
an external tree visitor pattern"

Posted by [wildbill](#) on Thu, 02 Nov 2023 08:47:14 GMT

[View Forum Message](#) <> [Reply to Message](#)

Creating Gear: An interpreter written in Free Pascal using an external tree visitor pattern
Jeroen de Haan

<https://github.com/jdehaan2014/GearLanguage/tree/master/interpreter>

<https://cloud.mail.ru/public/1KND/xbMLrR7a4>

This is a no-nonsense book about creating an interpreted programming language, named "Gear", using an external visitor pattern. Why Gear? No particular reason, I just like the sound of it...

In this book I won't describe a lot of theory, as there are plenty of good books out there. As a matter of fact, I do recommend reading a few of them, such as:

- Writing Compilers and Interpreters, A software engineering approach (Ronald Mak)
- Language Implementation Patterns (Terence Parr)

Then, there are hands-on websites/blogs that describe and create an interpreter on-the-go:

- Let's build a simple interpreter (<https://ruslanspivak.com/lsbasi-part1/>) (Ruslan Spivak)
- Crafting Interpreters (<http://craftinginterpreters.com>) (Bob Nystrom)

These books/blogs use Java or Python as programming language.

The code in this book is based on the programming language Object Pascal, a modern pascal version, and the free downloadable IDE 'Lazarus'. Lazarus/Free Pascal is available for Windows, Linux, OSX, and many other Operating Systems. It's slogan is: 'Write once, compile anywhere!' The website and download links are available at: <http://www.lazarus-ide.org/index.php>. For this book I use version 2.0.4 (or later) of Lazarus and version 3.04 (or later) of Free Pascal.

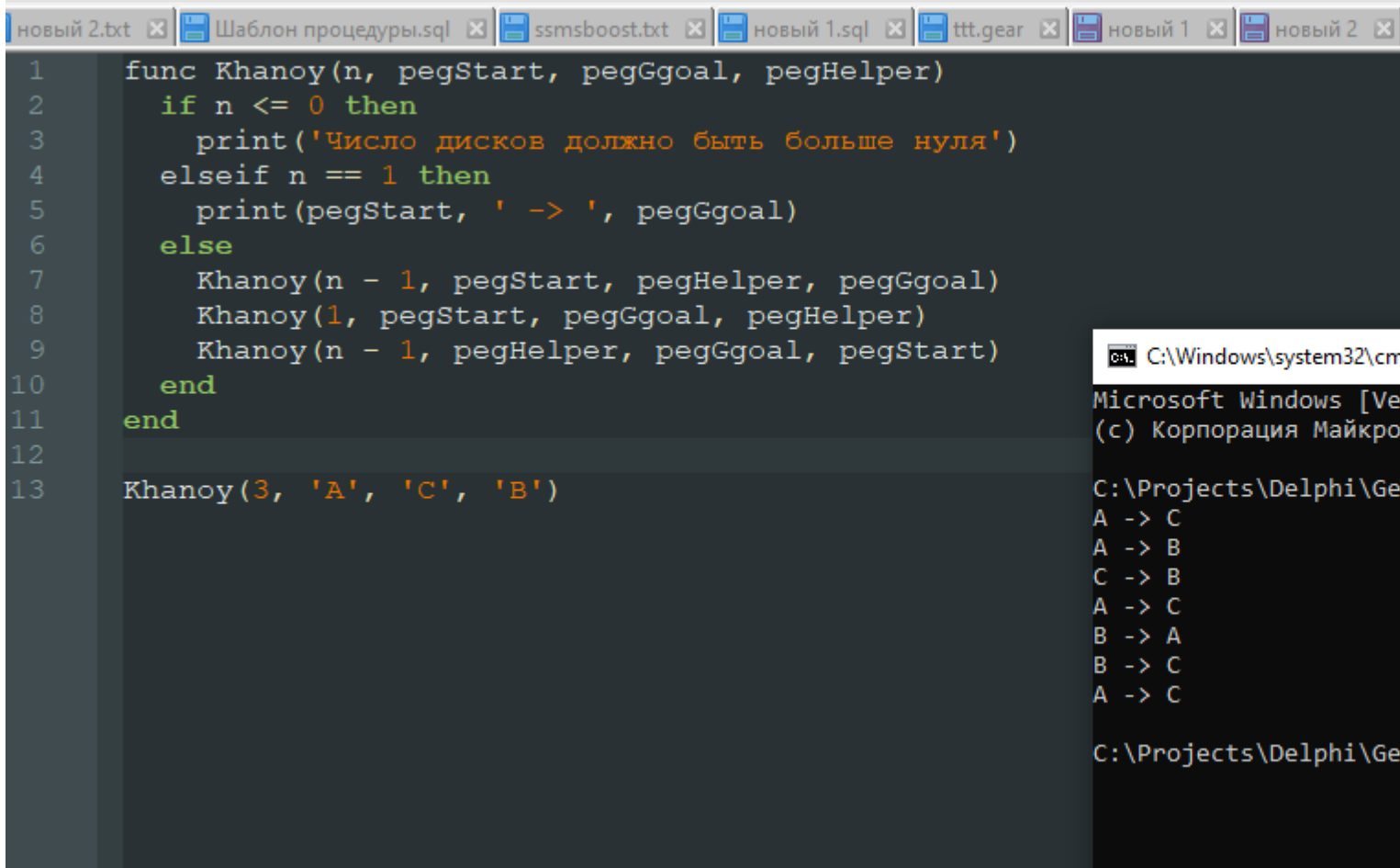
using an external tree visitor pattern"

