Privacy Assignment - 3

1)
a)   Potential Risks :

      - Placing a video camera and continuously recording without the subject's knowledge can be a threat to their identity.

      - Record how much money they are withdrawing approximately, incase of leakage of the data, people can know about the subject's financial needs and spendings.

      - Estimate height, weight, ethnicity without participants consent - this can again be threat to their identity can be misused for other purposes.

      - Posting screen captures on Amazon's Mechanical Turk - this can again be threat to their identity can be misused for other purposes.

      - Retain participants fingerprints for another class project - this can again be threat to their identity can be misused for other purposes.

      - A worse risk is recruiting school kids < 18, using flyers in school. Question of whether parent's consent was given or not is not included.

b)   For the observational field study, a sign saying, 'You are under surveillance' will make people more aware of the surroundings and at the same time won't affect the research of 'usability of fingerprint readers'. People might think they are just watched for safety reasons and behave naturally. The use of camera could be avoided completely too. The number of attempts/ time taken to withdraw money is needed to the research and doesn't pose much threat to the human subjects. Amount of money withdrawn is irrelevant to the research and can be avoided completely. The same goes to height, weight and ethnicity. Posting the screenshots on Turk poses a serious threat to the individual's identity and reveals a lot of personal data. These data seems irrelevant to the research topic and can be avoided.

      For the in-lab experiment, participants consent must be taken before storing their fingerprint. Also, it should be explicitly mentioned that in what way those fingerprints will be used (the class project in this case). While recruiting school students their parent's consent must be made compulsory and they can participate only with their parent's consent. The survey that is administered after should be included and asked for IRB approval too if it is a research, since it deals with collecting human data.

2)

a) Research Question :

How much do people believe the risks with reusing passwords across sites? Are they aware of the risks ?

Description :

With growing usage of internet for everything, most people use the same passwords across sites with varying sensitive sites. Are users aware of the risk they are taking? Are they updated with the famous breaches and violations that occur and know how to respond to these security issues? This research interview tries to get answers to these elaborated questions.

Script :

Hi <Name>,

Thanks for your time and accepting my invitation. For the next few minutes you will be posed with few questions about passwords and the security issues. Do let me know if you need more clarification on the questions or if you cant understand something.

Lets move on to the questions now,

1) Do you think there are security issues if you reuse passwords ?
2) Do you reuse / still reuse your passwords ?
3) What risks can you think of, if you reuse passwords ?
4) Did you know about the recent security breach of Facebook for storing unencrypted passwords that were accessible to all the employees ?
        If yes, Can you briefly explain what you understood about it ?
        If no, some hundred million users were affected by it and the passwords were accessible to
        all the employees. How do you feel about it ?
5) Imagine a password breach occurs on one of your <not so important > site that you use,, and you are affected by it. What is the immediate thing would you do ?
6) What is credential stuffing ?
        If yes, give a situation where it can be worse.
        If no, credential stuffing is using the your password from one site and trying it on other sites
        Now, can you think of a situation where it can be worse.

Thanks again for your time and I appreciate your patience in answering the questions. You responses are valuable to finding answers to our research question.

b)

Almost everyone were aware that there are security risks in reusing the passwords across the sites. When asked will they still reuse the passwords they agreed saying it is irritating to keep up with the multiple accounts. When posed a question asking if they can come up with a security risk, people (everyone) easily came with how the passwords could be reused on other sites.

To see how aware they are with major security violations, the recent case of Facebook storing unencrypted passwords was asked. 3/4 participants responded yes, while the one who didn't know said he/she doesn't use Facebook that much and least bothered about anything related to it.

A role play was set, in which the participant was asked what their immediate response would be in case of a breach and if they are one among affected. 4/4 participants responded that they will change the password of that site immediately and to a more complex one. But no one said they will change on the other sites too even accepting that they use the same password across. This clearly explains the common misconception of more complex passwords means more security. Participants also knew how passwords can be stolen, which are recorded with the attached notes.

