IE403 - Human Computer Interaction
Group 24
PROJECT REPORT

1. *TITLE:*
Designing meaningful interactions for digital well being

2. *GROUP MEMBERS:*
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3. *METHODOLOGY:*
a. Study design:
   1. **How did you design the experiment?**
      - We employed a mixed approach to analyze mobile gaming behavior and its impact on digital well-being.
      - We defined a certain set of research questions that were to be asked to the target population.
      - The research consisted of both quantitative surveys and qualitative user interviews to gather insights into the participants' gaming habits, their addiction tendencies, preferences and experiences.
      - *Quantitative Surveys:* We designed a survey questionnaire comprising multiple choice questions to quantify various aspects of mobile gaming behavior including gaming habits and attitudes.
      - *Qualitative User Interviews:* In addition to the surveys, we conducted interviews with a subset of participants to delve deeper into experiences and challenges related to mobile gaming. The interviews were designed to explore and understand specific themes like addiction and coping strategies.

2. **Who are the participants?**
   - The study was conducted among all the age groups ranging from age 12-60 years, and for a qualitative interview the age group was 16-22 to understand the behavior and gaming habits of each individual.
3. **How many participants?**
   - In the survey conducted via google forms over 160 people submitted their responses, and around 35 participants were contacted for personal interviews.
4. **What are the demographics of the participants?**
   - The demographics included participants of different age groups and gender with varying levels of experience with mobile gaming , ranging from casual gamers to frequent enthusiasts.

4. ***EXPERIMENT/STUDY CONDUCTED:***

   What was the experiment?
   - The experiment was designed in such a way that included studying and analyzing different kinds of games being played , average duration of the play, gaming habits, addictive features, coping mechanisms etc.
   - The experiment was conducted using surveys and user interviews to investigate the relationship between gaming behavior and digital well being among people of different age groups, gender and gaming experience.

   What was the hypothesis?
   - We found that the majority of people in the age group 14 - 22 years were addicted to gaming knowingly or unknowingly.
   - Prolonged and excessive mobile gaming among school and college students has led to negative consequences like neglecting responsibilities and declining academic/work performance.
   - Majority of people would like to use a tool or feature that is designed to manage their screen time and mobile gaming habits.

What was studied?
- We conducted a survey via google forms and further interviewed a subset of the population to study the mobile gaming patterns and behavior.
- Questions asked in the survey form are as follows:

Question	Type	Options
Name	Text	User input
Age Group	Single Choice	6-16 years, 17-25 years, 26-35 years, 36- 50 years , above 50 years
Gender	Single Choice	Male, Female, prefer not to say
What type of games do you play?	Multiple Choice	Action/adventure, sports, puzzles, card/board games, strategy games, others.
What draws you to gaming ?	Multiple Choice	Entertainment, social interaction, relaxation, competition, escape real world, kill time, others
How often do you play games on your mobile?	Single Choice	Daily, 4-5 times a week, once a week, occasionally(once or twice a month), rarely, Never
On an average, how many hours do you spend playing mobile games?	Single Choice	<1 hour, 1-2 hours, 2-4 hours, 4-6 hours, >6 hours
Where do you usually play your games?	Multiple Choice	At home, before bed, socializing with friends/family, during study breaks, while traveling, others

Do you think you spend too much time playing mobile games?	Single choice	Yes, No
Do you manage to find time to play mobile games during your exams?	Single choice	Yes, No
How often do you find yourself thinking about gaming when you are not playing?	Single choice	Always, rarely, sometimes, never, other
Have you ever felt addicted to a mobile game?	Single choice	Yes, no
Do you find it difficult to stop playing a game once you start?	Single choice	yes , no, sometimes
How do you prefer playing mobile games?	Single choice	Alone, with friends, with strangers, other
Have you ever set personal limits on your game time?	Single choice	Yes, No
How do you feel after a gaming session?	Multiple choice	Happy, Sad, frustrated/disappointed, anxious, relaxed, other
Do you feel irritable or anxious when you are unable to play games for a long period of time?	Single choice	Yes, No
Have you ever experienced negative consequences like declining academic performance or neglecting responsibilities?	Single choice	Yes, No
Do you feel pressured to play mobile games by your friends?	Single choice	Yes, No, sometimes
Do you spend money on mobile games you play?	Single choice	Yes, No

Are there any features that you do not like in a mobile game?	text	User input
Can you share some strategies to reduce gamer's game play time?	text	User input

● *Questions asked in user interviews:*

| |
| --- |
| Name of the user |
| Age of the user |
| How long have you been playing mobile games? |
| What initially attracted you to them? |
| What genre of games do you play? |
| Can you describe your typical gaming session on a mobile device? |
| How often do you play and for how long each time? |
| What is your game and total screen time? |
| What frustrations or challenges do you encounter while playing mobile games? |
| What keeps you engaged or motivated to continue playing a mobile game over time? |
| Do you feel addicted to it? |
| Have you ever had your life activities disturbed due to it ? |
| Do you think your mental health is affected? Do you think your behavior is affected? |
| Are there any features or tools you wish mobile games offered to promote healthier gaming habits? |
| Have you ever used such a tool to reduce your time ? |
| How likely would you be to use a tool or feature designed to help you manage your gaming habits on a scale of 1 to 10? |

