

proxies, eliminates time-related conflicts, and helps to monitor and preserve records of attendance.

4.2 Limitation:

1. 1. Late attendance system will not be counted as there will be no difference between those who came first and those who came later. everyone will get attendance.
2. Managing a huge database can be seen as a limitation, because there will be a huge data of attendance of students as well as teachers through the semester or year.

4.3 Future direction: The proposed plan for An Automatic Attendance System using fingerprints includes:

- I. Enrolment of student faces.
- II. Capturing the video of students.
- III. Face detection and feature extraction. also including late attendance system.so that it will be understandable who came on time.
- IV. Late attendance will be count after a specific time.

5.0 Recommendation

Our recommendation to students and all other participants is, you have to think about the current situation of the world. If you want to be successful in any sector of study or work, you have to like it and the only way to shine in your sector of study is by showing creativity, making every opportunity count, making yourselves capable of doing any situation, enriching yourselves with extra knowledge within this time of pandemic and most of all by not getting frustrated.

This survey was to accrue the knowledge about the psychological opinion of our participants about the usage of social media, online education, and most importantly the attendance system.

Worldwide and administration of educational institutions is driven with the regular participation of graduates, this affects their overall academic success

and eventually affects the schooling of students. Currently, traditional ways of taking part call their name/roll no or sign on a Paper, which also takes

virtually time and is less secure because proxy attendance is very likely. Therefore, a student attendance supervision system based on a computer is

necessary to assist the faculty in performing maintenance.

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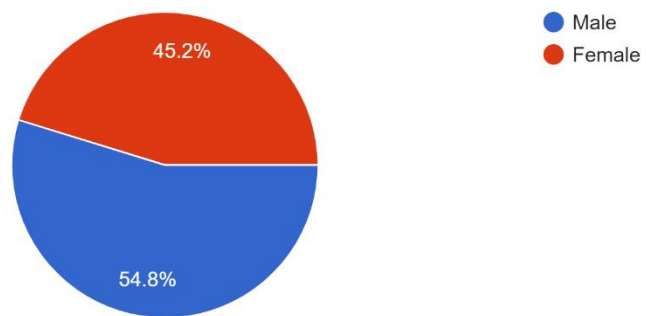
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6.0: Appendix

