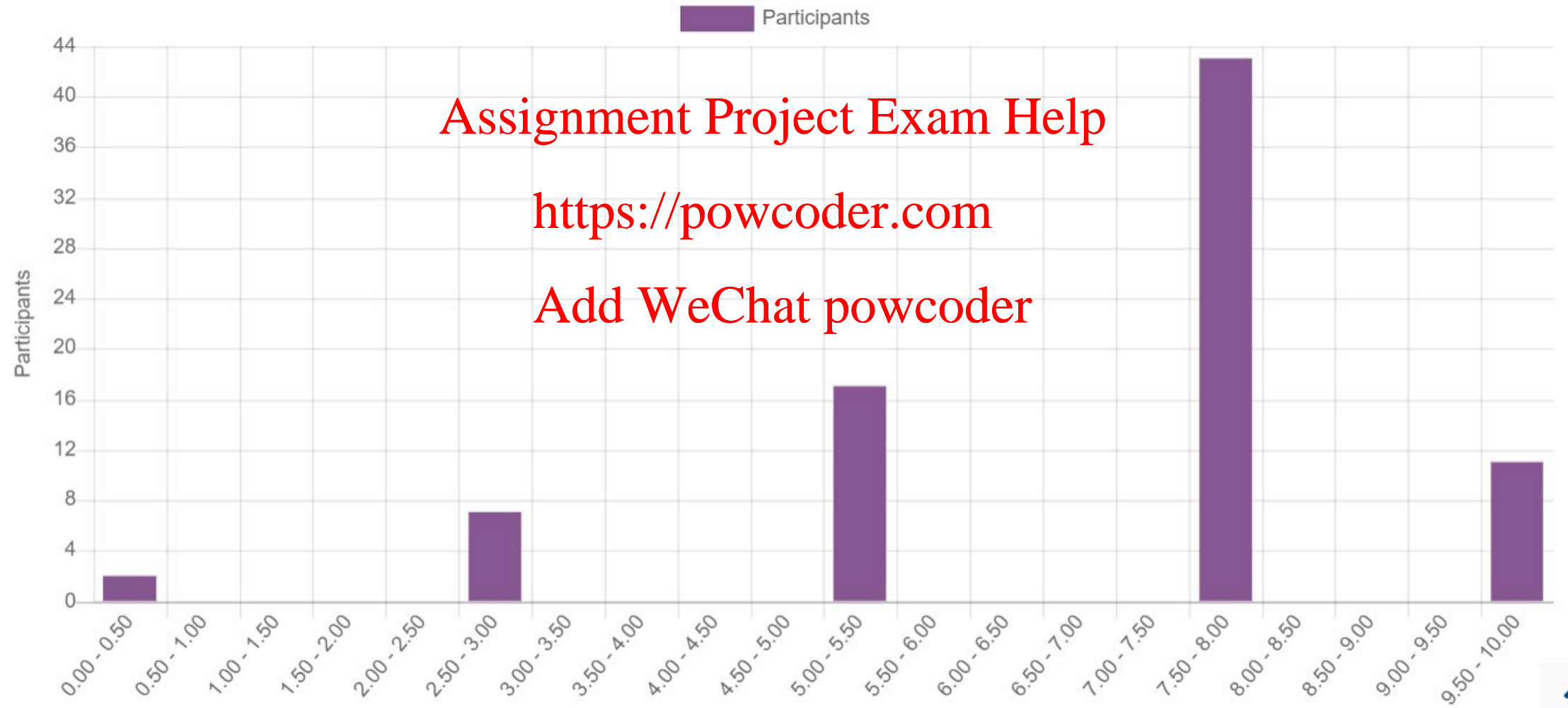


Quiz 9 - statistics

of participants: 80 / 100

average: 6.69 / 10



In class, we have discussed 7 properties of different biometric modalities. Out of the enlisted biometric modalities, which one has the poorest '**permanency**'.

- 1) iris
- 2) fingerprint
- 3) DNA
- 4) voice

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Information	U	N	P	C	A	E
DNA	Yes	Yes	Yes	Poor	Poor	*****
Gait	Yes	No	Poor	Yes	Yes	***
Keystroke dynamics	Yes	Yes	Poor	Yes	Yes	****
Voice	Yes	Yes	Poor	Yes	Yes	****
Iris	Yes	Yes	Yes	Yes	Poor	*****
Face	Yes	No	Poor	Yes	Yes	****
Hand geometry	Yes	No	Yes	Yes	Yes	****
Fingerprint	Yes	Yes	Yes	Yes	Fair	****

In class, we have discussed the relationship(s) between a biometric system's *false reject* (FR) probability and *false accept* (FA) probability and the system's *convenience* and *security*. In the context of those relationships, which of the following statements is not correct.

- 1) A lower FR implies a higher system's *convenience*.
- 2) A lower FA implies a higher system's *security*.
- 3) Knowing the value of FR is not sufficient to determine the system's *security*.
- 4) Knowing the value of FA is sufficient to determine the system's *convenience*.

