PSOSM - Midsem Hack
Group - 17

Harkishan Singh : 2017233
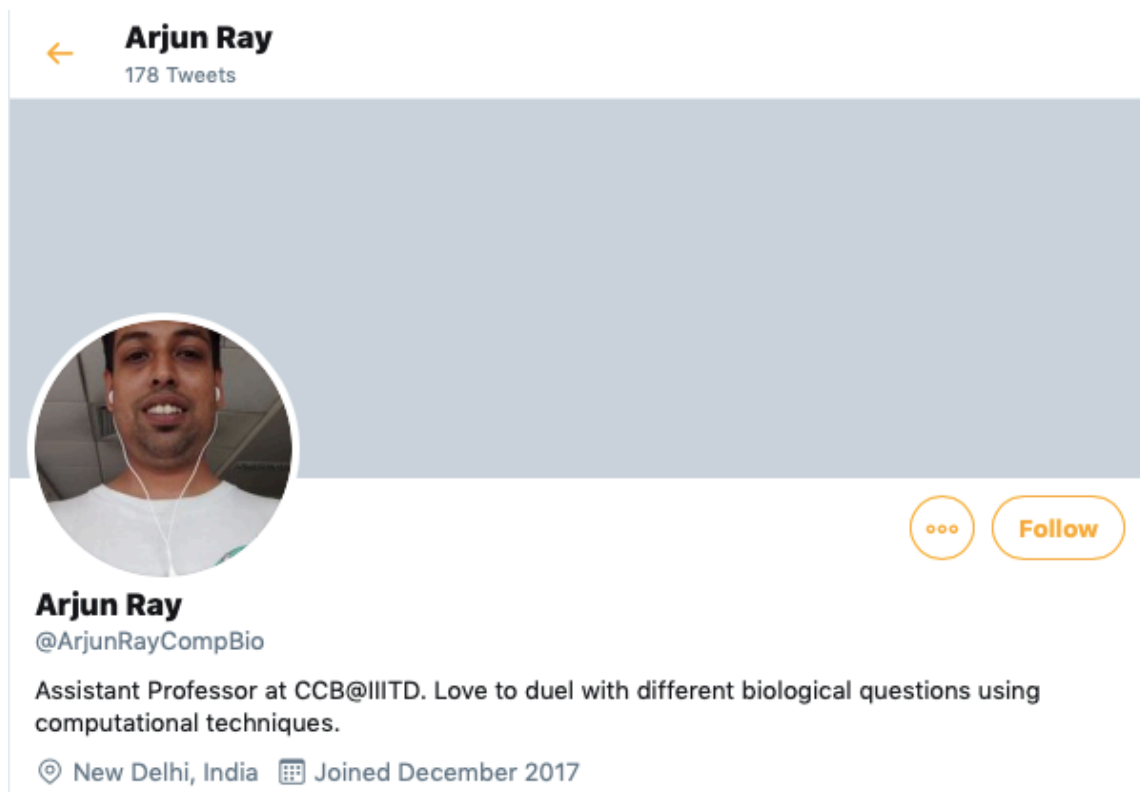Mayank Chopra : 2017066
Aman Gulia : 2017328

NOTE/Instructions :

This pdf contains all the results/answers of the midsem hack questions. There is only 1 python file in the folder with name : hack.py. Results of the code is present in this report. I have commented some of the functions of the python file which were being used to collect data. We have tried to pick up the information from every possible social media/platform where we could find the information about the professors for question 1. For all other questions (Q2 and Q3), Twitter and Linkdin is used to pick information via code.

Files : The folder contains several files of which, description will follow later in this report.

NEXT PAGE==>

3) Dr. Arjun Ray

Arjun Ray
178 Tweets

Arjun Ray
@ArjunRayCompBio

Assistant Professor at CCB@IIITD. Love to duel with different biological questions using computational techniques.

New Delhi, India   Joined December 2017

Dr. PK is active on almost all popular social media and he posts a post on all media, which means, if he have to post something, he will post it on every social media (Facebook, Instagram, Twitter etc), so for him, we have focused only on his Twitter account. Also, he have a verified Twitter account. He tweet a lot. So, we have picked his tweets from past 2 years only, which constitutes to a 3MB file.

