Grade 10 Computing

Unit 6 · Fixing Problems and Learning Any New Tool

ANSWER KEY · FOR TEACHERS

Full marks 27

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Key words

1. troubleshooting
2. error code
3. isolate
4. checksum
5. package manager
6. shell
7. working directory
8. absolute path

Each carries 0.5 mark. **K · 4**

2 Label the diagram

1. the user
2. the output
3. the command
4. its argument: the file it works on

Each carries 0.5 mark. **K · 2**

3 Multiple choice

i. **c.** It empties memory, so the app starts again from storage in a clean state. **U · 1**

Memory (RAM) is cleared when the power goes off, and with it whatever bad state the app had got itself into. Storage, where the app and your files are kept, is not touched, so nothing of yours is lost (except work you hadn't saved).

ii. **b.** Find the other program that has report.docx open, close the file there, then save again. **A · 1**

The message says exactly what is wrong: another program is using the file. Closing it there fixes it. Restarting would also free the file, but you would lose your unsaved work, the very thing you were trying to save. Reading the error saves you from the big, slow fixes.

iii. **b.** Search for the error's exact message in quotes with the program's name, and leave out his file name, folder and line number. **A · 1**

Nobody else has a file called `project final 2.py` in his Desktop folder, so those words match nothing useful. The exact error message, in quotes, with the program's name, is what thousands of other people saw and searched for.

iv. **b.** Click No, delete the file, and download the program again from its maker's own website. **U · 1**

Real installers do ask for permission, but a well-known program's installer is signed by its maker, so the box names them. "Unknown publisher" means the file may have been changed by someone else. Once a harmful installer has administrator permission, a scan afterwards may be too late.

v. **b.** The file is not the one the maker published: don't install it. **U · 1**

A file's hash changes completely when even one bit of the file changes, and the same file always gives the same hash, on any computer. Any difference at all means a damaged or changed file. Download it again from the maker's site.

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4 Trace the commands

ANSWER A · 3

Command	Working directory after it
`cd school/class10`	`/home/asha/school/class10`
`cd ..`	`/home/asha/school`
`cd science`	`/home/asha/school/science`
`cd ~`	`/home/asha`
`cd Downloads`	`/home/asha/Downloads`
`cd ../school/class10`	`/home/asha/school/class10`

MARKING SCHEME

- ✓ `/home/asha/school/class10`, then `/home/asha/school` (`..` is one level up).
- ✓ `/home/asha/school/science`, then `/home/asha` (`~` is her home folder).
- ✓ `/home/asha/Downloads`, then `/home/asha/school/class10` (up to her home folder, then down again).

5 What does the terminal print?

MARKING SCHEME A · 3

- ✓ `/home/asha` from the first `pwd`, and `class10  science` from `ls` in the school folder. (`cd` prints nothing when it works.)
- ✓ An error for `cd Science`: there is no folder of that name, because names are case-sensitive and the folder is `science`.
- ✓ `/home/asha/Pictures`: `..` went up from school to her home folder, then into Pictures.

6 Read the error

MARKING SCHEME A · 3

- ✓ Line 5, a NameError (the last line of the message names the kind of error).
- ✓ The exact message in quotes with the program's name (Python), leaving out his own file path and line number, because only he has them.
- ✓ `len(marks)` in place of `len(mark)`, and the output `Average: 74.66666666666667`.

7 Short answers

a. **MARKING SCHEME** U · 2

- ✓ A restart empties memory (RAM), so a stuck job or a bad state is thrown away and everything loads fresh from storage, in a clean state.
- ✓ If the problem comes back, something keeps causing it: the restart only hid it for a while, and the cause must be found.

b. **MARKING SCHEME** A · 3

- ✓ Another website on the laptop: if others open, the one website is the problem; if none open, it is the laptop or the connection.
- ✓ The same website on a phone using mobile data: if it doesn't open there either, the website itself is down.
- ✓ Any website on a phone using the home Wi-Fi: if it opens, the router and the line work, so the problem is in the laptop; if nothing opens, it is the router or the line.

8 Think

ANSWER

The way to learn will still help: start with a small real task, read the makers' help for your version, follow a tutorial while doing each step, test every step an AI assistant gives, practice on a copy, and check yourself by doing it again without help and teaching it. So

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will the ideas most programs share (files, undo, select then act, settings, help), because new tools are built by people who used the old ones. What won't last are the names of today's programs, assistants and websites, and their exact menus: they change every year.

MARKING SCHEME

- ✓ What will still help: the way to learn (a small real task, the makers' help, a tutorial done step by step, testing what an assistant says, practicing on a copy, checking yourself by teaching it) and the ideas programs share (files, undo, select then act, help).
- ✓ What won't last: the names of particular programs, assistants and websites, and their exact menus.

9 Activity: Find the broken setting

(not marked)

WHAT STUDENTS SHOULD FIND

The log should start with an exact description of the problem (what was expected, what happens instead), then one change or test per row, each followed by what it showed. Good logs try the quick checks first (the volume icon, the Wi-Fi or airplane-mode icon, the date in the corner), change one thing at a time, and undo a change that didn't help. Faults that show themselves on the screen (a muted speaker icon, a wrong date) are found fastest; a changed keyboard layout or swapped mouse buttons take longer, because the problem looks like a broken keyboard or mouse until a test (another program, another mouse) rules that out.

Marks by level	Knowledge	Understanding	Application	Higher ability	**Total**
Marks	6	5	14	2	**27**

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