LIBRARY OF PET SUBROUTINES pdf

The situation at the beginning of the s[edit] Commodore 64 Atari XL From the late s to the late s home computers based on 8 bit processors were very popular. The flat learning curve of BASIC, which had been designed with newcomers to programming in mind, and the instant availability of the language on all these computers led to many users writing and sharing their own programs. A problem was that sharing programs and data across computers by different manufacturers was difficult because the various BASIC dialects were totally incompatible in some areas. Another difficulty was the fact that while these computers were similar, they still differed in key hardware aspects like screen resolution, available color palette or audio abilities. Finally, the data formats used for storing data on cassette were incompatible as well. Because programs and data were stored as audio on compact cassettes, it was possible to record such a broadcast on tape and load it into the computer later. However, because of the problems mentioned earlier, the program had to be adapted for nearly all popular types of computers and broadcast multiple times as well. So, the additional broadcasting of different versions of the same programs was a great inconvenience. In the executives at NOS decided to develop a unified data format. An application that was specific for each computer model, called Bascoder, managed the recall and storage of programs and data in this unified format from tape. The format, which was very well-protected against interference, could be read and written by all popular home computer hardware. The robustness of the format also made broadcasting via mediumwave radio possible, which increased the range and in turn the number of potential users. For example, data broadcast by the Dutch radio station Hilversum could be received in large parts of the German Democratic Republic. Limiting the programs to only use instructions common across all dialects meant big limitations in terms of functionality, for example completely refraining from using graphics and sound and only uncomfortable methods to input data using the keyboard and to control character output on the screen. Bascoders using this standard did not only contain routines for input and output of data to tape. Necessary arguments were passed to the Bascoder by using special predefined variables that were reserved for use by the Bascoder. The standard contained a number of additional rules that were made necessary by the limitations of some computer models. On a KC series computer, a line of code could not be longer than 60 characters. The resulting program was not platform independent any longer, but due to the higher data density of most native formats it could be loaded much faster than the same program in BASICODE format. Also, because it was not necessary to load the complete Bascoder to run the program, more RAM remained available at run time. Additionally, advanced users were able to write their own Bascoder for their system of choice, since the language standard and data format were open and well-documented. The most important additions were routines for simple monochrome graphics, reading and writing data from within programs and sound output. Also, a book was published which included a vinyl record with Bascoders for all computers common in the GDR. Additionally, because of the much fewer common architectures in the and bit era, the main reason for the development and use of BASICODE became moot. As the hardware and software of the new systems became more and more complex, most users became unable or disinclined to write programs. Historical significance[edit] BASICODE was an early attempt at creating a standard for the exchange of programs and data across mutually incompatible home computer architectures. These computers were sold by multiple companies and directly competed with other popular home computers. As a result, the implementation of BASICODE was exclusively dependent on additional software and thus was not limited to computers by specific manufacturers. There was a Bascoder for nearly every home computer sold during this era. Pascal was a much more consistent language across systems, but compilers were available only for very few types of home computers. The underlying concept of BASICODE, which is the definition of a language standard for platform-independent software development and the implementation of said standard as system-specific runtimes Bascoder was later revisited in the programming language Java , in the form of the operating system -specific Java Virtual Machines which execute Java programs. So, when recording programs, the commands are not read and written in the form of single byte

units tokens , but character by character. A 0D character decimal 13 marks the end of a line during transmission. Data files created by programs are able to use all characters as data and must contain no control characters. They are read and written in blocks of bytes. Each byte is transmitted in the sequence "1 start bit - 8 data bits - 2 stop bits". The data bits are little-endian ordered. The resulting redundancy is intended for maximising compatibility with different computers. Bit 7 is always 0, which is especially useful when transmitting ASCII characters, because these always have bit 7 set to 0. The theoretical data rate of this format is bits per second. Considering the transmission of three additional bits per data byte and the pauses before and after the start bit, this results in a usable data rate of bytes per second, and about 6 kilobytes per minute. Decoding Audio Cassettes[edit] On a modern computer, Basicode audio cassettes can be decoded using minimodem , a freely available software modem. If the cassette has been converted into a wav file called basicode.

2: BASICODE - Wikipedia

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

Commodore should be congratulated for making two new books available. These books supply some much needed, useful and correct documentation. The text clearly shows the relationship between technical and programming information. In terms of difficulty it falls between books that only teach Basic and books that describe the engineering aspects of the Pet. The text is written clearly and has a nice rhythm to it - just as you begin to come to grips with some hardware concept, the author gives an illustration of its use. The book begins with a summary of the system hardware: This is followed by a description of the CPU. The book does not go into great detail on the basics of machine code programming, but it does show how to break up a task into steps much smaller than we do in BASIC, shows a few examples and give hints for debugging. The next chapter describes the operating system, again merging the hardware with software. It contains an accurate description of array storage, the first text I have seen to do so. It is full of hints on how to do unusual things on the Pet. And finally, the two ports. Every register and its function is described and tied to the previous sections in the book. It is a gold mine of interfacing examples. Enough illustrations are given to help you understand how the Pet can be used in situations other than just grinding data. A short machine code program for music making is included. The description of how cassette units function looks good. The computer user must be alert to confusion in designating operating states, such as: For example, there is a routine that allows the Pet to monitor an outside event, such as a mouse breaking a photo-electric cell beam, while the Pet is running another program. I had to make a minor change in coding, since I wanted to count how many times the line was grounded rather than the other way around. Index, circuit diagrams, list of machine code instructions and a short errata sheet make information quite easy to look up. All in one place!. The printing has been done by use of a word processor, and the output is of type quality. The book is tightly written with little wasted space. I have a few minor complaints: I would have liked to see more circuit diagrams that show how to interface the user port for OUTPUT to devices that consume more power than the Pet can provide. Several routines have been typeset rather than taken directly from the Pet printer. I found one on page In chapter 3 several section subtitles are missing and there are few typographical errors. But you should have no trouble understanding what the author is saying. Commodore, Butler and Butterfield are cited as information sources, but other sources are not identified. Among them are input edit, trace, repeating key, sequential and random access systems, sorting by various methods, including a machine code sort, graphics in high resolution, and plotting from point to point, to cite just a few. All routines are short, thus you can design your system for whatever application you want. All are written with a complete explanation of their purpose and methods of calling from the main program. There is a program for appending a series of routines from a disk to form a larger program. The disk allocation is about 9K so that the entire package can be saved in the same place. All program listings are copies of printer output and therefore free from typesetting errors. The listings are very readeable, the code is not tight and comments are provided. This allows modifications to be made without much trouble. There is a thumb index on the side of the page which helps you locate any listing in a jiffy. I would like to recommend that in the routines that change the pointer to top of the Pet you perform the change in direct mode. There is always a danger that the machine code may get wiped out by strings. CLR will guarantee the safety of the code. They are well prepared, fun to use, and will help in better program development. It is my understanding that these subroutines will be provided on disks or cassette tapes about 50 minutes total length without extra cost to those who purchase both books.

3: Commodore PET (Documents)

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6: Nick Hampshire | Open Library

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9: Book Reviews: The Pet Revealed and Library of Pet Subroutines

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