**Ethics - Preparatory Questions**

**1. Explain what is meant by the “dual use” dilemma.**

Dual-use dilemmas arise when the same scientific work can be used to do good or be misused, and it is unclear how to prevent misuse without foregoing beneficial applications.

**2. Rashid et al give examples of dual uses of technology, e.g. civil and military. List three other examples of dual use, which include a dilemma.**

* Google Maps - used for street view and check locations, misused could be used by criminals to plan a heist or try to acquire information on a specific address
* Nuclear technology (reactors) - create a huge amount of the world's energy, but is very dangerous with the nuclear waste and risks and could be used as a destructive force
* Night vision technology - to be used during the night to actually see something where its dark, could be a cave or anything, however it is also used by the military to take out their targets during the dark and to stalk people

**3. Describe the technical issue in “The $100,000 Keying Error”.**

The issue with this error was that the bank's interface didn’t use any form of error checking more than if the correct input was there. The issue is that the user inserted the wrong account number and sent the 100k to someone else, the bank is blamed due to not having error checks if the number is right. The user interface accepted only 11 digits in this field (the standard length of a Norwegian account number) which changed the number to 11 digits when the number the user inserted had 12 digits, deleted the last digit that was overflowed and sent the money to the wrong account.

**4. What would be needed to avoid the technical issue in “The $100,000 Keying Error”?**

This question is difficult to answer, however, what could be done is to add extra security regarding the length of the number sequence. The Norwegian banks accounts use a 11 digit number sequence and an error check could be to tell the user that the digits length is smaller or bigger than 11. If the length is 11 and the user inserted the wrong account number then it is the user’s problem.