Dr. Arjun Ray is fairly active on Twitter, but Dr. Ojaswa Sharma is not active on Twitter. Dr. Ojaswa have only 7 tweets on his timeline, so for him, we have tried to use his Linkedin profile, where he have

Three faculties which we choose are :

1) Dr. Ponnurangam Kumaraguru (PK) :

Ponnurangam Kumaraguru "PK" ✔
@ponguru

Professor Computer Science @IIITDelhi Social networks / computing, Cyber security, Privacy, TEDx speaker, @precog_iiitd Adjunct faculty @iiit_hyderabad

⊚ New Delhi, India 🔗 precog.iiitd.edu.in ▦ Joined September 2009

139 Following   **3,208** Followers

2) Dr. Ojaswa Sharma :

Ojaswa Sharma
7 Tweets

Ojaswa Sharma
@_ojaswa_

⊚ New Delhi, India 🔗 faculty.iiitd.ac.in/~ojaswa/ ▦ Joined November 2012

3 Following   **5** Followers

Question 1:

<u>Dr. Ponnurangam Kumaraguru (PK)</u>

Platform : Twitter (@ponguru)

Link to twitter profile : <u>@ponguru</u>

Linked Information:

- Full Name : Ponnurangam Kumaraguru "PK"
- Twitter Handle : @ponguru
- Twitter Hashtag : #ProfGiri

Linkable Information:

- Joined Twitter in September , 2009
- Resides in New Delhi (currently)
- Professor (Computer Science @IIITDelhi)
- Areas of Interest - Social Networks /Computing , Cyber Security , Privacy.
- TEDx speaker
- Adjunct Faculty @IIIT Hyderabad
- Associated to @precog_iiitd
- Age-43-45 (Source : http://precog.iiitd.edu.in/people/pk/PK_CV_Nov_2019.pdf (found from Twitter's precog link))

Platform : Facebook (@ponnurangam.kumaraguru)

Link to Facebook profile : <u>@ponnurangam.kumaraguru</u>

Linked Information :

- Full name : Ponnurangam Kumaraguru (P K)
- Founding Head at CERCatIIITD
- Founder and Director at Precog@IIIT-D

Linkable Information :

- Professor @ Precog@IIIT-D
- Adjunct Faculty at IIIT-H
- TEDx speaker
- Former Associate professor of Computer Science @ IIITD

Platform : Research Gate

Link to Research Gate profile : @pk

Linked Information :

- Full Name : Ponnurangam Kumaraguru
- Email ID - pk@iiitd.ac.in

Linkable Information :

- Doctor of Philosophy in Computer Science
- Associate Professor @ IIITD
- TEDx Speaker,ACM Distinguished and ACM India Eminent Speaker
- PHD from CMU (Carnegie Mellon University)
- Location - Delhi (India)
- Disciplines - Information Science , Computer Security and Reliability , Human Computer Interaction .
- Citations on ResearchGate - 3725. (now)

Platform : Quora

Link to quora profile : @pk

Linked Information :

- Full Name : Ponnurangam Kumaraguru

Linkable Information:

- Associate Professor , Computer Science @ IIIT Delhi
- Professor @ IIIT Delhi since August 2009
- PHD from CMU
- Living in Delhi since August 2009
- Interested in Cybersecurity, e-crime, privacy, and online social media
- Part of CERC@IIITD and precog research group @IIIT Delhi

Dr. Arjun Ray

Platform : Twitter (@ArjunRayCompBio)

Link to Twitter profile : @ArjunRayCompBio

Linked Information :

- Full name : Arjun Ray
- Twitter Handle : @ArjunRayCompBio

Linkable Information :

- Assistant Professor at CCB@IIITD
- Located in New Delhi
- Joined Twitter in December , 2017

Platform : Google Scholar

Link to Google Scholar profile : @ArjunRayCompBio

Linked Information :

- Full name : Arjun Ray

Linkable Information :

- Assistant Professor in Computational Biology @ IIIT Delhi
- Research Areas : Bioinformatics , Structural Biology , Biophysics , Biomolecular interactions.
- 332 citations from Google Scholar as of now.
- Studied at Department of Theoretical Physics & Swedish eScience Research Center, Royal Institute of Technology, Stockholm, Sweden (Source : https://link.springer.com/article/ 10.1186/1471-2105-13-224 (paper found on Google Scholar))

Platform : LinkedIn

Link to LinkedIn profile : @ArjunRay

Linked Information:

