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QUIZ SOLUTION, FINAL EXAM REVIEW & FINAL PROJECT

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QUIZ SOLUTION



3 QUESTION 1:

- Give an example of **mobile** applications that uses cloud computing, and explain how cloud computing is used in that application.

Answer: You have to know the main characteristics of Cloud Computing, i.e., Cloud Computing allows the user to perform complex computations or store large files on a remote computer in the Internet, rather than on her own computer. -0.5pt if your explanation cannot convey this concept.

- Explain, traditionally without cloud computing, how this type of application works.

Answer: You will get 0.5pt if your explanation makes sense and does not require the use of Internet or Cloud Computing

4 QUESTION 2:

Explain the Velocity and Volume characteristics of Big Data generated from a social media website or application (e.g., Facebook, WeChat)

Answer: Velocity refers to how fast data is generated and Volume refers to the size of data. An example why Big Data generated from a social media has Velocity characteristic is there are many posts/videos on Facebook every second. An example why it has Volume because there are a lot of users and a lot of posts/videos on Facebook.

You will lose .5pt each if your explanation does not follow the concept of Big Data's Velocity and Volume.

5 QUESTION 3:

Give two reasons why machine learning has just become popular now, and not 20 years ago?

Answer: (1) Hardware was not very powerful to support machine learning 20 years ago. (2) Big data was not available 20 years ago. 0.5pt each

6 QUESTION 4:

Suppose that your friend has trouble remembering many of her passwords and thus she always uses the same password for multiple accounts.

- Explain why it is considered a bad idea to re-use the same password for multiple accounts.

Answer: Because once your password is leaked from one of your accounts, the hacker can use this password to access all your accounts. 0.5pt.

- What tool can you recommend her in order to solve this problem? Explain how this tool can help your friend solve this problem.

Answer: Password Manager (e.g., LastPass, 1Password) because you only need to memorize one master password and other passwords will be generated by this password manager. 0.5pt



7 QUESTION 5:

- Suppose an offline game on your phone (e.g., angry birds) asks to access your location permission during its installation. Should you allow this permission access? Justify your answer.

Answer: No, because an offline game should have no reason to access your GPS location (it shouldn't even have access to the Internet). 0.5pt

- Suppose a web mapping service application (e.g., Google Map or Apple Map) asks to access your location permission during its installation. Should you allow this permission access? Justify your answer.

Answer: Yes, while the GPS location permission is a risky permission, this web mapping service application has a good reason for using it – to provide a navigation to the user, which requires access to the user's GPS location. 0.5pt.


8 TOPICS OF FINAL EXAM

- Cloud Computing
- Big Data
- Artificial Intelligence + Machine Learning
- Internet Security
- Internet Privacy

9 FINAL EXAM INSTRUCTIONS

- 6 questions
- Date/Time: October 6, 2020, 1:30pm – 3:00pm (3 hours)
- Place: LMS
- Open book/open lecture materials/open Internet
- No discussion/no talking with other people (except me) during the exam
- **NO CHEATING!!!!!!**

FULL INSTRUCTIONS

- The exam lasts exactly 3 hours (13:30-16:30 October 6, 2020).
 - **This is an individual exam. You MAY NOT work with or discuss with other students or other people on this exam.**
 - 15 points total. 15% of your entire grade.
 - This exam is open-book and open-internet. This means you may use any lecture materials or browse any websites during the exam.
 - However, you MAY NOT ask questions on web forums or any websites during the exam. Doing so is considered cheating behavior.
 - If you get answers from websites, you MUST properly cite such websites. (Mentioning website URLs in your answer is okay and enough).
 - If the question asks you to "justify your answers", you must explain your reasoning for your answer. Answer without justification receives 0 point.
 - If you are not confident with your English writing skills, you may answer in BOTH CHINESE and ENGLISH. I will first grade your exam based on your English answer. And if you lose points because of language issues, you may appeal and I will grade it based on your Chinese answers.
 - You will lose 20% of the full point from a question if your answer to that question is in only Chinese (without accompanying with an English answer).
 - You may attempt and submit your answers as many times as you want but I will grade only your last attempt.
 - **Any form of cheating is NOT allowed and will not be tolerated. Cheating students will immediately fail the exam and this course, as well as face severe punishment by the university.**
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**DOES ANYONE WANT TO TAKE THE
FINAL EXAM AT THE UNIVERSITY
(INSTEAD OF ONLINE)?**



12 FINAL PROJECT

- Final Project Presentation (10pts)
- Final Project Report (10pts)

13 FINAL PROJECT PRESENTATION

- Title/Abstract: 1 pt
- Introduction: 2 pts
- Literature Review: 2 pts
- Challenges/Solutions: 2 pts
- Results: 2 pts
- References: 1 pt

14 TITLE/ABSTRACT

Title should be clear. I should be able to know what kind of topic is in your final project by just reading the topic.

