Please include your student number in filename (e.g. 1234567)

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| Student number: | 2762292T |
| Course title: | COMPSCI5092 Research and Professional Skills M - 2022-23 |
| Questions answered: | All |

1a) B

1b) C

1c) C

1d) C

1e) The database is considered to be protected if the selection or arrangement of the database is a part of the author's intellectual creation. Other than that, the amount of investment from the author towards the database also take into account. This include actions like obtaining, verifying or presenting the information of the database.

1f) Legislations that target societal issues in IT require constant refresh and amendment due to the fact nature of the ever-evolving technology, which is why GDPR is introduced. The first reason is that the advancement in the cloud has resulted in data being spread throughout the entire world. For example, data subjected in the EU can be stored in a north American server. The second reason is consent. Usage of user data is prohibited without the consent of the user. Users must acknowledgement of their data is being used either for advertising or business purposes. The third reason, everybody's presence on the internet has increased throughout the decade, every user of the internet must retain their right to that personal data on the internet. The last reason is the portability of the user's data. The users have the right to choose the controller of their data.

2) The first important note is that correlation doesn't imply causation. Maybe students who have a stronger programming ability prefer to take Physics. If the data shows that students who studied Physics and their ability to program are correlated, doesn't mean that studying Physics improved the ability of programming. The second note is that does the result in the multiple-choice programming quiz accurately reflect the ability of programming? Some students may be bad at taking exams (e.g. programming quizzes) but have great ability in programming. The third note is the method of comparison. The mean score alone won't be sufficient to represent the ability of a group of students. A distribution is more suitable for this experiment.

3a) The advantages of within-subject is that the capability of java remains the same for both scenarios. The ability of Java Programming doesn't change when the programmer switch from single programming to pair programming. The ability of java programming became the constant variable. The advantages of between-subject are that the work given in the experiment could remain the same for all programmers as it's their first time taking the test. So the work become the constant variable.

3b) Quantitative variable could be time taken to solve a certain lab programming question. Qualitative variable could be the asking the programming's view and experience towards pair programming.

3c) Closed-ended question: How would you rate your programming efficiency and experience from pair programming on a scale on 1 to 10?

Open-ended question: Would you prefer the pair programming than the traditional programming method? If so, why?

3d) The duration of the experiment. Programming for a long period could be mentally exhausting for the programmer. The second concern is the stress given towards the programmer. Programming sometimes could be stressful and the subject has the right to abort the experiment if he/she chose.

4) First, we have to determine the problem that we want to solve. The problem is whether AR-assisted workers have higher productivity compared to workers without AR assistance. The hypothesis is AR assisted workers have higher productivity compared to workers without it. As our scenario is quite specific, it is better to do primary research so that the evidence is better suited to our experiment. An experiment of between-subject is planned where the workers are separated into two groups, one group of workers will work for 14 days with AR assistance while the other group will work as they normally would. Each group of workers are chosen in random and uniform sampled from each department of the warehouse. Quantitative data is collected based on the number of package outputs from each group and qualitative data is collected based on the quality of packing rated on a scale from 0 to 10. Workers have the right to opt-out of the experiments from any given period of the experiment. Data is collected and analyzed between both groups of workers. Results were presented and peer-reviewed to ensure the quality of the experiment.