Q1. The following statement is made by your manager. Based on the examples and discussion in Lecture 1, transform it in to a question that

can be answered with data analytics. Make sure you discuss the logic and reasoning you use to transform it.

People are downloading our app more and more, but our current users are using the app less and less frequently.

Answer:

* Are users increasing who use our application or just number of downloads increasing? – Number of downloads is increasing does not mean that number of users are growing.
* How many times our application is downloaded in particular time frame? – which gives insight when our app is downloaded the more/less.
* How many hours (or any different time measuring units such as minutes, seconds, etc...) are being spent on our application? – It gives idea about customer actively using app or just they have downloaded on their device.
* Are there number of new registrations increasing? This gives insight whether actual number of users are increasing because it can be possible that someone downloads application on multiple devices but using same registration credentials/log in credentials.
* Which platform has more downloads, and do they use same log in credentials? -Users are downloading on Android, IOS, or desktop version. However, they sign in with same credentials.

Q2. Consider the following three arrays of data. Each array is data for one customer of a streaming service. The numbers in the array represent the number of videos the customer streamed in a day (for example, customer A streamed 21 videos on the first day, 20 on the second and so on).

Customer A: (21 20 19 18 21 20 18 22 20 18)

Customer B: (22 19 18 21 27 21 22 19 21 24)

Customer C: (9 10 8 11 8 7 10 11 7 10)

Based on the data provided, answer the following questions. Make sure to provide *evidence* for your answers.

1. a) Which customer streams the least on a typical day?
   1. b) Which customer is the most inconsistent in the usage of the streaming service?

Answer:

Here, number of videos streamed by three different customers in ten days are given.

If Mean(average) is calculated for given customers, then,

1. Average number of videos streamed by customer A = 21 + 20 +19 +18 +21 +20 +18 +22 +20 +18 / 10 = 19.7
2. Average number of videos streamed by customer B = 22 + 19 + 18 + 21 + 27 + 21 + 22 + 19 + 21 + 24 / 10 = 21.4
3. Average number of videos streamed by customer C = 9 + 10 + 8 + 11 + 8 + 7 + 10 + 11 + 7 + 10 / 10 = 9.1

**Customer C streams the least on a typical day and it is on an average 9.1 videos per day.**

1. b) Which customer is the most inconsistent in the usage of the streaming service?

If we calculate standard deviation for each customer,

Standard deviation for customer A = 1.34

Standard deviation for customer B = 2.49

Standard deviation for customer C = 1.44

Max(A) = 22

Min(A) = 18

Range(A) = Max(A)- Min(A) = 4

Max(B) = 27

Min(B) = 18

Range(B) = Max(B)- Min(B) = 9

Max(C) = 11

Min(C) = 7

Range(C) = Max(C)- Min(C) = 4

**Customer B is the most inconsistent in the usage of the streaming service.**