5. *FINDINGS:*

1. For each question asked or task given, what did you observe in Participants?
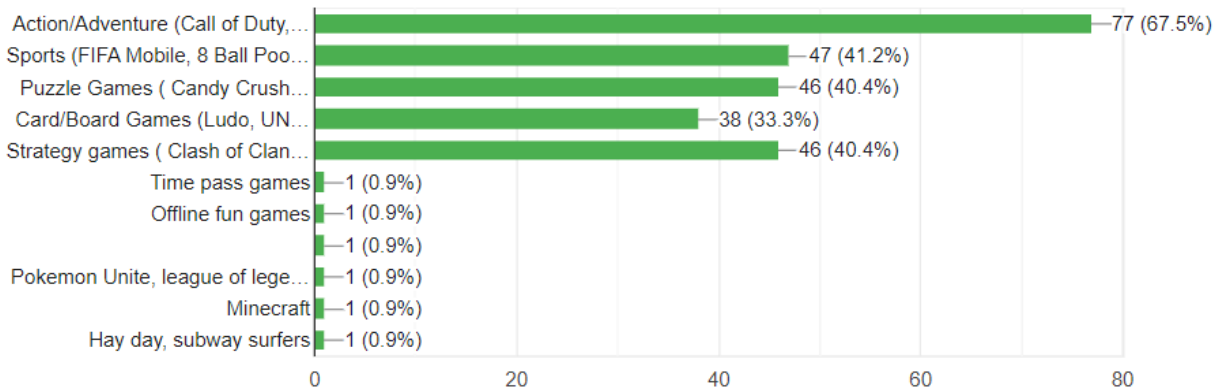
- ***Based on user survey:***

1. Majority of the participants were between the age groups of 12-19 years (teenagers) and 20-30 years of age.
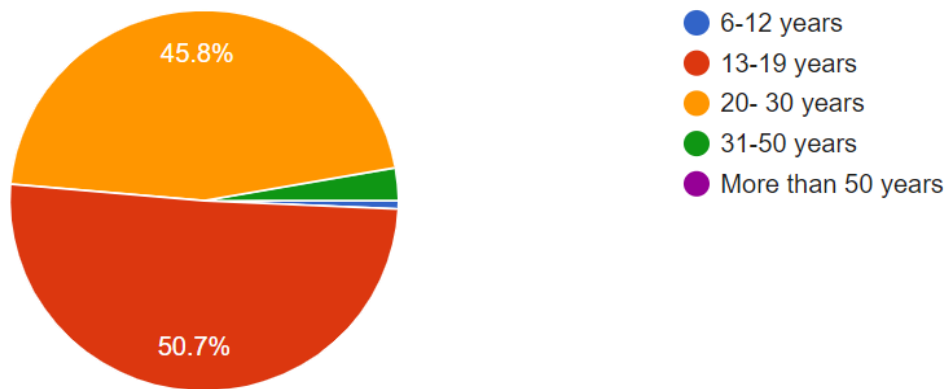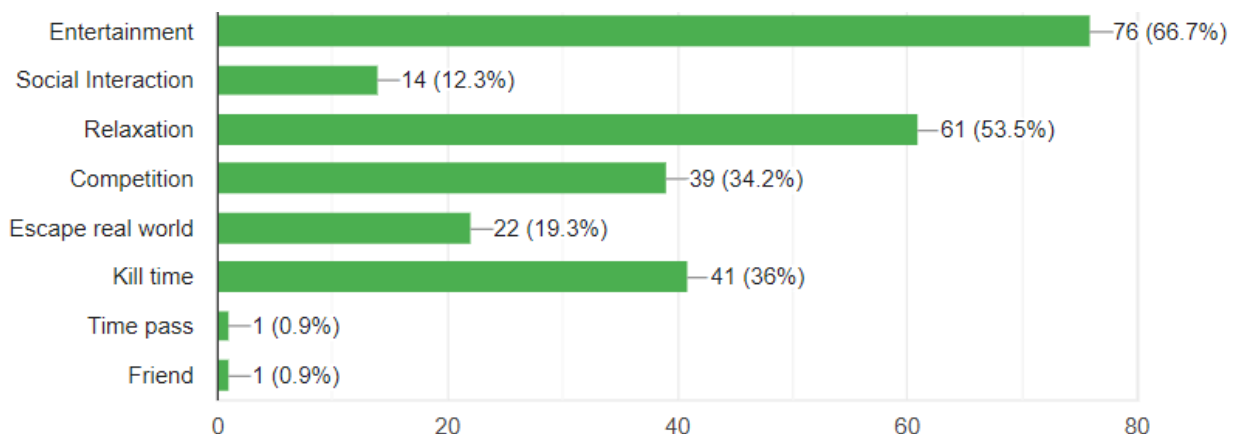