- Full name : Arjun Ray

Linakable Information:

- Age - 36-37

- Completed High School from Kendriya Vidyalaya with Science Stream in year 2000
- Did BSc(Hons) in Chemistry from Visva bharati (2001-2004) and then MSc in Chemistry (2004-2006)
- Completed Licentiate Tek in Biochemistry , Biophysics and Molecular Biology from KTH Royal Institute of Technology (2010-2012)
- Completed PHD in Biology/Biological Sciences from Institute of Genomics and integrative biology (CSIR) (2014-2018)
- Project Associate at IIT Kanpur (2008-2008)
- Grad Student @ Stockholm University (Feb 2009 to May 2011)
- Intern at EBI ,Hinxton (Jul 2012 - Oct 2012)
- Guest Researcher at Heidelberg Institute for Theoretical Studies.(May 2016 - Aug 2016)
- Senior Project Associate at CSIR-IGIB (Mar 2013 - Jul 2019)
- Assistant Professor (ComputationalBiology) @ IIITD (Jul 2019 - Present)

Platform : Research Gate

Link to Research Gate profile : @ArjunRay

Linked Information:

- Full name : Arjun Ray

Linkable Information:

- Licentiate at KTH Royal Institute of Technology , Department of Theoretical Physics (March 2011 - March 2012)
- Senior Research Associate at Institute of Genomics and Integrative Biology , India in Genomics and Molecular Medicine Research Area (IGIB)(March 2013 - Present)
- Post doctoral research fellow at Institute of Genomics and Integrative Biology , India (June 2018 - present)
- Expertise in Molecular Dynamics Simulation , Quality Assessment , Protein Structure , Protein Modelling , Rosetta , Structure Prediction , BioInformatics.
- Most recent publication - 'Probing molecular forces in multi-component physiological membranes.'
- 21 publications on research gate right now
- Currently working as Assistant Professor @ IIIT Delhi in Department of Computational Biology
- Working in Computational Structural Biology Lab (Lipi Thukral's Lab) as well.

Dr. Ojaswa Sharma

Platform : Twitter (@_ojaswa_)

Link to Research Gate profile : @_ojaswa_

Linked Information:

- Full name : Ojaswa Sharma
- Twitter Handle : @_ojaswa_
- Email-ID : ojaswa@iiitd.ac.in   (Source : http://faculty.iiitd.ac.in/~ojaswa/ (Link provided on profile))
- Office Address: A - 408, Academic Block, Indraprastha Institute of Information Technology, Okhla Industrial Estate, Phase III New Delhi, India - 110020.
- **Phone No: +91-11-2690-7476**

Linkable Information:

- Located in New Delhi
- Joined Twitter in November 2012
- Completed PHD in Mathematics and Computer Science from Technical University (TU) of Denmark , Denmark
- Research Interests - Computer Graphics , Computational Geometry , VR/MR , Volume Rendering and 3D reconstruction.
- Leader of Graphics Research Group @ IIIT Delhi

Platform : Research Gate

Link to Research Gate profile : @Ojaswa

Linked Information:

- Full name : Ojaswa Sharma

Linkable Information :

- Assistant Professor , Dept. of Computer Science @ IIIT Delhi.
- Expertise in: Image processing , Computer Graphics , Computational Geometry , GPU Computing , Feature Extraction , Image Segmentation , Machine Learning ,Computer Engineering , Pattern Recognition.
- 18 publications in researchgate as of now.

Platform : Linkedin

Link to LinkedIn profile : @Ojaswa

Linked Information :

- Full Name : Ojaswa Sharma

Linkable Information :

- Completed schooling from KVGM
- Did BTech in Civil Engineering from IIT Roorkee (1999-2003)
- Age - 39-40
- Did Geomatics Engineering from University of Calgary (2004-2005)
- Completed Masters of Science in Geomatics Engineering from the University of New Brunswick (2005-2006)
- Completed PHD in Maths , Physics and Informatics from Technical University of Denmark (2007-2011)
- Graphics Developer at Ansys Fluent India Pvt. Ltd. , Pune , India (May 2006 - May 2007)
- Research Scholar at university of Texas at Austin (Jan 2009 - May 2009)
- Post Doctoral Fellow at IIT Bombay , India (Jan 2011 - Jun 2011)
- Chief Engineer in Graphics/Multimedia/GPGPU computing at Samsung Research India , Bangalore (Jul 2011 - Feb 2014)
- Assistant Professor @ IIIT Delhi (Jun 2014 - Present)
- Senior Scientist of Nokia (Tampere Area , Finland) (Jan 2020 - Present)