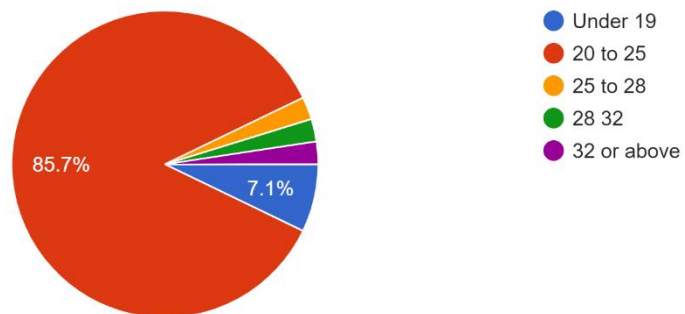
Define Your Gender

42 responses



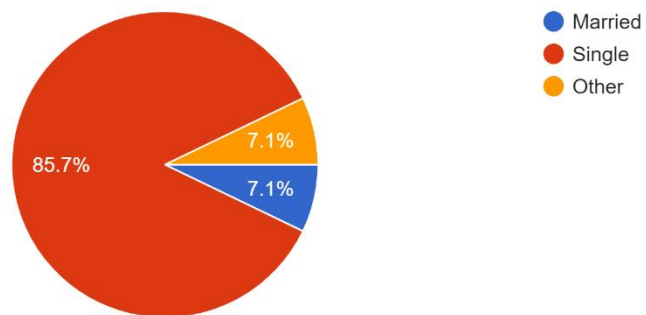
Define Your Age

42 responses



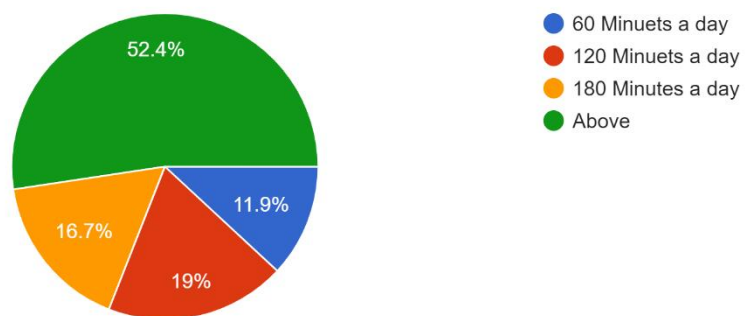
Marital option

42 responses



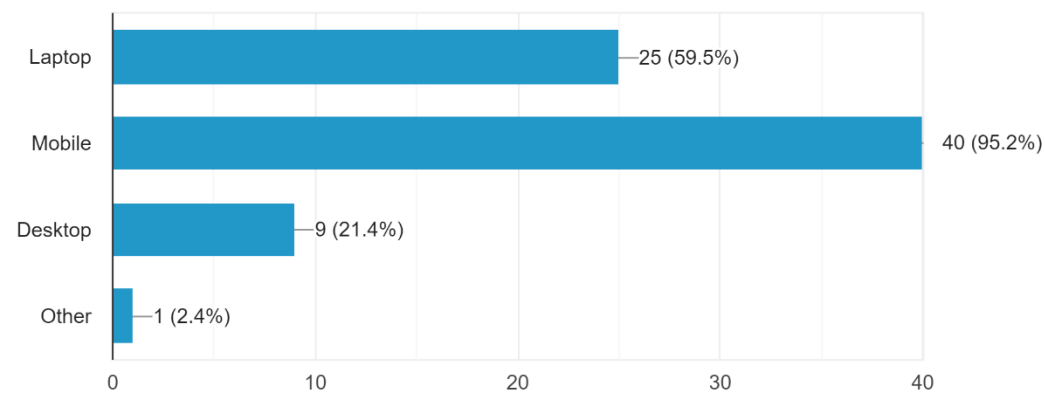
Your Spent Time On Social Media

42 responses



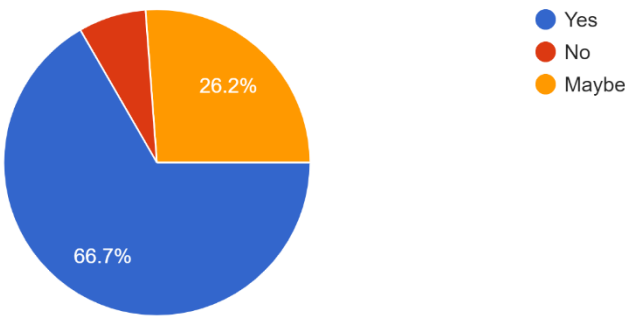
Device you use for Using Social media

42 responses



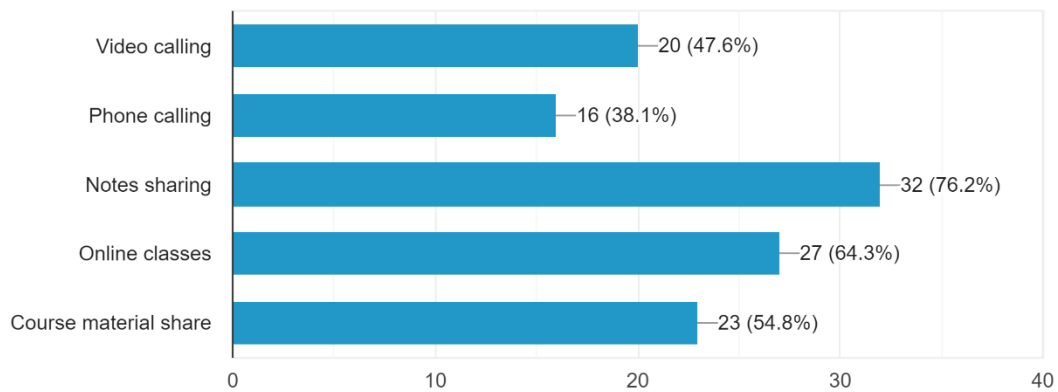
Can social media be used as a base for study? *

42 responses



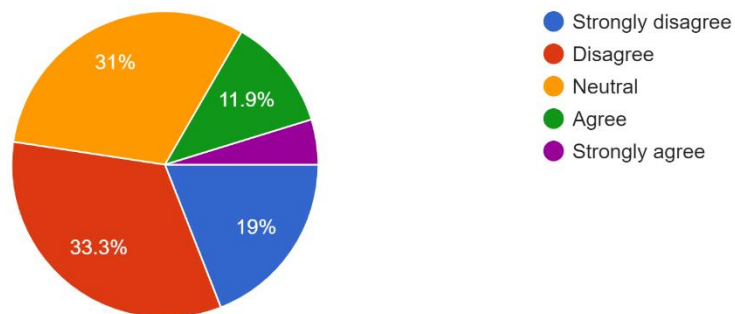
How are social networks used for study? *

42 responses



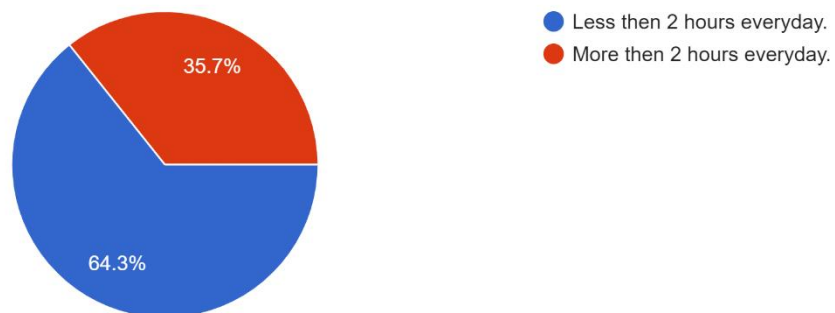
Is online learning better than physical study?

42 responses

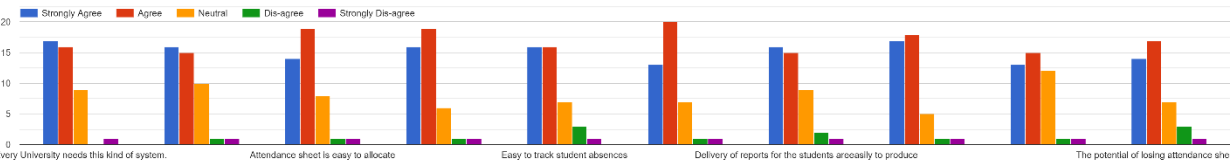


As student how much time do you think to be invested online ?

42 responses



Please respond to the following statements indicating your agreement or disagreement with each statement listed below by checking the appropriate box to the right of the corresponding statement. The statement refers to the "Automated Attendance System".



What is your current Cgpa?(Don't Be Offended) ?

38 responses