2. We concluded that a majority of the people prefer mobile gaming over laptop/console gaming.
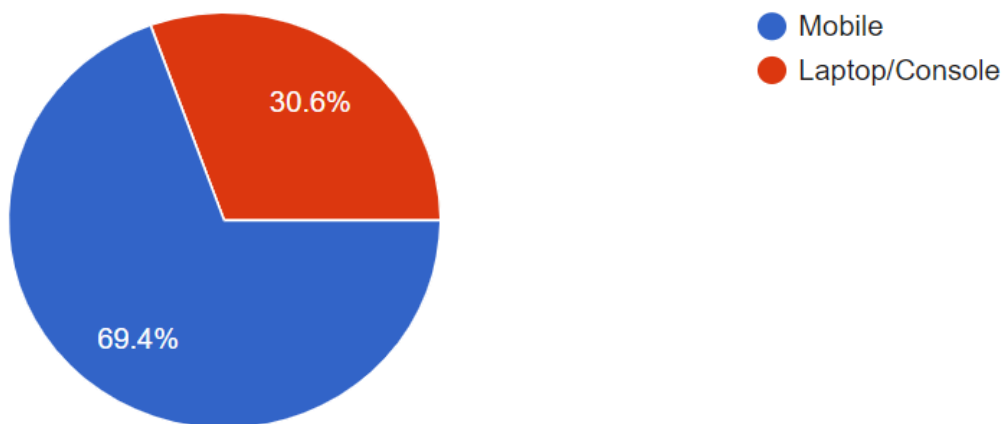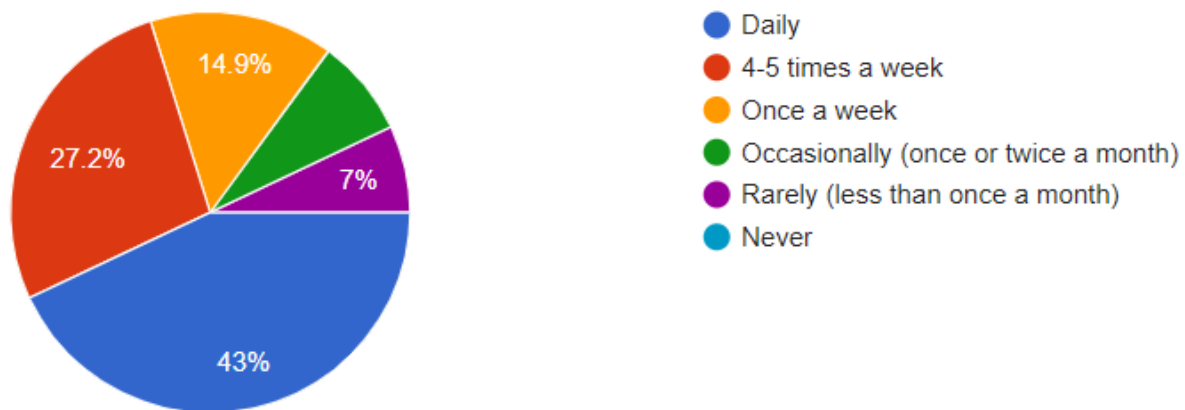
3. The survey revealed that participants preferred action and adventure games available on mobile devices which implied that people find these genres to be quite engaging and appealing.

|	
Action/Adventure (Call of Duty,...	77 (67.5%)
Sports (FIFA Mobile, 8 Ball Poo...	47 (41.2%)
Puzzle Games (Candy Crush...	46 (40.4%)
Card/Board Games (Ludo, UN...	38 (33.3%)
Strategy games (Clash of Clan...	46 (40.4%)
Time pass games	1 (0.9%)
Offline fun games	1 (0.9%)
	1 (0.9%)
Pokemon Unite, league of lege...	1 (0.9%)
Minecraft	1 (0.9%)
Hay day, subway surfers	1 (0.9%)

4. More than 50% of the respondents engage with gaming because of entertainment which shows that gaming is largely seen as a leisure activity. It is primarily used for relaxation and time-killing purposes by users. It provides a convenient way to fill idle moments, and allows users to connect with friends and other players online. While competition and escapism plays a role, it is not as dominant as entertainment, relaxation, and time-killing tendencies in mobile gaming behavior.

|	
Entertainment	76 (66.7%)
Social Interaction	14 (12.3%)
Relaxation	61 (53.5%)
Competition	39 (34.2%)
Escape real world	22 (19.3%)
Kill time	41 (36%)
Time pass	1 (0.9%)
Friend	1 (0.9%)

4. A significant portion of the surveyed users reported playing games on their mobile devices on a daily basis. Even with this consistency, most participants stated that they played mobile games for less than an hour a day on average. This indicates a prevalent habit of daily mobile gaming among the respondents and indicates that gaming has become an integral part of their daily routines and leisure activities.

- ● Daily
- ● 4-5 times a week
- ● Once a week
- ● Occasionally (once or twice a month)
- ● Rarely (less than once a month)
- ● Never

5. Respondents primarily play mobile games at home, right before bed, and during study breaks. Some people also play video games to socialize with friends and family and while they are traveling.
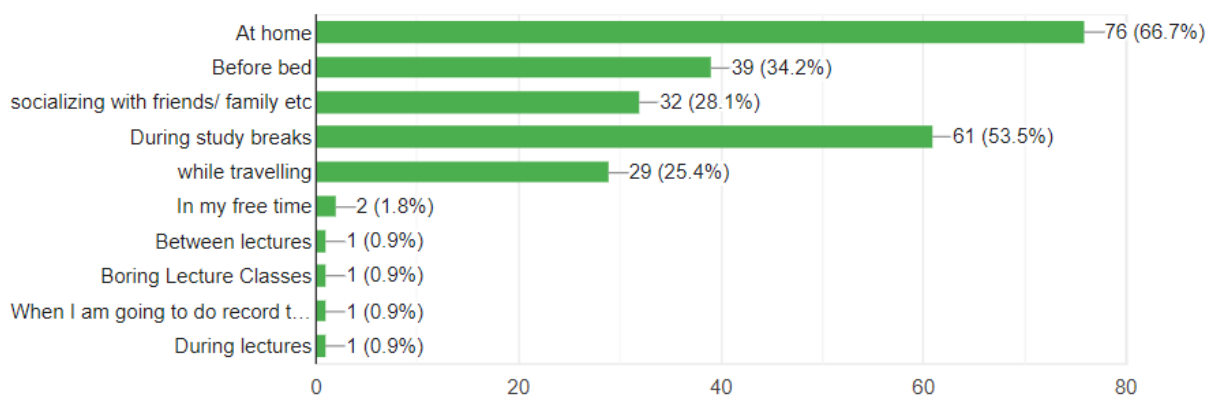
6. The results of the poll indicate that most participants do not think they play mobile games for an excessive amount of time. However, a significant number of people said they were able to find time to play mobile games even during exams. This disparity suggests that there may be a mismatch between how one views oneself and how much one prioritizes gaming over other responsibilities.
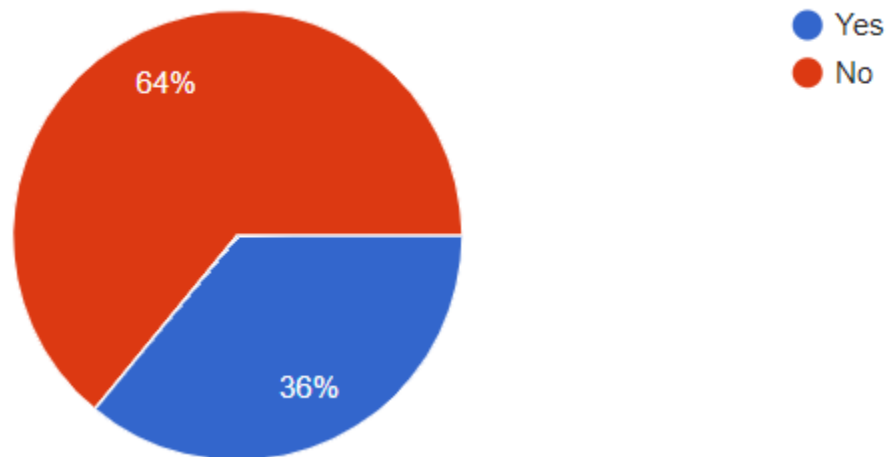

