

DataGen

DataGen is a data generation tool designed to generate large volume data under the Windows environment for system testing and database checking. DataGen follows the relational database concept by allowing the user to specify the relationship among not only the data items within one table but different tables so the generated data reflects the real-world situation -- thus, an ideal tool for testing an application system's accuracy as well as checking a database's capacity and capability for handling voluminous data records.

The data generation process under DataGen is based on the data specification: *a set of data constraints*. Generated data is independent of the programming language and operating system under which the application system is developed and executed. Therefore, DataGen does not require any knowledge of the internal program logic or statement paths for generating data. However, generated data can be used to test an application system, as simulated data to demonstrate a system's functionalities and capabilities, and as collected data records to verify or benchmark a database's capacity and performance.

DataGen Characteristics

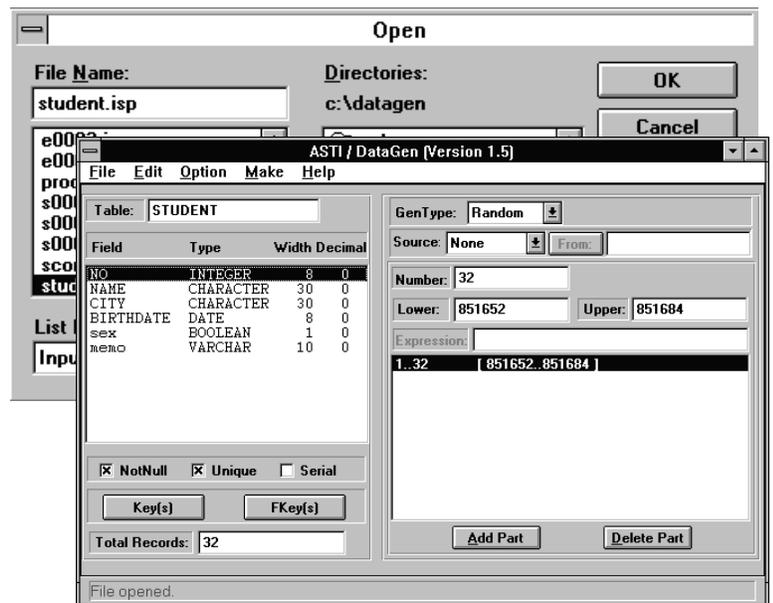
-Specification Based Data Generation -- The source for data generation is purely based on the software specifications. Based on the source and various ways of defining data specifications, DataGen can be used by a wide user spectrum in supporting numerous application needs.

-Real-World Scenario Data Generation -- DataGen requires the user to specify data attributes and constraints so the generated data are meaningful and meet the user's needs. Meaningful data are essential for revealing errors in the application system and simulating true results.

-Separation of Concerns -- DataGen supports the separation of concerns principle by letting the user define the specification and the system, then generate the desired data. DataGen's simple and friendly user interface makes the data constraint specifications easy to define and the tool, easy to use. DataGen is a simple, but powerful tool.

-Language and Platform Independence -- Because the data generation process does not require any internal program logic, DataGen supports the software development and software *testing in parallel* concept. Moreover, data generated under DataGen are transparent to the development and the execution environments under which the application system will be executed.

-Multi-Linguistic Languages Support -- DataGen currently supports text data in either the English or Chinese languages, but is not limited to any specific language. DataGen can easily be extended to provide support for any language.



-DBMS Interface Support -- Data generated can be utilized by not only existing DBMS systems, but also any data-based application systems. DataGen assists the user by supporting the DBMS interface such that the generated data automatically fits into the specific DBMS format. Currently, DataGen supports the most commonly used database formats such as *.dbf* and *ASCII*, yet it leaves the door open for many other future direct DBMS interface support.

-Incorporation with Other Testing Tools -- DataGen was extracted from a CASE tool's testing facility and modified to be an independent and self-contained tool which can easily be incorporated into other testing tools to make testing tasks easier and complete.

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Benefits of Using DataGen

·Reuse Work Efforts -- DataGen allows the user to reuse the work effort at two levels: the data specification level and the data generation level. At the specification reuse level, users can either reuse an existing data specification to generate a different data file or modify an existing data specification to get a new data specification file. For data generation reuse, data generated can be saved as a data file to be used by the designer or as a system library file to be reused by other users in different applications.

·Wide User Spectrum: Testers, Developers, and End Users -- The data generation source is simple and flexible. Since the data specification is the only information needed for the data generation process: the data specification could be based on either a software system specification or an internal data structure. Data generated based on the system's external behavior specification can be used to perform system and acceptance testing while data generated based on the internal data structure can be used to perform unit testing. DataGen can be used by the developer and/or the tester to support both white box and black box testing approaches.

The only limit for specifying the data volume size for data generation is subject to the storage capacity of the PC. Since DataGen can create a very large volume of data records that are meaningful and realistic during any phase of application development, it is useful to check and/or benchmark the capacity and behavior of a database system. Thus, DataGen is for the developer, the tester, and the end-user.

·Easy to Use -- DataGen's easy and friendly user interface guides the user through the data definition and generation process without requiring programming knowledge.

·Rapid Generation of Large Volume Data -- Large volumes of data can be generated in a matter of seconds in a format which matches the user specified data format -- ready for use!

·Generate Meaningful Data -- DataGen lets the user specify data conditions so generated data are meaningful and close to the real-world data to enhance application testing.

Configuration Requirements

- IBM™ PC, PS/2 or 100% compatible 386, 486 , or higher
- MS Windows 3.1 or above
- Color monitor (EGA, VGA, 8514) or other supported monitors. Select 256 colors
- 2Mb RAM (4Mb recommended)
- Hard Disk + Floppy Drive
- Mouse supported by Windows 3.1
- DBMS support (FoxPro 2.5 or above)

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