**COAL LAB HOMEWORK**

Uses of assembly language include coding device drivers, real-time systems, low-level embedded systems, boot codes, reverse engineering and more.

Assembly language is the gateway to optimization in speed, thereby offering great efficiency and performance.

The following are some of the reasons why learning assembly language is still important and relevant.

**Complete control over a system’s resources**

By using assembly language, you can write code to access the registers and even deal with memory addresses directly for retrieving values and pointers. So, if you are writing a program that has a great [algorithm](https://www.techopedia.com/definition/3739/algorithm), you are going to benefit greatly.

**Understanding processor and memory function**

If you are writing a program that is meant to be a compiler or a device driver, then a complete understanding of the processor’s function is a big plus. So, in this case the best option is to write some code in assembly language and see how the processor and the memory work.

**Direct access to hardware**

Assembly language is the only language that speaks to the computer/machine directly. It is the language that a certain CPU recognizes and different CPUs recognize different types of them.

**Assembly language is transparent**

When compared to high-level languages, which are mostly in the form of abstract data types, assembly language is bare and transparent.

**Less Complex**

It also makes it easier for [debugging](https://www.techopedia.com/definition/16373/debugging), as it is less complex. Overall, there is less overhead as compared to high-level languages.