**64% of people think that they do not spend too much time playing mobile games.**
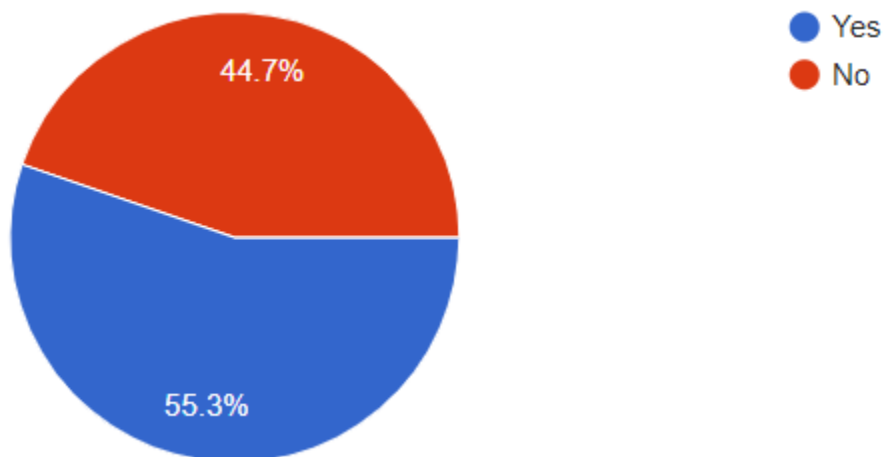
But 55.3% people manage to take out some time for mobile gaming during exams.

7. The survey showed that 38.6% of respondents occasionally think about gaming even when not playing, indicating a noticeable interest in gaming during idle moments. A smaller but a notable proportion, 9%, always think about gaming, indicating a stronger attachment to gaming as a hobby. These findings highlight the lasting impact of gaming on mental engagement, even when they are not actively engaged in gameplay.
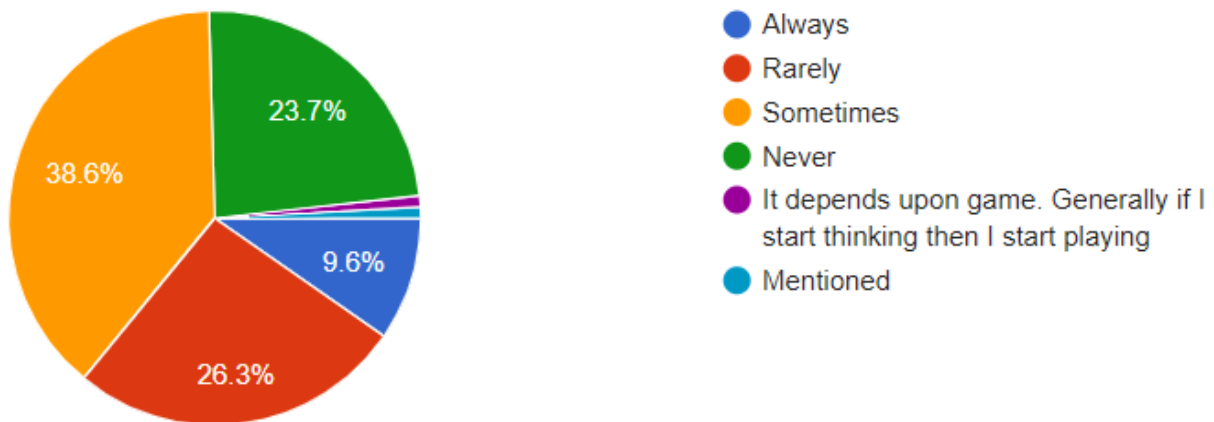
8. The survey revealed mixed experiences with mobile game addiction, with 28.9% feeling occasionally addicted, 28.1% experiencing addiction to some extent, and 43% not feeling addicted at all. Some users may be hesitant to admit addiction due to stigma or judgment concerns, in spite of this the survey highlights the significant impact of mobile gaming on individuals, with a notable portion acknowledging feelings of addiction or dependence.
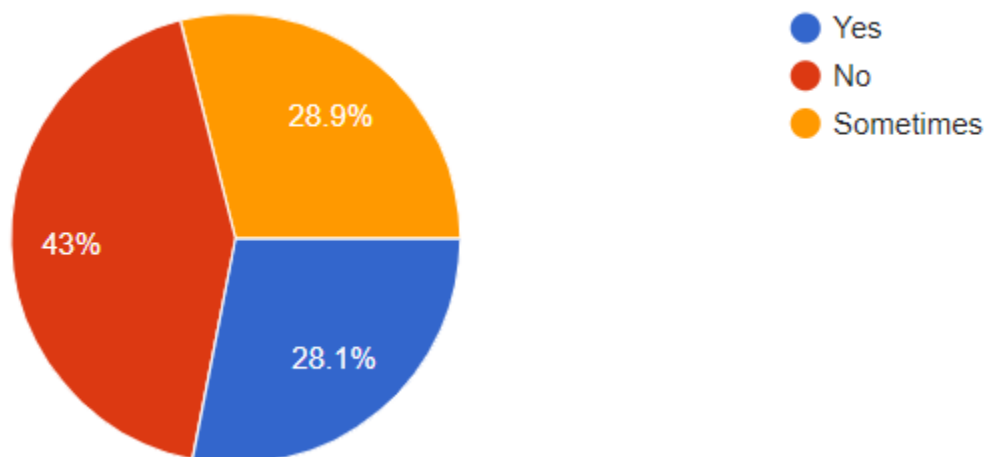
9. The survey shows a diverse range of responses on stopping mobile game play. Half of respondents found it easy, suggesting self-control. However, nearly a quarter faced challenges, and 28% experienced difficulties, indicating a significant subset struggled with self-regulation or addictive tendencies. These findings highlight the complex nature of individuals' mobile gaming relationships.
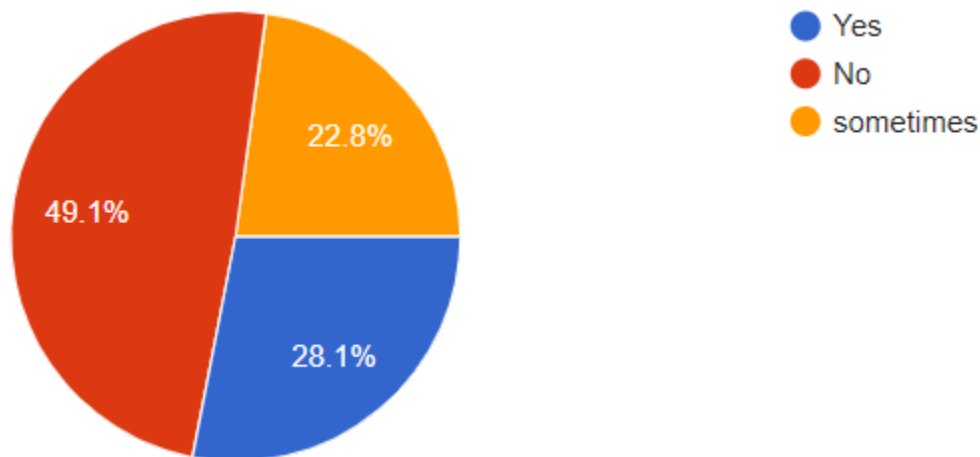
Legend:
- ● Yes
- ● No
- ● sometimes

