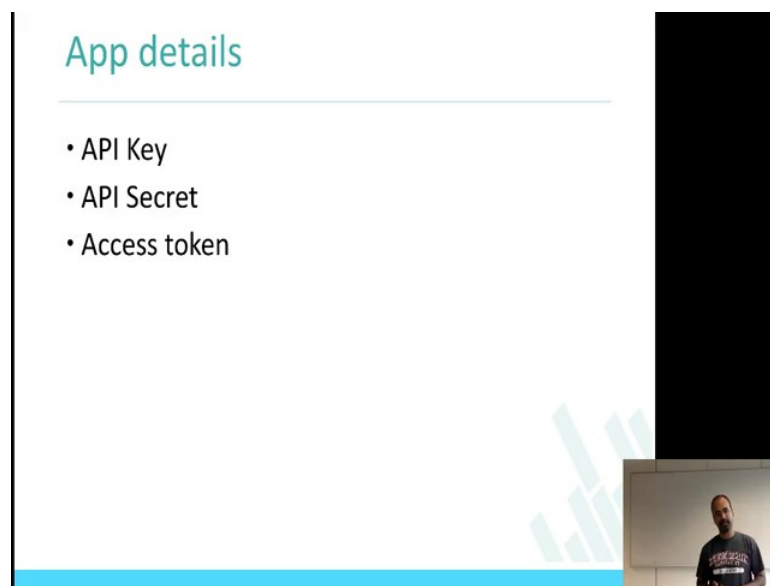


**Privacy and Security in Online Social Networks**  
**Prof. Ponnuram Kumaraguru (“PK”)**  
**Department of Computer Science and Engineering**  
**Indian Institute of Technology, Madras**

**Week - 3.2**  
**Lecture – 11**  
**Privacy and Social Media**

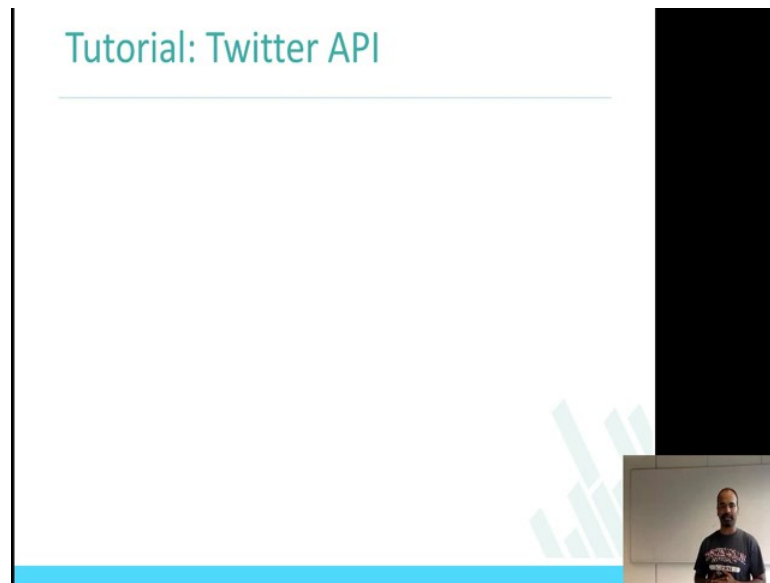
Now, let us go to the next part of this week.

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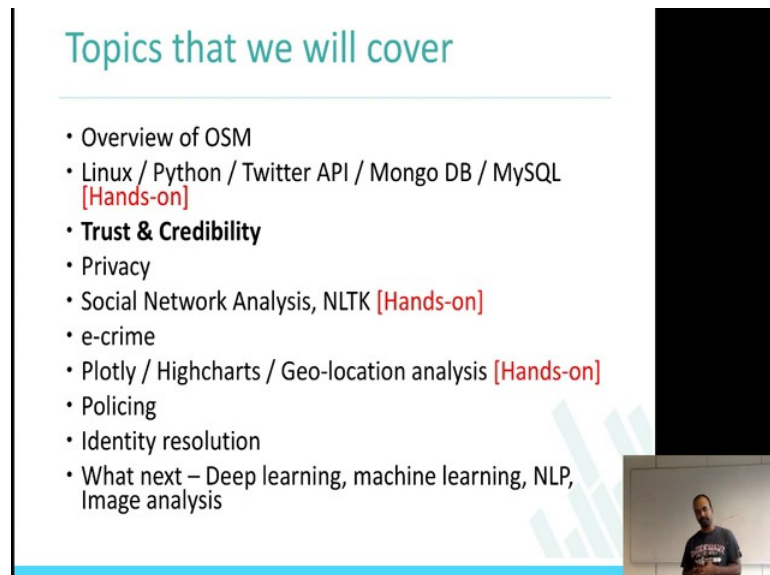
Before going to the technical details I taught I will just highlight something about API key, API secret and access token. Please do not share these details to anybody else, I think I am sure you understand already that sharing this can actually backfire on you because if somebody is using API key, secret or access token, they could actually collect data and it will look as if you are the one who is collecting the data and so please be careful about not sharing them on the portals, not sharing them with anybody else also.

