

Markschemes

21N.1.HL.TZ0.7

a.

Award [2 max]

A sub-program is a named section of code that performs a specific task (in a program) / can be called by name / referred by the identifier when needed;
without knowing the details (of code and data structures) as these are wrapped / hidden within the sub-program;

b. *Award [3 max]*

different stages (of programming) (*Accept examples!*) run simultaneously (rather than consecutively);
this decreases product development time / decreases the time to market;
leading to improved productivity/reduces costs;
however, it requires more resources/more software developers;

c. *Award [2 max]*

A message can be sent to the user (When the software is installed and registered, the user provides an email address / phone number);
With a link to the update;

notifications/alerts are sent to the computer (a cookie is placed on the user's computer which communicates with the software developer);
about automatic updates;

(when the program is run) it queries a URL the program developer has built in to check whether the current version matches the latest version;
if not, notifications/alerts are sent;

17N.1.HL.TZ0.10

a.

Each word in the text file is compared with words in a dictionary (held in memory/online);
If the word is found in the dictionary it is correctly spelt / if the word is not found in the dictionary, spellchecker will recognize that it is incorrectly spelt;

b. *Award [1] for stating a problem and [1] for an elaboration, up to [2 max].*

Users/employees might be afraid of these changes (for various reasons);
And not willing to help in this change;

Data migration problems;
For example, different file formats so conversion must be performed;

Employee efficiency may drop;
As they learn to use the new system;

Issue of compatibility with legacy software/hardware;
So features of new software/hardware may not work correctly;

c.

*Award [1] for outlining what is meant by direct changeover, [1] for outlining what is meant by phased conversion, and then [1] for an advantage or disadvantage **of each**, up to [4 max].*

Example answer

In direct changeover, the old software and hardware is completely replaced, in one move, by the new software and hardware;

Phased conversion involves selecting one section in the office for the direct changeover and other sections will be switched when the first section selected is running satisfactorily. Eventually the whole office has been changed;

A phased conversion is less risky than a direct changeover as any problems that might arise will be isolated in only one section in the office;

Direct changeover means everyone in the organization has same software/hardware and so there are no compatibility issues;

d. *Award* .

Debugging (: white-box testing – i.e. structural testing/flow testing;
black-box testing / requirement testing);

User acceptance testing (alpha-testing) / Beta-testing;