Posted by [wildbill](#) on Thu, 02 Nov 2023 11:04:14 GMT

[View Forum Message](#) <> [Reply to Message](#)

File Attachments

1) , downloaded 1766 times



The screenshot shows a code editor window with several tabs. The active tab contains the following Delphi code:

```
1 func Khanoy(n, pegStart, pegGgoal, pegHelper)
2   if n <= 0 then
3     print('Число дисков должно быть больше нуля')
4   elseif n == 1 then
5     print(pegStart, ' -> ', pegGgoal)
6   else
7     Khanoy(n - 1, pegStart, pegHelper, pegGgoal)
8     Khanoy(1, pegStart, pegGgoal, pegHelper)
9     Khanoy(n - 1, pegHelper, pegGgoal, pegStart)
10  end
11 end
12
13 Khanoy(3, 'A', 'C', 'B')
```

On the right side of the editor, the output of the program is visible:

```
C:\Windows\system32\cmd
Microsoft Windows [Ver
(c) Корпорация Майкрософт
C:\Projects\Delphi\Ge
A -> C
A -> B
C -> B
A -> C
B -> A
B -> C
A -> C
C:\Projects\Delphi\Ge
```

using an external tree visitor pattern"

Posted by [wildbill](#) on Thu, 02 Nov 2023 11:50:30 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by <http://www.sqlru.net/index.php?t=usrinfo&id=131> on Sat, 04 Nov 2023 10:02:48 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Sat, 04 Nov 2023 12:32:10 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"
Posted by [wildbill](#) on Sat, 04 Nov 2023 12:33:54 GMT
[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"
Posted by [wildbill](#) on Sat, 04 Nov 2023 12:43:05 GMT
[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"
Posted by [wildbill](#) on Sat, 04 Nov 2023 12:52:49 GMT
[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"
Posted by [wildbill](#) on Sat, 04 Nov 2023 13:12:50 GMT
[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"
Posted by [SD](#) on Sat, 04 Nov 2023 22:46:33 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by <http://www.sqlru.net/index.php?t=usrinfo&id=131> on Sun, 05 Nov 2023 08:32:54 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Sun, 05 Nov 2023 12:12:06 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"
Posted by [wildbill](#) on Sun, 05 Nov 2023 12:14:57 GMT
[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Sun, 05 Nov 2023 12:21:46 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Sun, 05 Nov 2023 12:42:41 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by <http://www.sqlru.net/index.php?t=usrinfo&id=131> on Mon, 06 Nov 2023 08:11:03 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 09:34:27 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 09:45:37 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 09:50:43 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by <http://www.sqlru.net/index.php?t=usrinfo&id=131> on Mon, 06 Nov 2023 09:52:00 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 09:55:11 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 09:58:09 GMT