22.8%
49.1%
28.1%

10. Many people in the survey stop playing mobile games when they feel satisfied or bored, showing they're aware of their enjoyment levels and know when to take a break. About a fifth of respondents set time limits on their gaming sessions to manage their habits better. They might use alarms or features in the games to help stick to these limits.

Legend:
- ● I have set a time limit
- ● I stop when I feel satisfied
- ● I stop when I feel bored
- ● I don't stop until i win with great gap
- ● 5 min is more than enough for me
- ● Not thought about that
- ● i just got too bored that i deleted it for good
- ● I generally play 2 matches and then stop
- ● I don't stop

34.2%
38.6%
21.9%
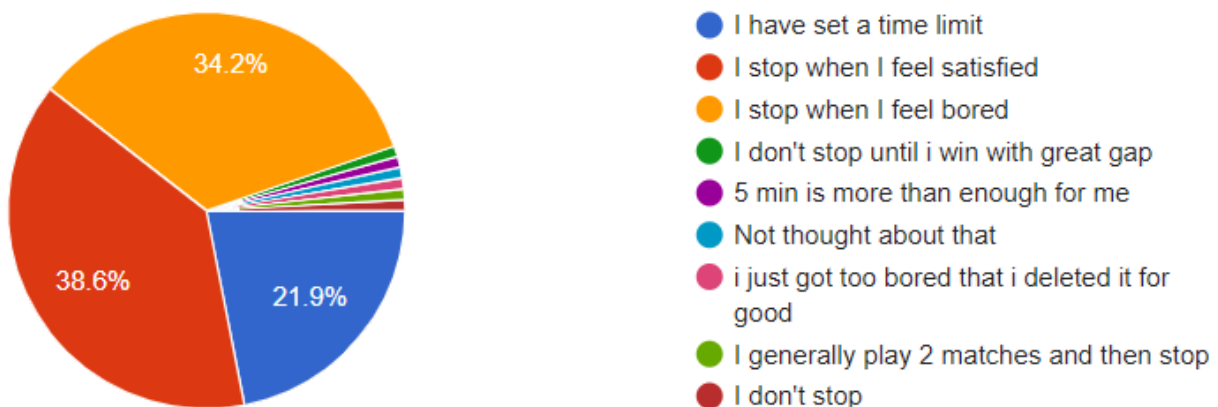
11. Following a gaming session, individuals experienced mood or behavior changes, including feeling uplifted and energized, or relaxed and relieved from stress, as gaming can serve as a form of escapism or distraction.

Happy
Sad
Frustrated/disappointed
Good
Anxious
Relaxed
Depends upon the game
If i played putting important work on h...

