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The 64K Challenge

(With apologies to Allen Huffman)

by M. David Johnson

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Abstract

An annual 64K Challenge is proposed to recognize CoCo programs which are intended to run on a 64K Color Computer 2, and intended to efficiently, effectively, and artistically utilize its entire 96K (64K of RAM + 32K of ROM) to the fullest and best possible extent.

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Introduction

In accordance with my CoCo philosophy (See Appendix A), I hereby propose that the Glenside Color Computer Club issue a 64K Challenge each year at each annual Last CoCoFest, beginning with the 2022 annual Last CoCoFest.

The 64K Challenge would consist of participants submitting programs intended to run on a 64K Color Computer 2, and intended to efficiently, effectively, and artistically utilize its entire 96K (64K of RAM + 32K of ROM) to the fullest and best possible extent.

Participants could submit their programs at any time up to 60 days before CoCoFest.

The Challenge would include a $50.00 prize for the Best Program, and a $50.00 prize for the Best Program Under 18 (i.e. the best program submitted by a programmer who was under the age of 18 on the date of its submittal). It would be possible for both prizes to be won by the same programmer for the same program.

The judges could also decide not to award a given prize in any given year if they determined that none of the submissions warranted such a prize. Any prize money not awarded would be retained for use in following years.

Participants need not be present to win.

Upon a suitable agreement regarding the administration of such a Challenge, I would plan to contribute up to $150.00 per year to the Club to fund the Challenge (i.e. $100.00 for prizes + $50.00 towards expenses).

Concept Details

Hereinafter the term "Club" shall be construed to mean the Glenside Color Computer Club; the term "Board" shall be construed to mean the Club's Board of Directors; and the term "Judges" shall be construed to mean the panel of Judges appointed by the Board to oversee the 64K Challenge.

This paper is a general outline of the proposed 64K Challenge and is intended to be the basis for further discussion if the Club should decide to proceed with such a Challenge.

Concept

The General Rules of the Challenge shall be as determined by the Board, and those General Rules shall not vary from year-to-year, except as the Board may determine. This paper, in its entirety, constitutes a suggested basis for such a set of General Rules. The set of General Rules shall be published and maintained on the Club's website.

Those General Rules shall include the $50.00 prize for the Best Program, and the $50.00 prize for the Best Program Under 18 (i.e. the best program submitted by a programmer who was under the age of 18 on the date of its submittal)

Judges

By no later than December 1st of each year, beginning in 2021, the Club's Board of Directors shall select and appoint up to three members of the Club to serve as a panel of judges and administrators for the following year's 64K Challenge. All decisions concerning The 64K Challenge shall be made by majority vote of the Judges. In the event of a tie vote, the Club President shall cast the deciding vote. All decisions of the Judges shall be final.

By no later than February 1st of each year, the Judges shall finalize the Special and Particular Rules and Guidelines for that year's 64K Challenge, and shall publish those Rules and Guidelines on the Club's website. Determinations of such things as additional monetary prizes, non-monetary prizes, special competition categories, judging considerations, etc. might be subjects of such Rules and Guidelines.

Participants

Anyone, whether a member of the Club or not, may submit up to four entries for The 64K Challenge in any given year. There shall be no charge to the participant for making any submission.

Participants may submit their programs at any time up to 60 days before the published starting date for that year's CoCoFest. To avoid confusion, it might be best to specifically state the deadline for submissions, e.g. by 11:59 pm CDT on August 1st.

Submissions may be made in person; via. U. S. Mail, UPS, FedEx, or any other carrier; or by email. Each submission shall consist primarily of one .DSK file. If the submission is via email, it shall be sent as an attachment to the email. Otherwise, it shall be provided on a USB Thumb Drive, which shall be returned to the participant at the end of that year's CoCoFest..

The Judges, the President of the Club, and M. David Johnson may participate if they so choose, but none of their entries will be eligible for any prizes; monetary or otherwise.

Submissions

Each submission shall consist of one program, along with any additional code and/or data files to be accessed by that program; all contained within one 35-track, single-sided, double density (SSDD) floppy diskette equivalent .DSK file (along with such attachments as are required or allowed below).

Programs may be either BASIC Programs or Assembly Language Programs and must run under RS-DOS.