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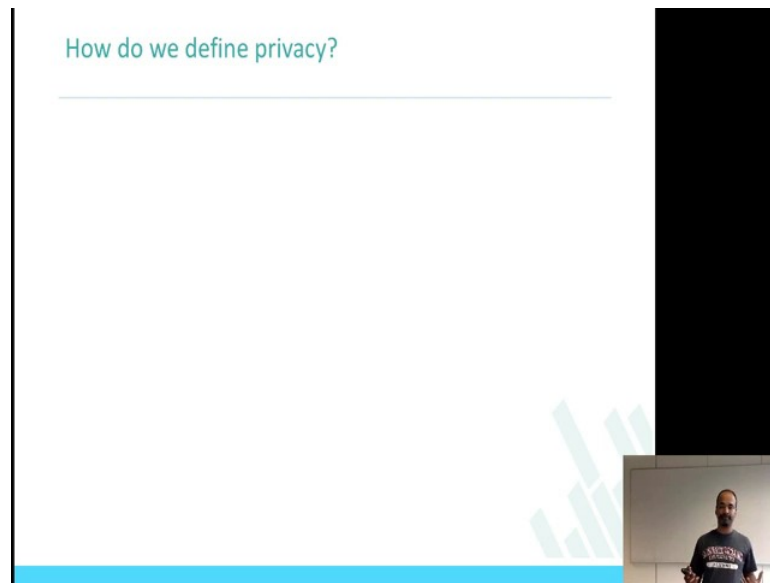
Also, this week you will have tutorial about Twitter API. Again, we will go through the same process as we did in Facebook. So, please be careful, go through the tutorial that we are providing you and make sure that you are able to actually execute and understand and also implement some **of the** things that we discuss in the tutorial.

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See here is the slide that I kept saying I will actually keep coming back to while throughout this course which is trust and credibility. So, what I am going to focus now little bit is on privacy. So, privacy we will probably go through one or two more lectures.

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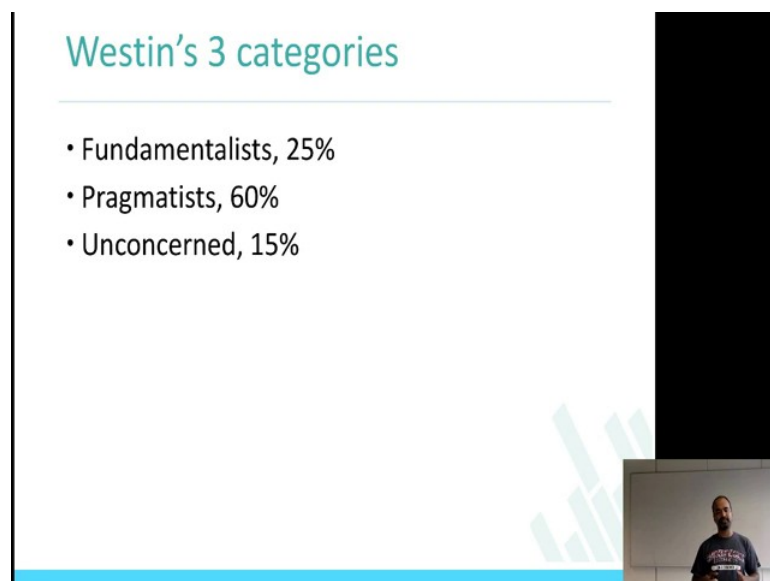


How do we define privacy?

A presentation slide with a light blue header and a white body. The title 'How do we define privacy?' is in a teal font. A horizontal line is below the title. In the bottom right corner, there is a small video inset showing a man in a blue t-shirt standing in front of a whiteboard. The slide is framed by a black vertical bar on the left and a black horizontal bar at the bottom.