△ 1/2 ▼

12. The survey shows that 20% of respondents experience irritability or anxiety when unable to play games, suggesting that gaming may impact their daily routine and emotional well-being. However, the majority of respondents did not experience such feelings, suggesting that gaming does not significantly impact their emotional state. This varies depending on factors like personal attachment, coping mechanisms, and overall mental health.
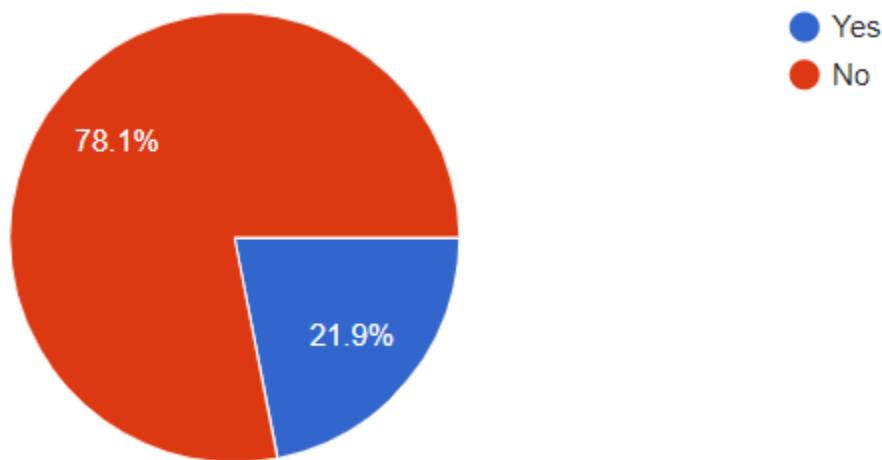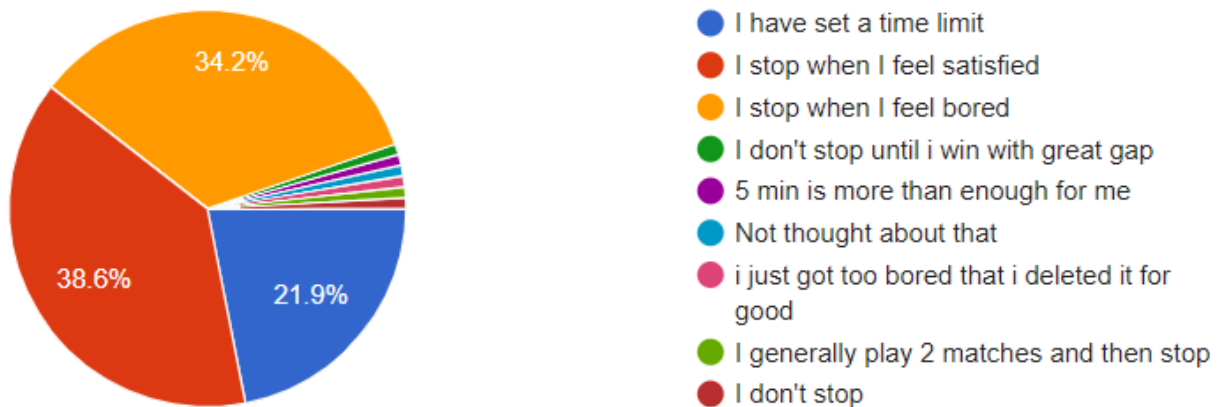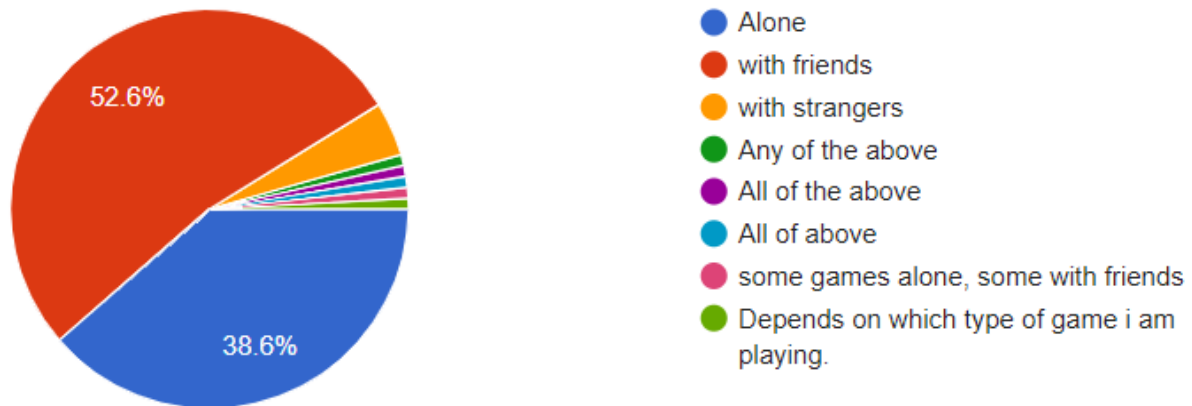

Yes
No

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- I don't stop until i win with great gap
- 5 min is more than enough for me
- Not thought about that
- i just got too bored that i deleted it for good
- I generally play 2 matches and then stop
- I don't stop

14. The survey shows 34% of respondents have experienced negative consequences from gaming habits, such as neglecting responsibilities or declining academic performance. While most respondents did not experience such negative effects, the findings emphasize the importance of maintaining a balanced approach to gaming and being mindful of its potential effects on daily responsibilities and overall well-being.


