

**Big Data Management: Homework 1**

1.

- a. A first application of Big Data is healthcare. With the new machines in the hospital, wearable technology and health mobile applications is possible to store a huge amount of data for each patient. These data can be fetched from electronic health records and images of radiology from the hospital and also can be generated by the patient himself through wearable technologies or sensors used to monitor his health.

Since these data come from many different sources their volume increase at an exponential rate. With these huge amount of data is possible to use machine learning algorithms to identify patterns on sick people and understand the causes of the diseases. The results of these algorithms can be useful to predict the diseases and try to prevent the problem, for example it is possible to provide personalized medicine, in fact it is possible to observe these data to see what treatments are more effective for particular conditions and gains other important information that can help patients and reduce costs.

- b. Another example of big data application is the improvement of social media advertisements based on the analysis of big data generated by the users.

In fact, social media platforms are used by brands to advertise and expand their customer base. These companies can track the users from different sources and different social media: messages, likes on posts, shares, checking their followers and who they are following and so on. After collecting this huge amount of data from different users it is possible to make personalized advertisements and get actionable insights for a specific user or a group of users. Finally the analysis of these data could help also potential startups to know if their products could have a market, in fact they can try to post advertisements about a new product in development phase to know if this product will have success or if it will be necessary to stop its development avoiding bankruptcy.

2. C

3. C

4. B

5. A

6. A

7. D

8. B

9. B

10. A

11. E

12. A

13. all correct except the F

14. D query: (STNAME="Arizona" CTYNAME="La Paz County" | table  
CENSUS2010POP)

15. B query: (STNAME="Wyoming" CTYNAME="Uinta County" OR  
CTYNAME="Niobrara county" OR CTYNAME="Platte County" OR  
CTYNAME="Sweetwater County" | sort CENSUS2010POP | table CTYNAME,  
CENSUS2010POP)