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EXPERIENCES WITH QEDIT

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ABSTRACT

   The purpose of this paper is to share our experiences with QEDIT,
a text-editing package of Robelle Consulting Ltd. These observations
were made over the past two years in two different environments. The
first environment included 15 to 20 programmers developing a large,
COBOL application system on a dedicated 512K byte, HP3000 Series II.
The second environment included 5 COBOL programmers competing for
machine resources with 10 to 25 production users of a large,
integrated, COBOL system that uses IMAGE on a 2M byte, HP3000 Series
III.

   To begin, let's examine a typical programming cycle without the
aid of QEDIT. At this point, the programmer has a rather lengthy
(although average by COBOL standards) COBOL program. A test run has
just indicated that either some bugs have been uncovered, or all is
well enough to add the next block of logic. The cycle begins:

    Step 1: The editor, EDIT/3000, is invoked.
            Average time: a few seconds.

    Step 2: The COBOL source file is TEXTed in.
            Average time: 10 minutes.

    Step 3: Modifications are made to fix bugs,
            add new logic, add comments, resequence
            the file, etc.
            Average time: 25 minutes.

Step 4: The modified file is kept into a
        standard KEEP file.
        Average time: 10 minutes.

Step 5: The editor is exited.
        Average time: a second.

Step 6: The new source file is compiled
        using the COBOL compiler. Alas,
        even programmers are human and
        some syntax errors are noted.
        Average time: 15 minutes.

Step 7: The editor is invoked as in Step 1.
        Average time: a few seconds.

Step 8: The file is TEXTed in as in Step 2.
        Average time: 10 minutes.

Step 9: Modifications are made to correct the
        syntax errors.
        Average time: 5 minutes.

Step 10: The file is kept as in Step 4.
         Average time: 10 minutes.

Step 11: The editor is exited.
         Average time: a second.

Step 12: The compiler is invoked as in Step 6.
         This time we are smiled upon from
         above and those magic words, "NO
         ERRORS, NO WARNINGS" appear.
         Average time: 15 minutes.

Step 13: The USL is now PREPed using the
         segmenter.
         Average time: 5 minutes.

Step 14: The COBOL program is now invoked
         so that the new additions and
         modifications can be tested and new
         bugs searched for.
         Average time: 15 minutes.

This completes one cycle; the programmer is ready to begin again at Step 1. The total elapsed time is about two hours.

Now, let's look at the cycle again once QEDIT has been installed. QEDIT is an editor just like EDIT/3000 is, but there are three main differences that cause changes in the elapsed time for one cycle:

* There is no need to TEXT and KEEP source files. Changes can be
  made directly to the source file which can then be compiled
  directly. Of course, paranoid people can always KEEP a backup
  copy at will.

* The editing commands are more powerful and easier to use.
  Furthermore, in many cases, they perform their functions in a
  fraction of the time taken by their EDIT/3000 counterparts.

* Compiles can be invoked from within QEDIT, eliminating the need
  to exit and re-enter the editor around the compilation.

The typical cycle is now as follows:

Step Q1: The editor, QEDIT, is invoked.
         Average time: a few seconds.

Step Q2: The COBOL source file is OPENed.
         Average time: a second.

Step Q3: Modifications are made to fix bugs,
         add new logic, add comments,
         resequence the file, etc.
         Average time: 15 minutes.

Step Q4: The source file is compiled using the
         COBOL compiler. Our programmer is
         still human, hence some syntax errors
         are noted.
         Average time: 15 minutes.

Step Q5: Modifications are made to correct the
         syntax errors.
         Average time: 5 minutes.

Step Q6: The compiler is once again invoked.
         This time we get a 'clean' compile.
         Average time: 15 minutes.

Step Q7: The editor is exited.
         Average time: a second.

Step Q8: The USL is now PREPed using the
         segmenter.
         Average time: 5 minutes.

Step Q9: The COBOL program is now invoked
         so that the new additions and
         modifications can be tested and
         new bugs searched for.
         Average time: 15 minutes.

This time, we finished in about one hour and ten minutes; a reduction of 41%.

In reality though, our typical programmer spends only half of the day in the development cycle, the other half spent working at a desk, planning and coding the next block of logic. This gives us a net increase in programmer productivity of about 20%. While it is true that fewer computer resources and significantly less disc space is used when QEDIT is utilized, with the relative cost of human vs. computer resources being what they are, the increase in programmer productivity dwarfs the other advantages.