Legend:
- Yes
- No
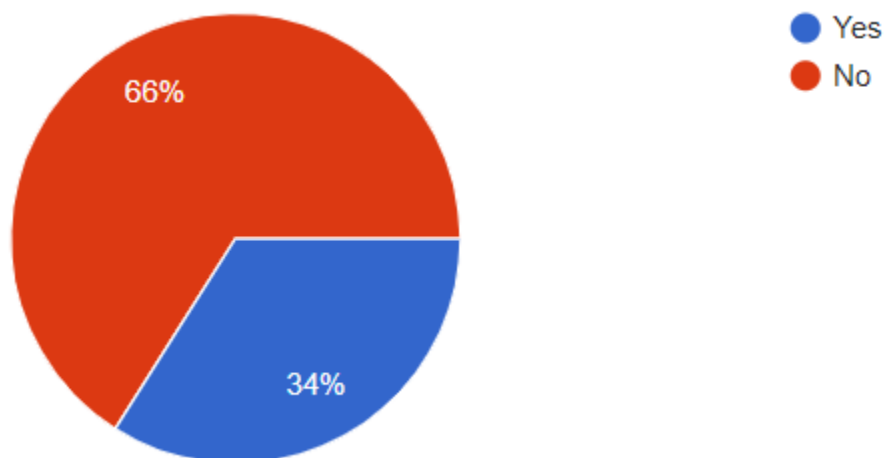
15. Half of respondents prefer playing mobile games with friends, around 40% prefer alone, and a smaller portion prefers playing with strangers, indicating a desire for social interaction and shared gaming experiences, while a smaller portion seeks to connect with new people or engage in competitive gaming.

Legend:
- Alone
- with friends
- with strangers
- Any of the above
- All of the above
- All of above
- some games alone, some with friends
- Depends on which type of game i am playing.

52.6%
38.6%

16. The survey shows that 86% of respondents don't feel pressured by their friends to play games, indicating their personal interest in gaming. However, 9% reported feeling pressured, suggesting that peer pressure isn't a widespread issue among the surveyed group.

Legend:
- Yes
- No
- Sometimes if old friends get together to play, but only in that scenario.
- I dont have any friends
- sometimes
- Sometimes

86.3%
9.8%

17. The survey shows that 12% of respondents spend money on mobile games, indicating a willingness to invest in gaming experiences. 9% occasionally spend money on games, indicating fluctuating commitment. However, 78% do not spend money on mobile games, preferring free-to-play or ad-supported models or avoiding in-game purchases.
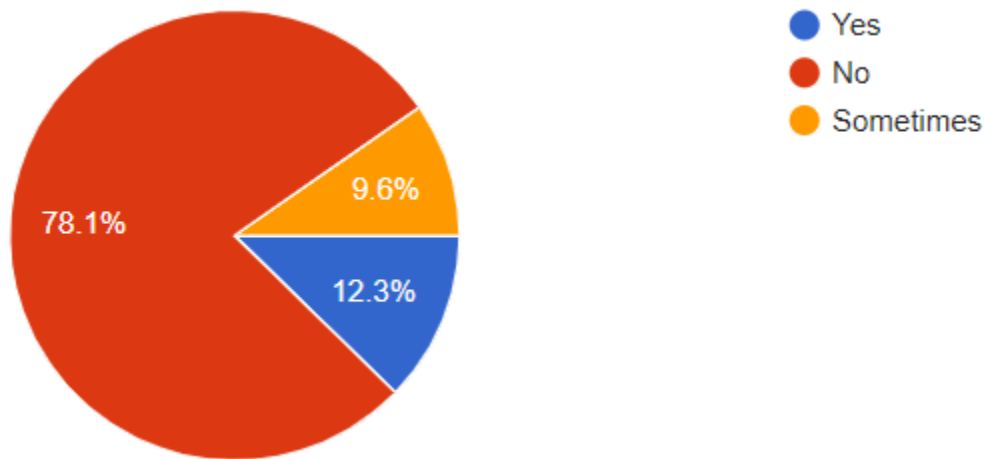
- ***Based on the one on one interview***

1. <u>*Age of the user*</u>

- Through individual conversations with approximately 40 individuals aged between 16 and 21 years old, we gained valuable insights into their preferences and behaviors. These discussions revealed common themes that were consistently mentioned by the participants, including their usage patterns and preferences in gaming.

2. <u>***How long have you been playing mobile games?***</u>

- From our surveys, we learned that some people have been playing mobile games for a long time, like 8 to 9 years. This means they started playing when mobile games first became popular. Most people said they've been

playing games for 5 to 6 years, so they've liked mobile games for quite a while. A few others mentioned they only started playing mobile games in the last 2 to 3 years.

3. *What initially attracted you to them?*

- The vast majority of participants indicated that the main reason for playing mobile games is fun and entertainment. They find it to be an enjoyable experience that helps them to relax.
- Furthermore, a lot of people emphasized the social aspect of gaming and expressed a preference for playing games with friends. This makes it possible for them to enjoy games together, have talks, and spend time together.
- Few people stated that they wanted to be the best at gaming, especially competitive gaming. These people stated that they wanted to take their gaming seriously and play competitively in order to compete with other players.
- Many people mentioned keeping their minds active by playing board games like chess. They stated that they prefer to play games that test their brains and demand strategic thinking because they like doing things that sharpen their minds.

4. *What genre of games do you play?*

- Different people display inclinations towards distinct categories of mobile gaming. However, it seems that multiplayer shooter and strategy games are the most popular genres. Because of the fun gameplay, competitive multiplayer modes, and possibility for social contact, these games are preferred the most.
- Moreover, there exist individuals in this population that participate in sport games which simulate a real-life environment.

5. *Can you describe your typical gaming session on a mobile device?*

- A typical gaming session on a mobile device varies among users with different frequencies and durations.
- Some people play games every day, and they spend a lot of time playing. For example, some play for about 2 to 3 hours every day, spending approximately about 7 to 8 hours in total looking at their screens.
- Others play for shorter periods but still play regularly, like 1 to 1.5 hours

every day, and spend about 4 to 5 hours on their screens.
- Some people don't play as often, perhaps only 2 to 3 times a week, but when they do, they play for a long time, typically around 3 hours each session.
- In addition to varying frequencies and durations of gaming sessions on mobile devices, an interesting trend emerges regarding the duration of gaming sessions across different age brackets within this range. It has been observed that gaming sessions tend to last longer for users in the 16-19 age group and gradually decrease as they age towards 20-21. This trend suggests that younger users may have more free time or inclination to engage in extended gaming sessions compared to older counterparts within the same demographic.
- It implies a potential shift in priorities or responsibilities as individuals transition from adolescence to young adulthood, impacting the time allocated for gaming activities.