How do we define privacy? Privacy is actually very, very hard to define the way that if I ask what privacy is for you and what privacy is for me, it may be very, very different. Your privacy in class that you are sitting with your friends and privacy that you have at home, the privacy that you have while you are watching movie, privacy that when you are going out with friends is very, very different. Every context has different privacy expectations.

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Westin's 3 categories

- Fundamentalists, 25%
- Pragmatists, 60%
- Unconcerned, 15%

A presentation slide with a light blue header and a white body. The title 'Westin's 3 categories' is in a teal font. A horizontal line is below the title. Below the line is a bulleted list with three items: 'Fundamentalists, 25%', 'Pragmatists, 60%', and 'Unconcerned, 15%'. In the bottom right corner, there is a small video inset showing a man in a blue t-shirt standing in front of a whiteboard. The slide is framed by a black vertical bar on the left and a black horizontal bar at the bottom.

And in the research domain, Alan Westin; Prof. Alan Westin has actually looked at this ways of what privacy means? What kind of people have what kind of privacy preferences and he has been studying this for more than 30 years or so, and is very, very well known in this field of understanding privacy perceptions of citizens. So, what he did was, he kind of asked the same question every year on specific topics for about 30 years or so, and he kind of classified the US citizens into these 3 categories; fundamentalists, pragmatists, unconcerned.

What does fundamentalist mean? Fundamentalist is nothing, but set of people who will not provide personal details, who will not, for simple thing, you **think of** fundamentalist are the people who will probably not also stand in a picture when you want to actually take a picture with that. So, that is the set of fundamentalist and there are about 25 percent of US citizens who are fundamentalist. Pragmatist are the people who are, make decisions depending on the situation, for example, if I am giving a bar of chocolate they would give me back something which is personal details, if I am giving them something more worth then they will be able to share, they will be able to share something bigger also.

So, depending on the situation which is I'm going to buy a product on Amazon website, my privacy expectations are very different versus when I am actually going to do financial transactions on ICICI website. So, users who followed this category of pragmatists make decisions depending on the situation of their, depending on the activity that they are going.

Unconcerned, the set of people who probably will give away the passwords for a bar chocolate, will give away the personal identified information also for some minimal returns. So, that is the three categories of users, categories of privacy perceptions that Alan Westin looked at; fundamentalist, pragmatist and unconcerned. Unconcerned being people who do not care about privacy, pragmatist being who depending on the situation who make a decision on it, fundamentalist are the people who have very, very **staunch** privacy expectations, who have very strong privacy expectations.

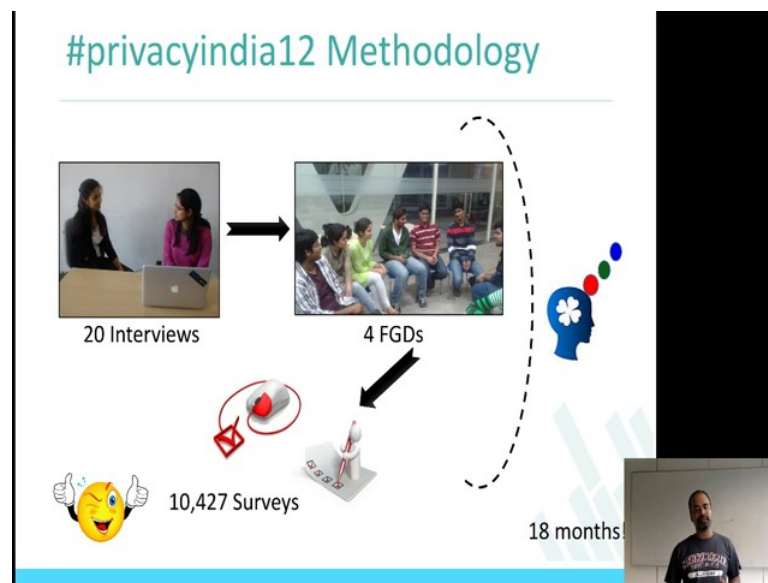
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Some of you may have seen this cartoon in the past. So, this cartoon was published in mid nineties and the cartoon that there is on the internet nobody knows who you are, but then you thought that on the internet nobody knew you were a dog, but then came a time when you started getting personalized ads for your favourite brand of dog food.

So, it basically shows that it is easily possible to identify who you are on the internet just by looking at your behaviour and this was also in the mid nineties, so they were probably, mid nineties and early two thousands, they were using only the traffic signals, only the traffic network data and the data that they could collect from these web services, but today they can **actually, meaning these** services like Facebook, Twitter all of them can **put the – Google –** they can put the data together and actually make interesting profile of yours with just the browser **behavior** that you have, which can be actually **pretty** damaging in case, if they want to misuse it against you.

