

91908R



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

COMMON ASSESSMENT TASK

Level 3 Digital Technologies and Hangarau Matihiko 2021

91908 Analyse an area of computer science

Credits: Three

RESOURCE BOOKLET

This booklet contains resources for Digital Technologies and Hangarau Matihiko 91908. Refer to it if you have chosen to answer Question Two or Question Three.

Check that this booklet has pages 2–5 in the correct order and that none of these pages is blank.

IF THIS BOOKLET HAS BEEN PRINTED, YOU MUST HAND IT BACK TO YOUR TEACHER AT THE END OF THE ASSESSMENT SESSION.

NETWORK COMMUNICATION PROTOCOLS

Refer to Resources A to D if you have chosen to answer **Question Two**.

RESOURCE A: HTTP request message



Source: HTTP (HyperText Transfer Protocol) Basics. https://www3.ntu.edu.sg/home/ehchua/programming/webprogramming/HTTP_Basics.html

RESOURCE B: TCP and UDP



Sources: <https://7learn.com/programming/python/socket-programming-in-python>

RESOURCE C: Data packets



Bischoff, Paul. (2019). UDP vs TCP: What are they and how do they differ? <https://www.comparitech.com/blog/vpn-privacy/udp-vs-tcp-ip/>

RESOURCE D: Ports

The “Connection” settings panel for the Skype application shows the ports on which it listens for incoming connections.



Source: Baset, S.A. and Schulzrinne, H. (2004). An Analysis of the Skype Peer-to-Peer Internet Telephony protocol. <https://arxiv.org/ftp/cs/papers/0412/0412017.pdf>

BIG DATA

Refer to Resources E to G if you have chosen to answer **Question Three**.

RESOURCE E: Google's Community Mobility Reports

During the global COVID-19 pandemic, Google has published Community Mobility Reports to give insights into people's movements. The tech giant has used location history data from people's devices to show changes in visits to places like grocery stores and parks. It says the information can be used to help public health officials and others understand people's responses to social distancing guidance related to COVID-19.

At midnight on 25 March 2020, the whole of New Zealand went into self-isolation. On 29 March, Google published a Community Mobility Report for New Zealand. This showed a staggering 91 per cent drop in the number of visits to "retail and recreation" venues such as cafes and shopping centres.



Source: Google. (2020). COVID-19 Community Mobility Report. 29 March 2020, p. 1. https://www.gstatic.com/covid19/mobility/2020-03-29_NZ_Mobility_Report_en.pdf

RESOURCE F: Regional analysis

As well as data for the whole country, the report included a breakdown of the information for individual regions.



Source: Google. (2020), p. 5.

RESOURCE G: Privacy statement

The report included the following statement entitled “Preserving privacy”.

These reports were developed to be helpful while adhering to our stringent privacy protocols and protecting people’s privacy.



These privacy-preserving protections also ensure that the absolute number of visits isn’t shared.

Source: Google. (2020), p. 11.