6. ***What frustrations or challenges do you encounter while playing mobile games?***

- While playing mobile games, users encounter various frustrations and challenges depending on the type of game they play.
- For multiplayer shooter games, a common source of frustration lies in the actions of teammates, particularly when they underperform or fail to coordinate effectively, leading to losses.
- Additionally, users experience frustration when facing defeat themselves or when their performance falls short of expectations.
- Technical problems like internet lag make these frustrations worse, making it harder to have a good gaming experience.
- In contrast, users who play strategy games like chess often encounter frustration when they make mistakes, as such games require strategic thinking and precision.
- Interestingly, there are also individuals within this demographic who do not experience significant frustration while playing games, instead they feel happy and relaxed which was also reflected in the user survey suggesting a range of emotional responses to gaming experiences.

7. ***What keeps you engaged or motivated to continue playing a mobile game over time?***

- The motivations driving users to continue playing a mobile game over time are multifaceted.

- Many people said they like playing games because it's fun and entertaining. They enjoy playing games for a long time because they have fun doing it.
- A lot of people also said they like playing games with their friends. They think it's a great way to spend time together and connect with each other.
- For another subset of users its captivating gameplay mechanics and high-quality graphics, played a crucial role in maintaining their interest over time.
- Also, some people mentioned that they play games to relax and take breaks from studying. They find that playing games helps them relieve stress.

8. *Do you feel addicted to it?*

- Responses varied among users regarding feelings of addiction to mobile gaming. While many admitted to feeling addicted, some were initially hesitant to acknowledge it but demonstrated signs of addiction through their screen time.
- Additionally, a significant portion of participants reported not feeling addicted to mobile gaming at all.
- Interestingly, for those who did feel addicted, a common reason cited was peer influence. Many mentioned that the presence of friends playing games and their invitations to join in contributed to their own gaming habits.

9. *Have you ever had your life activities disturbed due to it ?*

- Among users who admitted to being addicted to mobile gaming, a common trend emerged where academic performance and sleep schedules were frequently disrupted. Many reported neglecting their studies or experiencing a decline in academic performance due to excessive gaming.
- Additionally, disturbances in sleep schedules were prevalent, with users staying up late into the night gaming, which subsequently affected their daily routines and productivity.
- Moreover, for some individuals, addiction to mobile gaming led to neglecting responsibilities such as work, as well as withdrawing from social interactions with friends and family.
- An interesting observation was that users played mobile games excessively during the pandemic since they had a lot of free time and their daily activities were not affected. But post-pandemic the users felt that

there are notable consequences on their attention span.
- While a subset of users did not experience any negative effects or consequences due to gaming and were able to manage and take out some time for gaming in their day to day lives.

10. *Do you think your mental health is affected? Do you think your behavior is affected?*

- Among users the majority denied a direct impact on their mental health, many acknowledged changes in their behavior during and after gaming sessions.
- Specifically, a common observation was an increase in feelings of anger and irritability while playing games and for a period thereafter. This suggests a potential short-term influence on behavior linked to gaming activity.
- However, there were users who noticed that mobile gaming had a wider effect on their mental health. They felt that playing games for a long time could lead to negative effects.

11. Are there any features or tools you wish mobile games offered to promote healthier gaming habits?

- Users expressed various ideas for features or tools they wished mobile games offered to promote healthier gaming habits.
- Suggestions included the implementation of timers to track gaming sessions, helping users become more aware of their time spent gaming and encouraging breaks.
- Some suggested a solution where the game's server would automatically block access after a certain amount of time, preventing players from playing too much.
- Furthermore, some users proposed incorporating a points system where points decrease as they play and then gradually increase again over time. This would encourage players to moderate their gameplay and maintain a balanced approach.

12. Have you ever used such a tool to reduce your time ?

- Among users only a small fraction reported using tools or features designed to reduce their gaming time.
- Specifically, very few individuals mentioned utilizing inbuilt timers or similar tools integrated within mobile games to monitor and limit their

gameplay duration.
- Instead, a more common strategy mentioned was uninstalling the game altogether as a means to reduce their time spent gaming.
- This indicates that although some users actively look for ways to control their gaming habits, not many of them actually use specific tools or features designed for this purpose within this group.

13. How likely would you be to use a tool or feature designed to help you manage your gaming habits on a scale of 1 to 10?

- On a scale of 1 to 10, users expressed moderate to high likelihood (7, 8, or 9) of using a tool or feature designed to help manage their gaming habits. A lot of participants understood the importance of having a balanced approach to gaming and were willing to use tools to help them develop healthier habits.
- However, some users indicated lower likelihood (4 or 5) of using such features, either because they didn't perceive themselves as addicted or because they didn't feel the need to reduce their gaming time.
- These responses suggest a willingness among a significant portion of the demographic to engage with tools that promote responsible gaming behavior, although individual motivations and perceptions may vary

6. *CONCLUSION:*

- In conclusion, our findings reveal a worrying trend of gaming addiction among individuals aged 14 to 22 years. Many are caught in this pattern, whether they realize it or not. Excessive gaming on mobile devices, especially among students, has led to negative consequences such as neglecting responsibilities and a drop in academic or work performance. There's a clear need for interventions to manage screen time and gaming habits, as most respondents expressed interest in such tools. Addressing this issue is vital for promoting healthier digital habits and ensuring individuals can meet their obligations and reach their potential.