BASIC Programs shall be initiated by the LOAD"FILENAME.BAS":RUN command sequence, and Assembly Language Programs shall be initiated by the LOADM"FILENAME.BIN": EXEC command sequence.

In either case, full source code must be included, either in the program's .DSK file, or in a second .DSK file devoted solely to source code. Full source code shall also be provided for any machine language snippets intended to be loaded and run from within the main program itself, including any machine code to be poked into memory from within a BASIC Program.

The submission's .DSK file shall be accompanied by a separate entry form which will provide information about the program and its author, including a description of what the program is supposed to do. The entry form shall be as designed and approved by the Judges each year.

Each submission will be tested on a physical 64K CoCo 2 from standard 35-track SSDD floppy diskette Drive Zero, or equivalent (e.g. a CoCo SDC, etc). The program will also be tested within the VCC 2.1.0d Emulator (or such later version as the Judges may specify).

Judging and Prizes

By no later than fifteen days before the opening of CoCoFest, the Judges shall publish their findings on the Club website. Such findings shall include placement (1st Place, 2nd Place, etc.) of each submission; and any prizes, monetary or otherwise, attached thereto.

All prizes to be awarded will be presented at CoCoFest. Participants need not be present to win. Prizes to be awarded to any participants who are not present, will be mailed to them after the close of CoCoFest.

All decisions of the Judges are final.

Appendix A: My CoCo Philosophy

The CoCo community enjoys a great diversity of interests.

Some choose to concentrate on hardware innovations and modifications such as interfacing with VGA and HDMI monitors, SD Card data storage, and 104-key keyboards. This interest is at least partly born of necessity, since composite monitors, floppy diskettes, and CoCo spare parts are no longer manufactured and are in increasingly short supply.

Others concentrate on expanding the software horizons of the CoCo 3, using NitrOS-9 and other operating systems to make the multitasking CoCo behave ever closer to modern Windows, Mac, and Linux machines.

Still others are devoted to emulating the CoCo on other platforms by developing emulators such as VCC, OVCC, MAME, and XRoar.

And some just love retro gaming.

My personal interest is twofold:

> 1. To see VCC increasingly used as a learning tool for budding software developers.

> 2. To see just how much I can cram into a 64K CoCo 2.

First, VCC: Today's Grade School, Junior High, and High School students have a wealth of available learning tools. Micro-bits, Arduinos, and Raspberry Pi supermicro devices provide highly affordable entry-level introductions to computer programming and interfacing. Maker-Spaces and Innovation Centers in our schools and libraries help foster growth and experience.

But these devices do have limitations. Even these simple(?) computers can have rather steep learning curves, and their low initial cost can quickly expand as new peripherals and experimental equipment and supplies are added.

VCC is free, and can be used on any Windows computer: just download it, install it, and it runs. If you don't own a Windows computer, your school, library, or a friend probably does. The included BASIC language is easy to learn and can readily serve as a stepping-stone towards more complex programming languages. (And, no, learning structured programming does not require a language that enforces structure. In fact, I think learning to structure your programs is actually more effective when you do so on your own.)

I prefer VCC to the other emulators for these purposes because its setup is trivial: Again, just download it, install it, and it runs. OVCC, MAME, and XRoar have their advantages, but ease of setup is not one of them. Even with their available Windows binary packages, they require pre-installation of other bits and pieces of software before they can be downloaded, installed, and run. This may not be a major problem for a reasonably adept aficionado, but it forms a significant barrier for the newbie. And, it's the newbie whom we're trying to reach, interest, and encourage here; the newbie who may not yet recognize even the tiniest awakening of interest in things computational.

But, for these purposes, VCC has one glaring weakness: its instruction manual is woefully terse. I would like to see VCC bundled with a selection of tutorials, manuals, and examples suited to guiding even the most newbie of newbies into the wonders of computing.

Second, The Stuffed CoCo: I'm simply fascinated by the challenge of seeing how much functional capability I can sandwich into the nooks and crannies of the 64K space. Whether it's working in the available RAM left by the 32K ROM and the dedicated RAM that supports that ROM, or whether it's jumping right into ALLRAM mode and just filling the entire 64K to near-overflowing; it's an investigative gauntlet which goes right to the heart of my enchantment with puzzles in general.

It's great fun!

M.D.J. 2021/08/29