# Objeck Programming Language

v5.0.1; June 1, 2019

## Release notes

Added support for generics and boxing.

Highlights:

1. Generic support
   1. Added support for generic programming
   2. Built generic based collections library ‘Collection.Generic’
   3. Refactored core libraries to use generic collections
2. Added boxing/unboxing support for primitive types (Bool, Byte, Char, Int and Float)
3. Bug fixes and enhancements
   1. Enhanced class documentation *(new)*
   2. Added ‘Apply’ to generic Vector class *(new)*
   3. Speed enhancements made to the compiler
   4. Fixed a bug in the ‘String->Replace()’ method
   5. Enhanced the code documentation system
4. For Windows 64-bit, code statically recompiled to resolve DLL dependencies *(new)*

Please refer to the [project website](http://www.objeck.org/) for additional information about the language. The Programmer’s Guide is located the “doc” directory. Additional examples are available on the [Rosetta Code website](http://rosettacode.org/wiki/Category:Objeck). Please submit bugs to [objeck@gmail.com, bug reports are greatly appreciated!!](mailto:objeck@gmail.com)

## Package directories

bin/ – compiler, debugger and VM

doc/ – general documentation

doc/api/ – class library documentation

doc/syntax – files to enable syntax highlighting for supported editors

examples/ – source code examples including a 2D game

examples/doc – source code for self-documentation system

examples/tiny – “tiny” language compiler and VM

lib/ – supporting language libraries

lib/native/ – native OS shared libraries

lib/sdl/ – host SDL shared libraries

## Compiling and executing programs

In order to compile programs outside of the “bin” directory the “OBJECK\_LIB\_PATH” environment variable must be set. When this variable is set all library files must be in the directory specified.

If the Windows installer is used these variables will be automatically set after the system is restarted. For Debian and Ubuntu the location of the files is fixed by the installer so no variables are needed.

To manually setting the environment paths in Windows:

1. set OBJECK\_LIB\_PATH=C:\Users\<account>\objeck-lang\lib
2. set PATH=%PATH%;C:\ Users\<account>\ objeck-lang\bin; C:\ Users\<account>\ objeck-lang\lib\sdl

To manually setting the environment paths in macOS and Linux:

1. export PATH=$PATH:/home/<account>/objeck-lang/bin
2. export OBJECK\_LIB\_PATH=/home/<account>/objeck-lang/lib

Simple compile/execute:

1. obc -src ..\examples\hello.obs -dest hello.obe

–OR-

1. obc -src 'C:\Program Files\Objeck\objeck-lang\examples\encrypt.obs' -lib encrypt.obl -dest hello.obe

2. obr hello.obe

Compile/execute for code that has library dependencies:

1. obc -src ..\examples\xml\_path.obs -lib collect.obl,xml.obl -dest xml\_path.obe

2. obr xml.obe

For OS X (10.9 or greater), you’ll need to install OpenSSL in order to use encryption APIs as well as iODBC to enable database support. Please refer to the following [link](http://mac-dev-env.patrickbougie.com/openssl) for OpenSSL directions and this [link](http://www.iodbc.org/dataspace/iodbc/wiki/iODBC/ODBCMacOSX) for about ODBC support.

## SDL Support

The 2D gaming framework is built around [SDL2](https://www.libsdl.org/download-2.0.php) (>=2.0.9). The Windows distributions contains required DLLs. Support for other platforms is below.

For Linux:

1. sudo apt install libsdl1.2debian libsdl-gfx1.2-5 libsdl-gfx1.2-dev libsdl-gfx1.2-doc libsdl-image1.2 libsdl-image1.2-dbg libsdl-image1.2-dev libsdl-mixer1.2 libsdl-mixer1.2-dbg libsdl-mixer1.2-dev libsdl-net1.2 libsdl-net1.2-dbg libsdl-net1.2-dev libsdl-sound1.2 libsdl-sound1.2-dev libsdl-ttf2.0-0 libsdl-ttf2.0-dev

For macOS:

1. Refer to this [link](http://lazyfoo.net/tutorials/SDL/01_hello_SDL/mac/index.php) for core SDL2 libraries. Ensure you download 2.0.9 or greater.
2. Other libraries for [images](https://www.libsdl.org/projects/SDL_image/), [fonts](https://www.libsdl.org/projects/SDL_ttf/) and [sound](https://www.libsdl.org/projects/SDL_mixer/) are required. These libraries may need to be resigned for example “cd /Library/Frameworks/SDL2\_mixer.framework; codesign -f -s - SDL2\_mixer”.

## Source code

The Objeck source repository is located [here](http://github.com/objeck/objeck-lang) and the source can be fetch using the following command GIT command:

* git clone <https://github.com/objeck/objeck-lang.git>

## License

* Software was developed under the [FreeBSD License](https://opensource.org/licenses/BSD-2-Clause). Supporting software licenses can be found [here](https://github.com/objeck/objeck-lang/blob/master/LICENSE).

## Known bugs and limitations

* On 32-bit Windows, the ODBC driver must be a 32-bit for [compatibility](http://stackoverflow.com/questions/1134827/how-do-i-use-a-32-bit-odbc-driver-on-64-bit-server-2008-when-the-installer-doesn).
* The XML parser class does not support DTDs or DOCTYPE tags
* By design, the regular expression class performs greedy pattern matching.
* All unit tests executed successfully but I'm sure there’s bugs. Send an [e-mail](mailto:objeck@gmail.com) I’ll get them sorted.