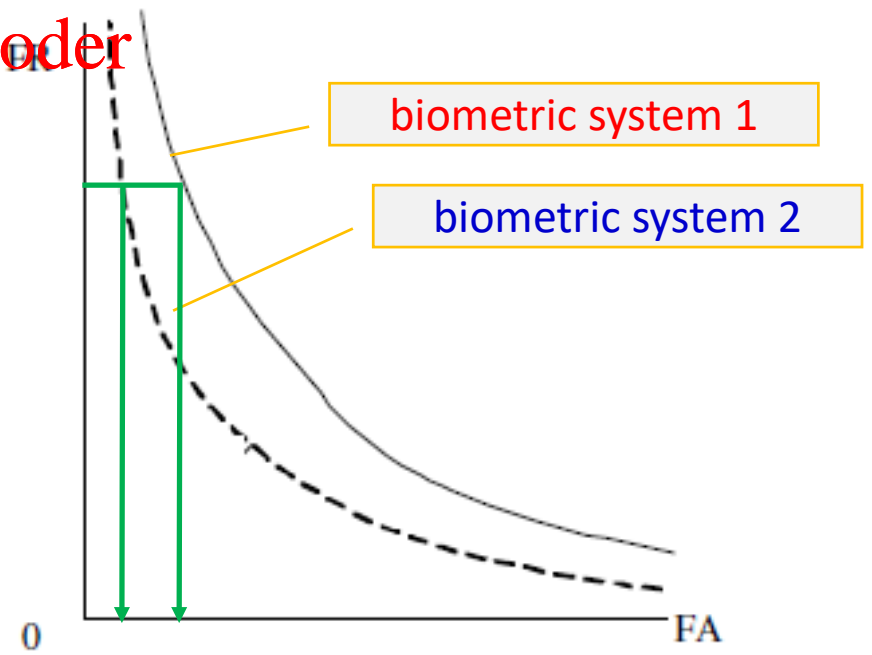
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$$\text{"Convenience"} = (1 - \text{FR})$$

$$\text{"Security"} = (1 - \text{FA})$$



A Canadian bank plans to introduce biometrics-based access control on its ATM machines. The bank is currently considering two different biometric systems, whose FR-FA characteristics are shown in the below figure. If the bank's main objective is to implement a system with better (i.e., lower) crossover error rate (CER), which of the two systems should be the bank's ultimate choice?

1) biometric system 1

2) biometric system 2

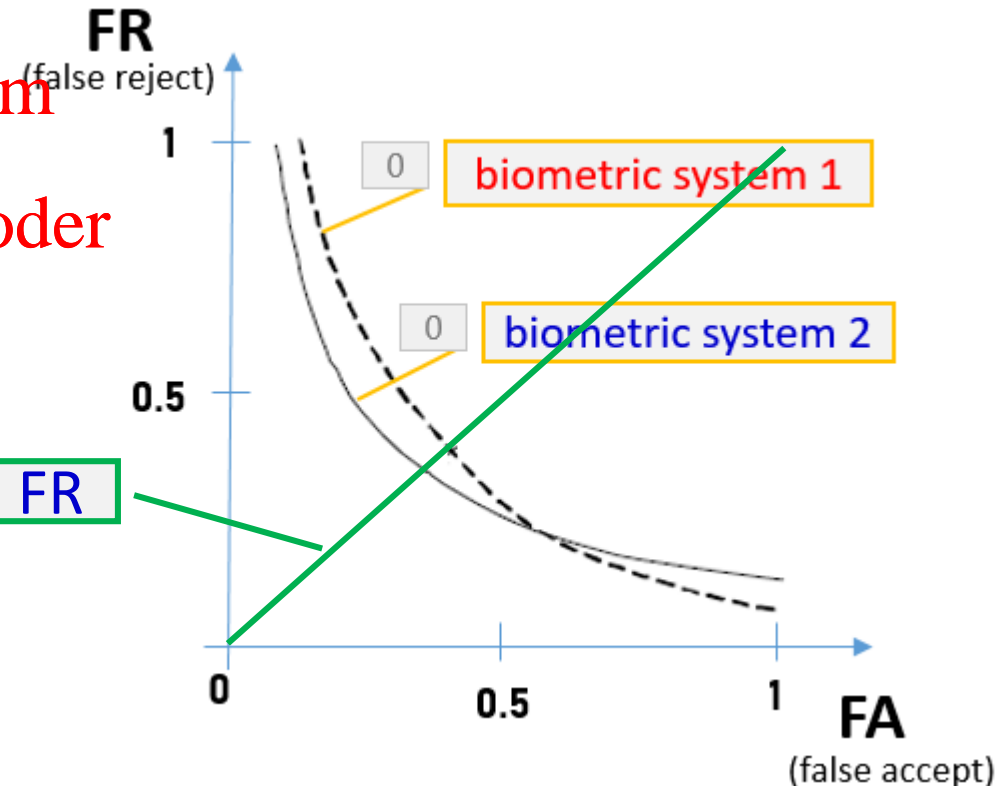
3) both systems have the same CER, so the bank could choose either of them

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set of points where $FA = FR$



Consider the following password policy:

“Passwords should be 6 characters long and be a mix of lower-case English-alphabet letters and numbers. Passwords consisting of letters only or numbers only are not acceptable.”

What is the overall number of acceptable passwords under this policy?

1) 2,176,782,336

2) 2,057,963,143 20% grade

3) 1,966,966,560 20% grade

4) 1,866,866,560 100% grade

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$(26+10)^6 = 2,176,782,336$

10^6

26^6

all 6-char. long
passwords
consisting of
letters and
numbers

6-char. long
passwords
consisting of
letters only

6-char. long
passwords
consisting of
numbers only

$$\text{answer} = (26+10)^6 - 10^6 - 26^6 = 1,866,866,560$$