Abstract should summarize your final project; it should explain why your project is important, how you conducted the study in this project, and what you have learned (the major results/findings of your project).

0.5 point for Title and 0.5 point for Abstract

ABSTRACT EXAMPLE

UK environmental organizations currently face a significant funding gap. It is well-established that representations of individual victims are more effective than abstract concepts like climate change when designing fundraising campaigns. This study aims to determine how such representations can be better targeted in order to increase donations. Specifically, it investigates whether the perceived social distance between victims and potential donors has an impact on donation intention. In this context, social distance is defined as the extent to which people feel they are in the same social group (in-group) or another social group (out-group) in relation to climate change victims.

To test the hypothesis that smaller social distance leads to higher donation intention, an online survey was distributed to potential donors based across the UK. Respondents were randomly divided into two conditions (large and small social distance) and asked to respond to one of two sets of fundraising material. Responses were analyzed using a two-sample t-test. The results showed a small effect in the opposite direction than hypothesized: large social distance was associated with higher donation intention than small social distance.

These results suggest that potential donors are more likely to respond to campaigns depicting victims that they perceive as socially distant from themselves. On this basis, the concept of social distance should be taken into account when designing environmental fundraising campaigns.



ABSTRACT EXAMPLE

UK environmental organizations currently face a significant funding gap. It is well-established that representations of individual victims are more effective than abstract concepts like climate change when designing fundraising campaigns. This study aims to determine how such representations can be better targeted in order to increase donations. Specifically, it investigates whether the perceived social distance between victims and potential donors has an impact on donation intention. In this context, social distance is defined as the extent to which people feel they are in the same social group (in-group) or another social group (out-group) in relation to climate change victims. -> (why your project is important)

To test the hypothesis that smaller social distance leads to higher donation intention, an online survey was distributed to potential donors based across the UK. Respondents were randomly divided into two conditions (large and small social distance) and asked to respond to one of two sets of fundraising material. Responses were analyzed using a two-sample t-test. The results showed a small effect in the opposite direction than hypothesized: large social distance was associated with higher donation intention than small social distance. -> (how you conducted the study)

These results suggest that potential donors are more likely to respond to campaigns depicting victims that they perceive as socially distant from themselves. On this basis, the concept of social distance should be taken into account when designing environmental fundraising campaigns. -> (what you have learned)



17 INTRODUCTION

Should clearly state why the topic of your project is important.

Can be done by giving concrete examples of important problems that can be solved by the topic of your project

18 LITERATURE REVIEWS

Give the overview of existing work related to the topic of your final project



19 CHALLENGES AND SOLUTIONS

What are the current/past/future challenges of the topic you are doing?

How were they solved? (if they are the past challenges)

How can it be solved? (if they are the current challenges)



20 RESULTS

Contain the result of your study

If you conducted the study by doing a survey (e.g., asking people questions), you should mention in details how this survey is conducted (e.g., did you ask them in person or via online? How many people did you ask? Are they only in China or other countries too?)

REFERENCES

- Contain references used in this report
- These references MUST be referred in the report
- For example:
 - If you want to add this website as reference:
 - [1] <https://edition.cnn.com/2020/01/30/opinions/big-data-human-trafficking/index.html>
 - You may put the following text in your literature review section:
 - “Big data can be used to combat human trafficking [1]”
- If you have references without being referred in the main report, you may lose some points.

22 FINAL REPORT STRUCTURE

Title: [Title paragraphs]

Abstract: [Abstract paragraphs]

Introduction: [Introduction paragraphs]

Literature Reviews: [Literature reviews paragraphs]

Challenge and Solution: [challenge and solution paragraphs]

Results: [results paragraphs]

References: [a list of references]

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FINAL PROJECT PRESENTATION

- Time: Next week (Sept 22, 24)
- 12 mins + 3 (Q&A) mins
- Sept 22: ZBC, Information Age, Flowers, Hope Star
- Sept 24: Boom, Storm, Return of the king, ABC
- You may swap the date with the other team if they agree

FINAL PROJECT PRESENTATION

- 10 points total
- Understanding: 5pts
- Presentation skills: 2pts
- Questions and Answers: 3pts

PLEASE BE PREPARED

if I cannot understand your presentation, you may lose points

I'll grade this presentation **HARSHER than the previous team assignment presentation**

(More likely that your team will not get the full point if your team didn't prepare well)

25 QUESTIONS?