Platform : Orcid

Link to Orcid profile : @Ojaswa

Linked Information :

- Full name : Ojaswa Sharma

Linked Information :

- BTech in Civil Engineering from IIT Roorkee , India (1999-2003)
- MSc in Geodesy and Geomatics Engineering from University of Brunswick.(2004-2006)
- PHD in Mathematics and Computer Science from Technical University of Denmark (2007-2010)
- Member of Association for Computing Machinery: New York, NY, US (2014 - present)
- Member of IEEE Computer Society: Washington, DC, US (2015 - present)
- Research Intern at Ashoka Trust for Research in Ecology and the Environment: Bangalore, Karnataka, India (May 2002 -- July 2002)
- Graphics Developer at Ansys Fluent India Pvt. Ltd.: Pune, India (May 2006 - May 2007)
- Visiting Scholar at University of Texas at Austin (Jan 2009 - May 2009)
- Initiation Research Grant @IIIT Delhi (April 2015 - April 2016)

- Part of Virtual Campus Project (NVIDIA Inc)(July 2015 - July 2016)
- Algorithmic 3D Modelling and Virtual Spatial Interactions (Grant) (Science and Engineering Research Board (New Delhi))(September 2016 - September 2019)
- Part of Minimal residual disease estimation in multiple myeloma using image processing: design and development of Myelomaimager - an automated computer assisted tool (Co-PI)(Science and Engineering Research Board (New Delhi))(Grant)(September 2019 - present)
- 48 articles published at orcid right now.

Question 2:

For this question, first we traced down all the tweets of the professors and the did some computation over the retrieved tweets.

All the tweets of the professors are stored in "tweets" file in json format. Some samples of tweets look like :

```
           Twitter = @ ponguru
Tweeted on =  Fri Feb 28 17:16:42 +0000 2020
Tweet =   Thanks to Bryan and Bhaskar from Graphite https://t.co/hZpeRQvBXA Great job by Prof. {Kaushik, Rahul M}, Rashmil, a… https://t.co/mbZ93RVoZ0

Tweeted on =  Fri Feb 28 17:16:41 +0000 2020
Tweet =   Was wonderful to help host a workshop on No-Code development paradigm https://t.co/5OkLwdBuEN on campus. 200+ stude… https://t.co/9mFrajDyvL

Tweeted on =  Wed Feb 26 16:39:48 +0000 2020
Tweet =   @RatnRajiv @kaushik_k_ @gansbags @Tavpritesh @pravesh \c @AhujaSheetu

Tweeted on =  Wed Feb 26 16:39:09 +0000 2020
Tweet =   Thanks to Pallavi Kaushik for joining the session, giving us tips, and sharing her experience. \c @RatnRajiv… https://t.co/GJxMT0eTnP

Tweeted on =  Wed Feb 26 16:39:09 +0000 2020
Tweet =   Ravi Ji:  @RaviB2020 &amp; https://t.co/UCPrOP3f10
```

Above shown are some of the most recent tweets of Dr. PK

Travel Tweets :

For retrieving travel tweets of professor, we looked up for some keywords in the tweets which are commonly used by anyone who posts a travelling tweet. For example, if some professor is tweeting that he is travelling, he'll post something like : "Reached at xxx", "Visited xxx", "beautiful place" (xxx can be some place name).
Keywords which we looked up in the tweets are :
['at','travel','travelling','journey','trip','city','country','beauty','beautiful','visited','visit','reached','excited']

After getting the tweets which contains above specified words, we manually have cross-checked those tweets. Obviously, this method would ignore the tweets which contains no caption and only pictures. For overcoming this limitation, we have manually looked up travel tweets upto some extent in professors profile.