Even after the role play and realising that about the risks they still weren't convinced to not to reuse passwords. The increasing number of conditions put on password acceptance was one among the major reason that made people reuse passwords. Also, participants reported that security risks associated with linking apps/ accounts with Google/ Facebook was as scary with the breaches that is occurring lately, which in turn forces them to reuse passwords.

[Notes taken while interviewing are attached in the zip file as jpeg for the 4 participants]

3)

a) What are people's perceptions on privacy of their data in this growing digital era ?

b)   While designing the survey, I made the flow as following - Westin's questions as is, my set of questions followed by demographic questions. The demographic questions were kept at the end so people need not concentrate much in the end. I also made sure that the question text isn't too scary or contain heavy jargons that people don't understand. An attention checker was placed in the middle of the survey to check if people are concentrating on the survey. While introducing about the project, I made sure that the word privacy wasn't mentioned anywhere so people aren't biased right at the beginning itself.

c) Hi !

You are invited to take the following survey about people's take on their data in this increasing digital era. This survey is part of a class project for Privacy (CSC591-012) at NC State University. It will approximately take 5 mins time to complete the survey. The survey is completely anonymous and we collect no other data of yours apart from your responses.

If you have any doubts/ extend a talk after the survey on the topics, feel free to reach out to me !

https://ncsu.qualtrics.com/jfe/form/SV_0IIrbmNaev2a2X3

Thanks & Regards,
Prashanthi

d) For Screening I used the following criteria,
- Choose people with a wider distribution of age group
- Different parts of the world, just not restricting to NCSU
- Technical knowledge with CS background and with non CS background

e) Implemented the survey on Qualtrics
(https://ncsu.qualtrics.com/jfe/form/SV_0IIrbmNaev2a2X3)

f)

Thanks for accepting my invitation and taking time to give the survey. This survey is part of an assignment for a course at NC State. The survey has few questions about people's take on their data in this increasing digital era. The survey will approximately take 5 mins to finish.

1. Consumers have lost all control over how personal information is collected and used by companies.
   a. Strongly disagree
   b. Somewhat disagree
   c. Somewhat agree
   d. Strongly agree
2. Most businesses handle the personal information they collect about consumers in a proper and confidential way.
   a. Strongly disagree
   b. Somewhat disagree
   c. Somewhat agree
   d. Strongly agree

3. Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today.
   a. Strongly disagree
   b. Somewhat disagree
   c. Somewhat agree
   d. Strongly agree

4. In this digital era, how concerned are you when privacy-sensitive data (anything that is valuable to you-personal data + organisational data like financial data, military data, secret recipes)
   a. Extremely concerned
   b. Somewhat concerned
   c. Neither concerned nor unconcerned
   d. Somewhat unconcerned
   e. Extremely unconcerned

5. Which of the following is not a personal data ?
   a. IP address
   b. Military secrets
   c. Fingerprint
   d. Email Address

6. Will you give up your privacy for something beneficial (eg cases as described)
   - Give your personal detail for a membership and discounts
   - Allow ads/trackers for better browsing experience
   - Your medical data, so researchers can predict a disease that genetical

   a. Always
   b. Most of the time
   c. About half the time
   d. Sometimes
   e. Never
   f. Other

7. How often have you restricted your data that's being shared with companies/websites/third parties
(for eg - https://myactivity.google.com/myactivity mobile & desktop, Facebook's Privacy settings, change the default settings on apps/ tools)
   a. Always
   b. Most of the time
   c. About half the time
   d. Sometimes
   e. Never

8. Do you read the entire privacy policy when prompted ?
   a. Most of the time
   b. About half the time
   c. Sometimes
   d. Never

9. Age
   a. Under 18
   b. 18-24
   c. 35-44
   d. 45-54
   e. 55-60
   f. Above 60
   g. Choose not to identify

10. Region
   a. North America
   b. South America
   c. Europe/ UK
   d. Asia
   e. Africa
   f. Other

11. Gender
   a. Male
   b. Female

    c. Choose not to identify

12. How would you rate your level of technical knowledge about the Internet?
    a. Highly knowledgeable
    b. Knowledgeable
    c. Neutral
    d. Somewhat knowledgeable
    e. No technical knowledge

g) Number of survey responses :12
        With Westin's privacy attitude questions and based on the categorisation :
                Fundamentalist   - 1
                Unconcerned   - 1
                Pragmatist   - 10