[View Forum Message](#) <> [Reply to Message](#)

Crafting interpreters.

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 12:32:31 GMT

[View Forum Message](#) <> [Reply to Message](#)

```
private boolean isDigit(char c) {  
    return c >= '0' && c <= '9';  
}
```

Underscore = ['_'];

```
LoCaseLetter = ['a'..'z'];
UpCaseLetter = ['A'..'Z'];
Letters      = UpCaseLetter + LoCaseLetter;
AlphaChars  = UpCaseLetter + LoCaseLetter + Underscore;
NumberChars = ['0'..'9'];
```

using an external tree visitor pattern"

Posted by [SD](#) on Mon, 06 Nov 2023 12:42:33 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 12:48:12 GMT

[View Forum Message](#) <> [Reply to Message](#)

Crafting interpreters.

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 12:52:11 GMT

[View Forum Message](#) <> [Reply to Message](#)

```
private boolean isAlpha(char c) {
    return (c >= 'a' && c <= 'z') ||
```

```
(c >= 'A' && c <= 'Z') ||  
    c == '_';  
}  
  
private boolean isAlphaNumeric(char c) {  
    return isAlpha(c) || isDigit(c);  
}
```

using an external tree visitor pattern"

Posted by <http://www.sqlru.net/index.php?t=usrinfo&id=131> on Mon, 06 Nov 2023
14:44:17 GMT

[View Forum Message](#) <> [Reply to Message](#)

```
private boolean isDigit(char c) {  
    return c >= '0' && c <= '9';  
}
```

```
Underscore    = ['_'];  
LoCaseLetter  = ['a'..'z'];  
UpCaseLetter  = ['A'..'Z'];  
Letters       = UpCaseLetter + LoCaseLetter;  
AlphaChars    = UpCaseLetter + LoCaseLetter + Underscore;  
NumberChars   = ['0'..'9'];
```

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 14:51:05 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by <http://www.sqlru.net/index.php?t=usrinfo&id=131> on Mon, 06 Nov 2023 16:30:28 GMT

[View Forum Message](#) <> [Reply to Message](#)

?

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 16:44:59 GMT

[View Forum Message](#) <> [Reply to Message](#)

?

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 16:46:33 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 16:49:42 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 17:03:17 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 17:06:08 GMT

[View Forum Message](#) <> [Reply to Message](#)

False

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 17:07:27 GMT

[View Forum Message](#) <> [Reply to Message](#)

True

using an external tree visitor pattern"

Posted by [wildbill](#) on Mon, 06 Nov 2023 17:12:07 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Tue, 07 Nov 2023 06:00:15 GMT

[View Forum Message](#) <> [Reply to Message](#)

By the end of the book you'll be an Object Pascal guru and have some knowledge of Lazarus.

using an external tree visitor pattern"

Posted by on Tue, 07 Nov 2023 08:50:39 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Tue, 07 Nov 2023 09:13:44 GMT

[View Forum Message](#) <> [Reply to Message](#)

using an external tree visitor pattern"

Posted by [wildbill](#) on Tue, 07 Nov 2023 09:15:19 GMT

[View Forum Message](#) <> [Reply to Message](#)

<https://delphi-books.com/en/Writing-an-Interpreter-in-Object-Pascal-Part-1-The-Runtime-System.html>