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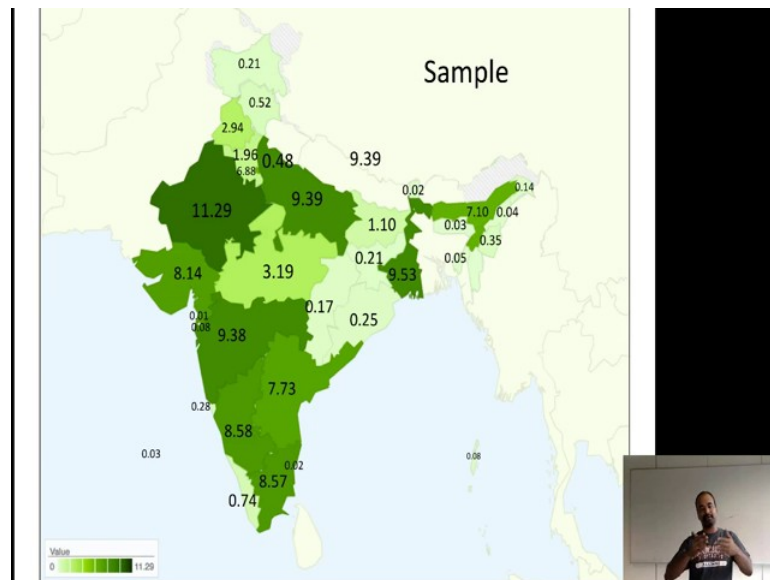


So, keeping this in mind, there was, keeping the Alan Weston's studies in mind, keeping the privacy definitions, keeping the understanding of privacy within India itself. There was some data collected to understand the privacy perceptions in India.

Just looking at how Indians look at privacy, what kind of privacy perceptions do people have? So, this is different, there is a long study and I'm just going to make it really short we're just making some interesting questions which is connected to online social media. I am just bringing the study to just look at online social media data that we collected. So, 20 interviews, 4 focus group discussions were done, but the most interesting part was 10,427 survey data was collected and this data is one of the largest data in terms of the privacy studies that are turned across the world.

10,427 respondents with 83 questions and it was all collected all over the country except from one state, the data that is available represents from a many, many states in the country.

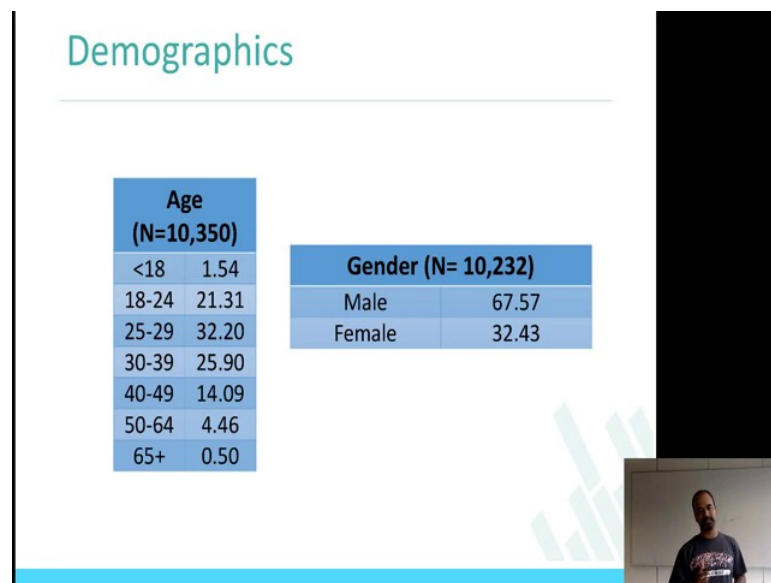
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So, this is the distribution, the number in the slide represents the percentage of data that was collected from that state, for example, Tamil Nadu has 8.57 percentage which means 8.57 percent of data of the 10,427 where collected from Tamil Nadu.

