Application software – na' e fa' u ia ke tokoni ke toe faingofua mo lelei ange e ngāue 'a e tokotaha ngāue (user)

User interface – ko e fōtunga 'oku 'omai 'e he computer 'o 'asi mai he screen ke ngāue'aki 'e he user

'I he kamata hono fo'u e fakahinohino' (program pe software) ke ngāue'aki 'e he computer' na'e kamata'aki e user interface ko e **text interface**. Ko e me'a na'e 'asi mai he screen na'e lanu 'uli'uli pea 'ikai ha fakatātā ke click ai hange ko e taimi' ni, ka na'e pau ke te ako ma'uloto e ngaahi command words 'o taipe'i ke fakahoko 'e he computer e me'a 'oku fiema'u 'e he user. Kapau 'e taipe'i hala e commands 'e 'ikai lava 'o fai e ngāue 'oku fiema'u', ko ia ko e ngāue fakakomipiuta' na'e faingata'a 'i he'ene kamakamata mai' he na'e fiema'u ke ako ma'uloto e ngaahi commands kae toki lava ke ngāue'aki 'e he user 'a e computer.

'I he kamata ke fakalakalaka hono fo'u e computer, na'e fa'u leva 'o tānaki mai e ngaahi **menus** pea lava 'o ngāue'aki e arrow keys ke lava 'o move takai he screen ki he me'a 'oku fiema'u 'e he user.

Faai mai 'o a'u ki hono fo'u e me'a 'oku ui ko e **graphical user interface (GUI)**, ko hono ngāue'aki e fakatātā 'oku 'asi mai he screen ke click pē ai e user pea lava e computer 'o run ha polokalama, pe ngāue, 'oku fiema'u 'e he user ke fakahoko'. Ko e taimi' ni 'oku tau ngāue'aki e GUI, pea ko e fanga ki'i fakatātā 'oku 'asi mai he screen 'oku kau ai e **icons, buttons, menu** pe **ribbon** hangē koi a 'oku tau ngāue'aki he Microsoft Word, 'oku tau click pē pe ngāue'aki e short cut keys 'i he keyboard ke tala ki he computer e me'a 'oku tau fiema'u ke ne fakahoko'.

Word Processing: ko e application program, ko e software 'oku ngāue'aki ki he fa'u pe liliu tohi.

Manatu'i ke ngāue ki he exercise Word 2-1, 2-2 mo e 2-3. Ngaue'aki e ngaahi short-cut keys na'a tau 'osi sio ki ai.

Quiz:

1. What is the name of the software application we are currently using to do our exercises?
2. What is the largest, fastest, most expensive type of computer?
3. A computer that links several computers together in a network is called a _____.
4. The MOST COMMONLY used input device is the _____.
5. A trackball and joystick are examples of _____.

CPU (Central Processing Unit) – 'atamai e computer

Ko e konga eni he computer 'oku fakahoko ai e ngāue'. 'I he taimi' ni, 'oku lahi e ngaahi computer 'oku ua pe lahi ange e CPU 'oku fa'o 'i loto', pea 'i he'ene pehee, 'oku toe vave ange e ngāue 'oku fakahoko 'e he computer koi a. Ko e CPU 'oku konga lalahi 'e 2. Ko e konga 'e taha ko e Control Unit (CU) pea ko e konga 'e taha ko e Arithmetic Logic Unit (ALU).

Ko e **MEMORY**, ko e feitu'u eni 'oku tuku fakataimi ki ai e ngaahi fakahinohino' pe software 'oku lolotonga lele', pe ko ha toe ngāue pē 'oku fiema'u ke fakahoko 'e he computer, pea mo e ola 'o e ngāue kuo 'osi fakahoko 'e he computer, 'o teuteu ke 'omai 'i he output, pe tauhi ki he STORAGE DEVICE.

Manatu'i ko e CPU, MEMORY mo e STORAGE DEVICE ko e ngaahi kongokonga hardware.