Graphs showing categories against demographics for Westin's questions:
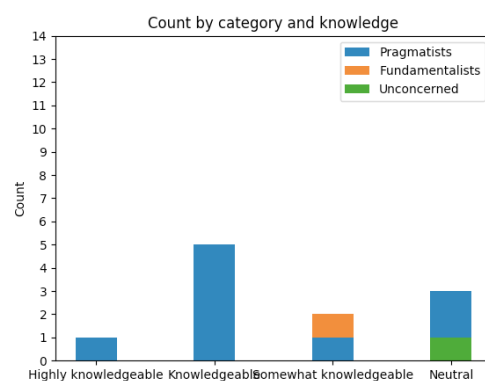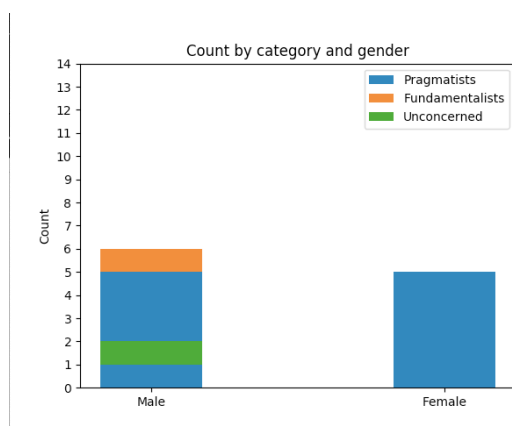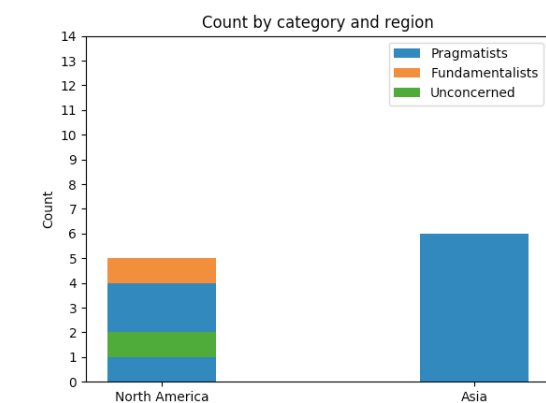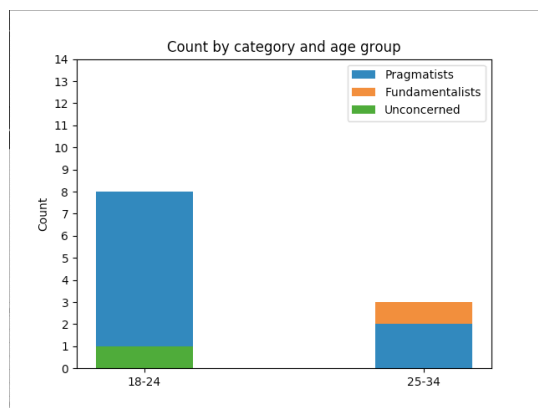
The next set of 4 questions, tested them on how much they are concerned/ unconcerned in real life situations.
If they had responded with,
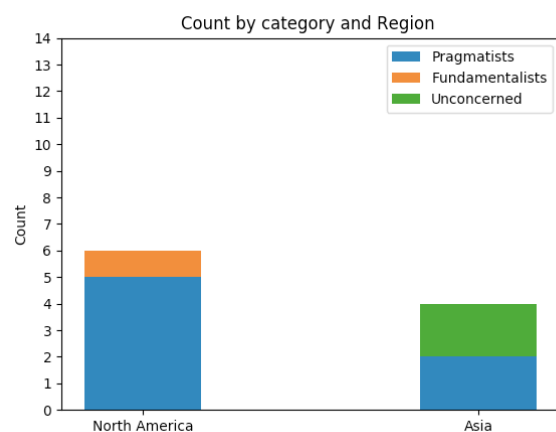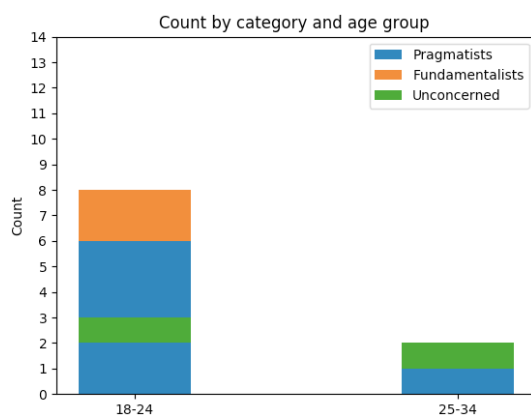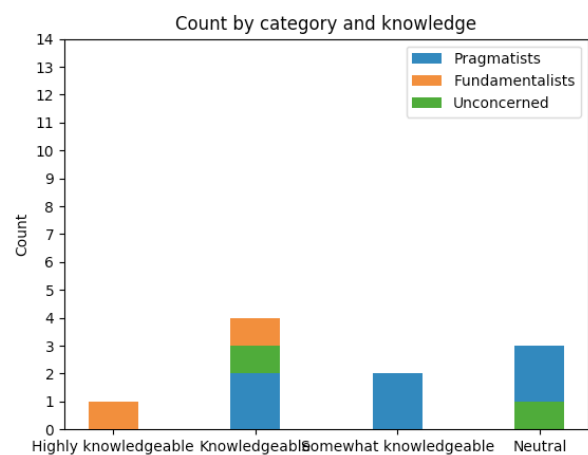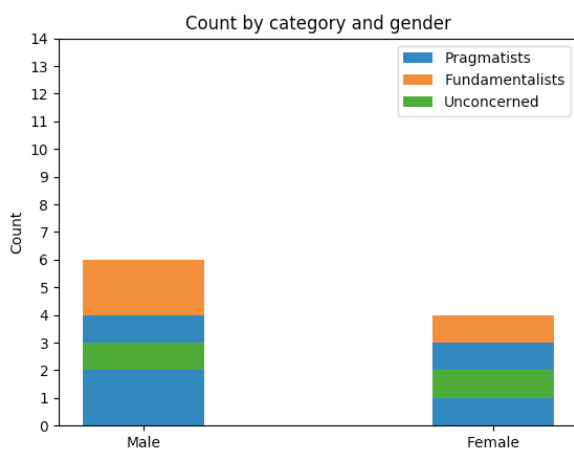   a. Extremely concerned
    b. Somewhat concerned