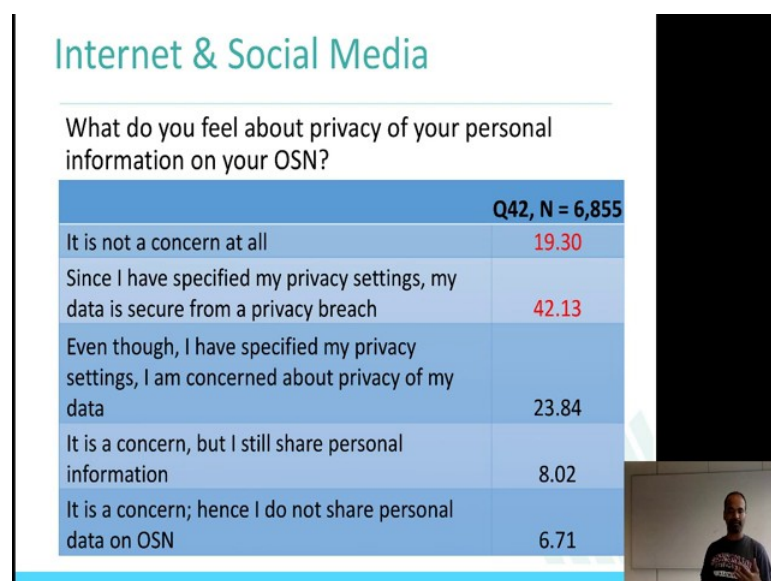
So, given that distribution given that it represents the whole country and the data was not just collected only online, it was done it in English, but it was actually collected from, through many ways, meaning, standing outside in the mall, standing outside the hotel, in a railway station and the data was collected in these forms. A little proportion was actually collected on probably online, if you are interested at URL, of the end of the slide, end of **this deck of** slides, **feel free to go** look at the data, you can actually look at the data, download the data and play **around** with the data also.

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Demographics, if you look at the distribution of people who are part of the study. So, less than 18 is about 1.5 percent and 18 to 24 is about 20 percent and majority are set of people belong to the category of 18 to 39 years. So, this kind of represents the distribution of people who are part of the study. The male and female gender was 67 towards male and 32 towards female. So, again this I am sharing this detail for you to get sense of what the results are or how to actually place the results.

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Here, three questions that I will actually go through and again please remember I am using this only to elicit, some interesting observations in the **space** of online social media with this data that was collected.

What you feel about privacy of your personal information on online social networks and your online social networks which primarily, if you want to keep at a let us keep at Facebook, for now. So, the entire questionnaire, the entire responses and the technical report around that is publicly available, Q 42 in the slide means that it is question 42 of this survey that was asked and hence 6855 means that much number people from the 10,427 respondents actually answered this particular question.

So, the answers, the responses that it is not a **concern at** all since I have specified my privacy settings, my data is secure even though I have specified my privacy settings I am concerned about privacy of my data it is a concern, but I still share my personal information. It is a concern; hence I will not share my personal data on online social media

So, I will be very, very curious about what do you mean the students of this class, think about the responses, which category you will fall, but let me just show you what the data says and its always interesting to answer these questions **from** data, instead of some **anecdote** or even just doing interview study or focus group discussion, which can give you some good insights but not a whole lot in terms of generalising **results**. This is 42 percent of the 6855 people actually said that since I have specified my privacy settings, my data is secure from a privacy breach and already you understand that this probably is not correct, and about 19 percent this not a concern at all, 23 percent even though I've specified my privacy settings I am concerned about privacy of my privacy of my data, it is the concern, but I still share personal information.

It is a concern, hence I do not share personal data so that is 6.7 percent; 8 percent has it is a concern. So, that is the distribution and then the reason why I am talking about distribution is connected to the small concept of Alan Weston's categories of fundamentalist, pragmatist, unconcerned. It would be actually interesting to see how these numbers change over a period time.

## Internet & Social Media

If you receive a friendship request on your most frequently used OSN, which of the following people will you add as friends?

Q43, N = 6,929	
Person of opposite gender	27.39
People from my hometown	19.51
Person with nice profile picture	10.12
Strangers (people you do not know)	4.99
Somebody, whom you do not know or recognize but have mutual / common friends with	8.31
Anyone	2.99

So the next question, if you receive a friendship request on your most favourite, most frequently used online social network, which in case let us keep the Facebook, which of the following people will you add as friends. Again, the options that I am presenting here is not actually a complete, feel free to look at the [questionnaire](#), where you will actually see all the options that was presented. This is question number 43 and 6929 responses, person of opposite gender, people from my hometown, person with nice profile picture, strangers, somebody even you do not know or recognise, but have mutual friends, and anyone.

Again, if I were to ask this question [anonymously](#) for the students in the class, the distribution may be very different and so, in this case if we look at it, we had about 10.12 percent of people, of the respondents just accepted a friendship request because there was a nice profile picture. 27 percent accepted people of opposite gender and anyone is 2.99 percent and rest of the percentage that are presented there.

