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| --- | --- | --- | --- |
|  | Function | Provenance | The fine print |
| 0 | Exit |  |  |
| 1 | Random-Raster | New Python code | Demonstration that the WW Vector display is sensitive to refresh rate! |
| 2 | Tic-Tac-Toe For Two Game | New Python code | Illustrates use of multiple displays. Requires two analog scopes |
| 3 | Tic-Tac-Toe against WW | New WW code | Interactive game played with Light Gun and CRT display.  ‘X’ starts playing by clicking on a cell.  Lower left hot-spot resets the game. |
| 4 | R-196 Bounce | WW Report R-196 | ~30 lines of code from Whirlwind Programmer Training Manual R-196, with a couple of mistakes fixed. |
| 5 | Bounce with Hole | WW tape | Complete Bounce program with Hole-in-the-Floor and automatic trajectory adjustment. Precursor to a ‘game’ version. |
| 6 | Mad Game | WW tape | Good example of simple Light-Gun/CRT input/output. No known application. |
| 7 | Blackjack Game | WW tape | Play Blackjack against Whirlwind with Light Gun and CRT. No documents found; probably an unauthorized hack |
| 10 | CRT Test Pattern | WW tape | Simple pattern generator to check analog gain settings in the CRT drivers |
| 11 | Vibrating String fixed ends | WW tape | DCL-090 “Vibrations in a Length of String”  LMIR - No. of points (p); default = 0.00400  RMIR - Magnitude of string displacement (m); default = 0.40000  FF #2 - Scope amplitude adjustment; default = 0.00010  FF #3 - Elasticity factor; default = 0.70000 |
| 12 | Vibrating String open end | WW tape |
| 13 | Nim | WW tape - DCL-113 – “Generalized NIM”  Remove up to N pieces from each of M groups. Taking the last piece wins.  Set N in FF2 (default = 2 tokens), M in FF3 (default = 1 group)  “Removing pieces from the groups is done by setting the  desired number up to N in Right MIR and the address in Left MIR using the rightmost column where the groups are 0-7 for A-H consecutively. Pressing Upper Activate button will read in the above amount and display the new numbers in the groups. M removals have to be made in each move; if less than M are desired, 0 has to be removed until M removals are completed. After M removals have been done, Upper Activate button has to be pressed for computer move.” | |
| 14 | Number Display | WW tape | Displays incrementing number pattern in Binary, Decimal, Octal, Hex (“Sexadecimal”) with dot-matrix character generator |
| 15 | Air Defense | WW M-1343 code | David Isreal’s Air Intercept Demonstration from 1951.  Select aircraft: Switch-D: Down=Target, Up=Interceptor |
| 16 | Vector Clock | New WW code | Click the center point to toggle between minimal and a more detailed (and flickery) rendering |
| 17 | Lorenz Attractor | New WW Code | New code, but using the actual Whirlwind floating-point library. (Lorenz Attractor was discovered in 1963, after WW at MIT. This code thanks to Angelo Papenhoff!) |
|  |  |  |  |

Add 100 for Analog Scope

Whirlwind Demo Menu Secret Decoder Chart; Apr 11, 2025

See [https://github.com/gfedorkow/Whirlwind-  
Instruction-Simulator](https://github.com/gfedorkow/Whirlwind-Instruction-Simulator) for code samples