Ke fakahoko ha ngāue 'e ha computer, 'oku 'i ai e fo'i cycle 'oku step fā, kuopau ke fakahoko ke kakato ki ha fa'ahinga ngāue pē. (Machine Cycle)

Machine Cycle

1. **Fetch**: get an instruction from Main Memory (Manatu'i ko e ngāue kotoa pē ke fakahoko 'e he computer, kuopau ke 'ave ia 'o tuku ki he Main memory, talitali ai ke fakahoko e Machine cycle. 'A ia ko e Main memory 'oku hangē ha loki talitali'anga kakai) 'omi e fakahinohino na'e tuku mai ki he Main memory
2. **Decode**: translate instruction into computer commands (liliu leva e ngaahi fakahinohino ko eni ki he fakahinohino 'e mahino ki he ngaahi kongokonga kehekehe 'o e computer)
3. **Execute**: actually process the command (fakahoko e ngāue na'e fiema'u e computer ke ne fakahoko')
4. **Store**; write the result to Main Memory (ma'u e ola e ngāue 'o toe fakafoki pē ki he main memory 'o tuku ai ke fakahoko e fakahinohino hoko' pe 'ave 'o tauhi pe save ki he storage device.

Hangē ko 'etau talanoa ki he CPU 'i he konga ki 'olunga', 'oku konga 'e ua. Ko e Decode he Machine Cycle 'oku fakahoko ia 'i he Control Unit 'o e CPU, pea ko e execute 'oku fakahoko ia 'i he ALU 'o e CPU.

E.g.

Ke tānaki e 5 mo e 6 pea 'omai e mo'oni he screen, ko e ngaahi sitepu eni 'e fakahoko':

1. Fetch instruction: "Get number at address 123456"
2. Decode instruction
3. Execute: ALU finds the number (*which happens to be 5*)
4. Store: the number 5 is stored in a temporary spot (feitu'u fakataimi) 'i he Main Memory

5-8: Repeat steps for another number (6)

9. Fetch instruction: "Add the two numbers"
10. Decode the instruction
11: Execute: ALU adds the numbers
12. Store: The answer is stored in a temporary spot in the Main Memory
13. Fetch instruction: "display answer on screen"
14. decode instruction
15. Execute: Display answer on screen for user to see

Kapau te ke fakatokanga'i ko e fakahinohino kotoa pē kuopau ke muimui tonu he 4 steps 'o e machine cycle, ka ke manatu'i ko e ngāue ko eni 'oku fu' u oma 'aupito hono fakahoko 'i he loto computer, he

‘oku lava ‘o fakahoko e ngāue ki he fakahinohino ‘e laui miliona (he 4 steps ‘a e machine cycle) he sekoni pe ‘e taha (computer is able to do millions of such steps in a second)

Main Memory (manatu ‘a e computer)

‘i loto he Memory, ‘oku ‘i ai e fanga ki’i feitu’u ‘oku tauhi ki ai e me’a kotoa pē ‘oku fiema’u ke ngāue ki ai e computer. Ko e fanga ki’i feitu’u ko eni’ ‘oku ‘i ai pe honau ngaahi tu’asila takitaha, pea ‘oku ‘ikai ha tu’asila ‘o ha feitu’u ‘e tatau. Hangē pe ko e fakahingohingoa e ngaahi puha meili he post office, ‘oku pehē pe hono fakahingohingoa kehekehe e fanga ki’i feitu’u ‘oku fai ki ai e tauhi ‘i he Main Memory.
Ko e tu’asila kotoa pē he Main Memory, ‘oku lava ke ne puke e data ko hono lahi ko e byte ‘e taha (1).
Fakakaukau pē, ko e tu’asila ‘e taha he Main Memory, ‘oku tau ki ai e laine ‘uhila ‘e 8 pea ko e laine ‘uhila ‘e valu’, ‘oku nau fa’u ‘enautolu e me’a ‘oku ui ko e byte.
1 bit = tatau ia mo e laine ‘uhila ‘e taha. ‘A ia ko e laine ‘uhila ko eni’ ‘oku mo’ui (ON) pe mate (OFF), pe ‘oku tohi’i ‘o ngāue’aki e 1 ki he ON, pea 0 ki he OFF.
1 byte = 8 bits pe laine ‘uhila ‘e valu’ ‘oku ui ia ko e byte, pea ko e byte ‘e taha ‘oku lava ‘e he tu’asila ‘e taha ‘i he Main Memory ‘o tauhi’.
1 kilobyte = 1024 bytes
1 megabyte = 1024 kilobytes
1 terabyte = how many megabytes?

Quiz

1. What processes are involved in the information processing cycle?
2. The computer’s processor consists of how many parts? What are they?
3. Which part of the CPU does calculations using addition, subtraction, multiplication, and division?
4. What is the name of the location of a particular piece of data?
5. One megabyte is equal to how many kilobytes?
6. Do a little research on what it means by a **processor has a word size of 32 bits** and compare it to a processor with a word size of 16 bits.

The answer to the quizzes will be handed in at the beginning of the classes Tuesday next week!