So if we look at it 27 percent of the people are actually just accepting the opposite gender. While we looked at this data we also wanted to look at what is what percentage is more which is when male is presented to the female or female is presented to male, we kind of looked at the data and ensure you already know, if you are listening to this, when you are listening to this lecture you will already guess what which number would have been higher.

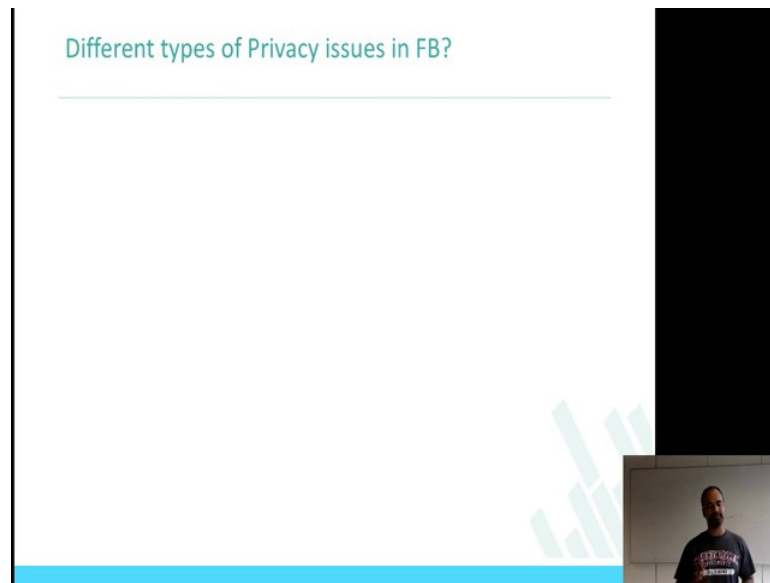
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So, that is the URL for the data, data report **questionnaire** and everything like that, feel free to actually play around the data, play around the report, **if there's anything**, feel free to ask us in the forum. Again, remember that the point here was making use of the online social media part of the study to give you an insight about privacy issues, which is information that is shared with social networks. How people actually behave while accepting friends request and I am sure when you look at the report, you will probably get more insights of the survey of the data and of the topic itself.

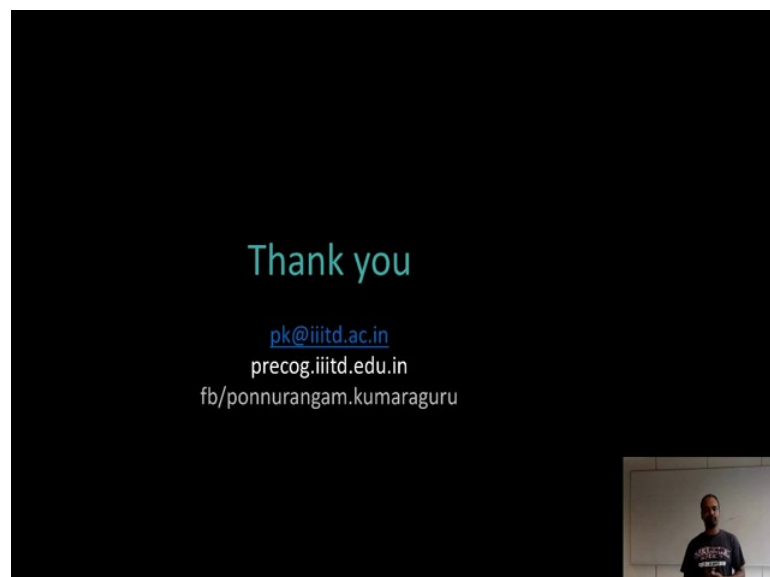
I would actually cover more of privacy in future lectures also. So, we will look at this privacy in more detail.

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What I would like to actually leave this part of the lecture is actually I would like the students who are part of this course to actually point out different types of privacy issues on the forum. Please think about it, what are your privacy issues on, forum, on Facebook, the things like you probably think the issues, I would like to actually see these being thrown into the form and that see what the participants of the course actually said.

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So, that is all I have for in the week 3. So, this week I am kind of keeping the contents slightly light because the first week and a second week you had a lot of my tutorials and

this week also you will get actually tutorials of **Twitter API** (Refer Time: 13:42) So, I just want to make sure that you are actually able to do the tutorials and completely hands on. So, we will actually take little bit of a content this week and I will continue on privacy starting next week also.