Or,

a. Always
b. Most of the time
c. About half the time

To the respective questions, they were considered to be privacy concerned. Answering privacy concerned to 3-4 questions were tagged as Fundamentalist, 2 - Pragmatist, 1 - Unconcerned. From those results,

Fundamentalist   - 3
Unconcerned   - 2
Pragmatist   - 7

Graphs showing Categories against demographics.

Count by category and gender

Count by category and knowledge

Count by category and age group

Count by category and Region

The difference between the count of Fundamentalist, unconcerned, pragmatist in Westin's categorisation and set of questions asked by us, shows the difference in how people perceive and practise privacy. Also, Westin's questions are kind of a broader section view of privacy and has words like - business, consumers, laws etc. People tend to stay neutral when answering to these eagle view of privacy. Whereas the other questions particularly tested on what they will do in their everyday life and it exactly reflects their perception of privacy concerns.

An attention checker was placed, which gave way to an interesting note on how people see their data. 3 people tagged IP address not a personal data and 2 tagged email address to be a personal data. This clearly shows that people aren't aware of what their personal data is, and the lack of awareness of how they are giving away their data without knowing that its a potential threat to them.

General response split across various demographics :

Gender	Male	7 (58.33%)
	Female	5 (41.66%)
Age	18-24	9 (75%)
	25-34	3(25%)
Region	North America	6 (50%)
	Asia	6(50%)
Technical knowledge	Highly knowledgeable	1 (8.33%)
	Knowledgeable	5 (41.66%)
	Somewhat knowledgeable	2 (16.66%)
	Neutral	4 (33.33%)