Below are 5 tweets of professors which signifies that professors were travelling. (Go to folder "travel" if you want to see all the travel tweets of respective prof)

Dr. PK's travel tweets:

```
        Twitter = @ ponguru
Tweeted on =  Mon Feb 17 15:44:06 +0000 2020
Tweet =   Thanks Venky for promoting my visit in CMI 😀 #ProfGiri


Tweeted on =  Mon Feb 17 15:43:50 +0000 2020
Tweet =   Day well spent at Chennai Mathematical Institute (CMI) https://t.co/toBInESW4d &amp; Institute of Mathematical Sciences… https://t.co/MbN3HB6T3S


Tweeted on =  Fri Feb 14 16:42:35 +0000 2020
Tweet =   Talk at BIMSTEC [Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation] Conference on Comb… https://t.co/r6pud9vPGd
```

To text out the above image :

DATE	TWEET
17 Feb 2020	Thanks Venky for promoting my visit in CMI 😀 #ProfGiri
17 Feb 2020	Day well spent at Chennai Mathematical Institute (CMI) https://t.co/toBInESW4d & Institute of Mathematical Sciences… https://t.co/MbN3HB6T3S
14 Feb 2020	Talk at BIMSTEC [Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation] Conference on Comb… https://t.co/r6pud9vPGd

There are 70 more such tweets in "travel" —> "ponguru.json" file.

Some of the images :

Dr. Arjun and Dr. Ojaswa does not have any travel posts on twitter or on linkedIn. These professors does not post anything, when they are travelling or when they are at vacation.

Conference/talk Tweets:

For this section, we apply the same methodology we used in the above section : i.e. , we look up for specific words in a tweet and then we filter out the tweets manually.

Keywords which we looked upon a tweets are: ['attended','conference','gave','talk']

Dr PK conference tweets follows :

```
        Twitter = @ ponguru
Tweeted on =  Mon Feb 17 15:44:06 +0000 2020
Tweet =   Gave a talk to Logicians, Mathematicians, Theoreticians, and Physicists about our Social Media work!!!! Always fun… https://t.co/yWGGyir2S3


Tweeted on =  Thu Feb 13 16:24:20 +0000 2020
Tweet =   I have a speaking slot in the conference tomorrow! Thanks to @unodc for the opportunity. \c @UNODC_ROSA @dg_ncb


Tweeted on =  Thu Feb 06 16:44:11 +0000 2020
Tweet =  2. Gave a talk and interacted with students interested in graduate school admissions. FAQ regarding admissions https://t.co/eRETF10rBd


Tweeted on =  Fri Jan 31 11:07:35 +0000 2020
Tweet =  Dr. @VidurMahajan1 talking about "AI in Healthcare: How is it different?" .... Amazing talk by showing how to be ca… https://t.co/UTMM3n41yF


Tweeted on =  Mon Dec 09 08:47:54 +0000 2019
Tweet =  .@raghavsethi @IIITDelhi's #BTech #Classof2013 is giving a talk on "Presto: Facebook's SQL-0n-Everything Engine" in… https://t.co/SMoGThONZU


Tweeted on =  Fri Nov 22 16:10:08 +0000 2019
Tweet =  0. Gave a talk in Pune as part of ACM Eminent Speaker Program Series, organized by @Persistentsys 60+ attended the… https://t.co/6hlgVKsX30


Tweeted on =  Wed Nov 20 17:03:31 +0000 2019
Tweet =   Spent the forenoon giving a talk on our distracted driving and #killfies work at Cadence Design Systems, Noida. Thi… https://t.co/iIVZ73ZnhG


Tweeted on =  Mon Nov 18 16:18:55 +0000 2019
Tweet =  0. Cosmonaut Sergei Revin https://t.co/6DUUHuDmXR visited campus, gave a talk showing us details on life in space.… https://t.co/Sgec36vd2S
```

A short timeline follows :

DATE	TWEETS
Mon Feb 17 15:44:06 +0000 2020	Gave a talk to Logicians, Mathematicians, Theoreticians, and Physicists about our Social Media work!!!! Always fun… https://t.co/yWGGyir2S3
Thu Feb 13 16:24:20 +0000 2020	I have a speaking slot in the conference tomorrow! Thanks to @unodc for the opportunity. \c @UNODC_ROSA @dg_ncb
Thu Feb 06 16:44:11 +0000 2020	Gave a talk and interacted with students interested in graduate school admissions. FAQ regarding admissions https://t.co/eRETF10rBd

DATE	TWEETS
Fri Nov 22 16:10:08 +0000 2019	Gave a talk in Pune as part of ACM Eminent Speaker Program Series, organized by @Persistentsys 60+ attended the… https://t.co/6hlgVKsX30

More conference tweets can be found in "conference" folder which contains json file of conference / talk related tweets.

