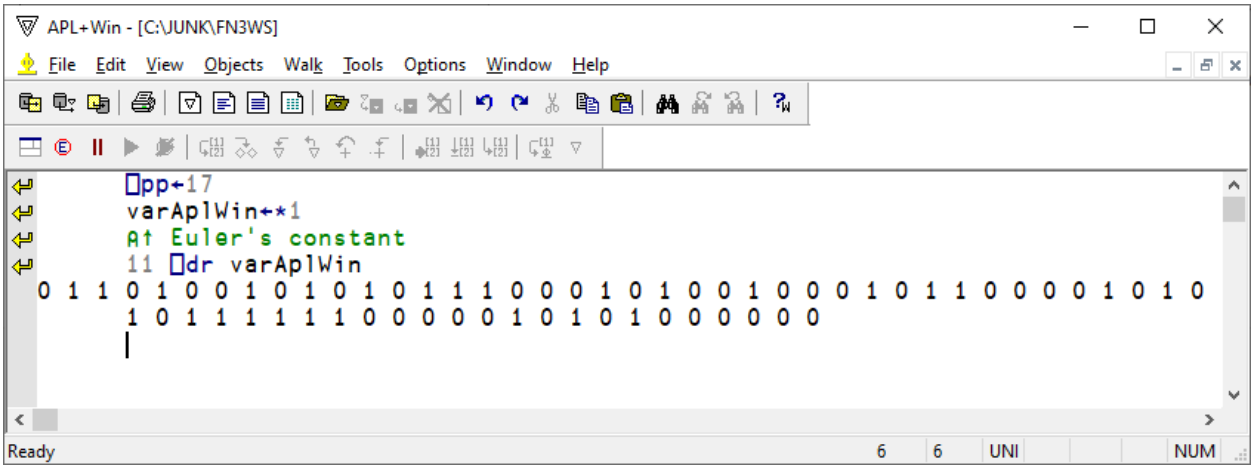
APL64 Numerical Computations and Numeric Formatting

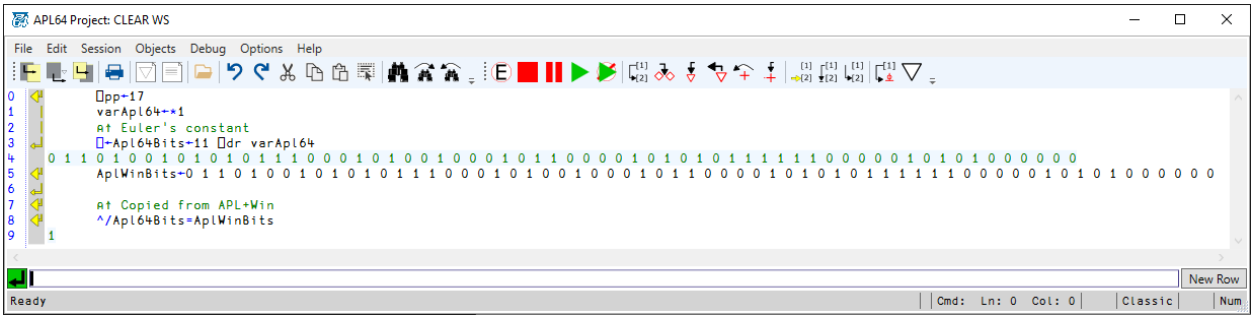
APL64 is designed for a cross-platform x64 operating system environment. There are differences between that environment and the environment of APL+Win which may also be influenced by the APL64 programmer's workstation hardware.

Checking the origin of apparent differences in numerical computations is easy in APL64 and APL+Win:

- Set ⎕PP to 17 in APL64 and APL+Win
- Assign the value in question to a variable in APL64 and APL+Win, e.g. varApl64 and varAplWIn
- Display the base-2 bit vectors equivalent to the values using the APL ⎕DR system function
- Copy the AplWinBits value to the clipboard
- Paste the AplWinBits value into APL64
- Perform a comparison of the bit vectors
- If the bit vectors match, the difference is a cosmetic formatting issue. The operating-system-level formatting mechanisms are different in APL64 and APL+Win
- If the bit vectors do not match, the difference is in the operating system and hardware environment provided by the APL64 programmer. The APL+Win system used a virtual 8087 processor for many numerical computations, whereas the APL64 system uses 64bit operating system mechanisms.

Example:





In this case any value difference is a cosmetic formatting issue.