Dr. Arjun and Dr. Ojaswa does not post much content on their handles. They just retweet or like other's content. Even after checking manually, we couldn't find any information about their conference scenes.

Award Tweets:

Keyword which we looked upon for award related tweets are:
['won','win','winner','got','award','recieved']

For Dr. PK, some of the tweets we tracked are :

```
           Twitter = @ ponguru
Tweeted on = Mon Feb 03 16:21:29 +0000 2020
Tweet = .@swapeco was judged as winner in "Early Stage Startups" category at the @mBillionth awards organised by Digital Em… https://t.co/R72FXFgb15


Tweeted on = Fri Sep 06 16:36:33 +0000 2019
Tweet = Special congrats to all students who received the award from #StudentAffairs Office, and #Precogs who received vari… https://t.co/YB2FVwI1CK


Tweeted on = Wed Aug 07 16:08:08 +0000 2019
Tweet = .@Shaan_Chopra97 #BTech #Classof2019 won the silver medal in Discus throw in the women's category at the 79th Delhi… https://t.co/8MPoKNR9F7


Tweeted on = Thu May 23 16:09:25 +0000 2019
Tweet = Our #SocialMedia #ReportCard for @AnantkumarH winner #UttaraKannada constituency. Among 6/13 candidates on social m… https://t.co/CN0h2pJBk7


Tweeted on = Thu May 23 13:37:18 +0000 2019
Tweet = Our #SocialMedia #ReportCard for @draksuman winner #Gopalganj constituency. Among 3/13 candidates on social media,… https://t.co/KQ5bJPIaBK


Tweeted on = Thu May 23 13:26:40 +0000 2019
Tweet = Our #SocialMedia #ReportCard for @DKSureshINC winner #BangaloreNorth constituency. Among 15/20 candidates on social… https://t.co/eZ5IqDLohG


Tweeted on = Thu May 23 12:58:20 +0000 2019
Tweet = Our #SocialMedia #ReportCard for @smritiirani winner #Amethi constituency. Among 8/27 candidates on social media, s… https://t.co/uSjkrQQ5R8


Tweeted on = Thu May 23 12:43:42 +0000 2019
Tweet = Our #SocialMedia #ReportCard for @gopaljeebjp winner #Darbhanga constituency. Among 3/8 candidates on social media,… https://t.co/SBjQDnIzXM
```

More tweets could be find in "awards" folder. No information about Dr. Ojaswa and Dr. Arjun Ray could be found in this section.

Question 3 :

For this question, I have used retweet counts as twitter provide the list of people who have retweeted but they do not provide the list of people who likes your post. So, I have just used the retweeters to quantise the engagement of users with professors.
I have created folder "retweeters" which contain name of the retweeters of professors post.

Dr. Arjun Ray :

PERIOD	Top 3 engaged users with Dr. Arjun Ray (Twitter Handle)		
Aug 19 - Feb 20	KentWillisMD	Surabhi_CSB	dkumar02
Feb 19 - Aug 19	suprita2009		
Aug 18 - Feb 18	Damkyan_Omega	dkumar02	

More retweeters are in "retweeters". Most engaged person on twitter with Dr. Arjun is : dkumar02

Dkumar02 : Dilip Kumar lives in Houstan, Texas and is Virologist, Structural biologist, Science enthusiast, Postdoc fellow at BCM.

Dr. PK :

PERIOD	Top 3 engaged users with Dr. PK (Twitter Handle)		
Aug 19 - Feb 20	JS_9228 (7 retweets)	RatnRajiv(6 retweets)	Hitkul_ (4 retweets)
June 19 - Aug 19	DRochiramani (8 retweets)	Hitkul_ (6 retweets)	R_Ashwin (4 retweets)
May 18 - June 18	itzzMeSaurab	_nvedant_	

Some of the common engaged users are Dr. Rajiv Rain Shah (prof at IIITD), Hitkul (TA of PSOSM), JS_9228 (Jyoti Singh : Manager, Dept. of HCD at IIIT-Delhi)

Dr. Ojaswa have no retweets on his twitter account.

Question 4:

Dr. PK Website : [PK](#)

Dr. Arjun Ray website : [Arjun](#)

Dr. Ojaswa Sharma website : [Ojaswa](#)