Getting Started With Picat (Windows Users)

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Install Picat

1. Download the zip archive file for Windows from: `http://picat-lang.org`.
2. Extract the files of the zip archive to a directory, say `c:\`. The file named `picat.exe` is the executable of the Picat system.
3. For convenience, add the directory that contains `picat.exe` to the environment variable `PATH` so that you can start Picat from any working directory. Please refer to the following Web page for instructions for updating environment variables.

   `http://www.itechtalk.com/thread3595.html`

Start and Quit Picat

1. Open an OS terminal. This can be done by selecting `Start->Run` and typing `cmd` or selecting

   `Start->Programs->Accessories->Command Prompt`.

2. Change the working directory. In the following, the working directory is assumed to be `c:\Picat\work\`. The command DOS `mkdir` can be used to create directories.
3. Type `picat` to start the system. If Windows does not recognize the command, then you need to edit the environment variable `PATH` or type the full path of the executable `picat.exe`. Once Picat is started, the system shows the prompt `Picat>` and is ready to accept queries.
4. Type `help` to see the help information.
5. Type `halt` or `ctrl-d` (control-d) to exit the system.

```
c:\Picat\work>picat
Picat 0.1, (C) picat-lang.org, 2013-2014.
Picat> println("Hello World!")
Hello World!

yes

Picat> X = 1+2
X = 3
yes

Picat> halt
```

Load and Run Programs

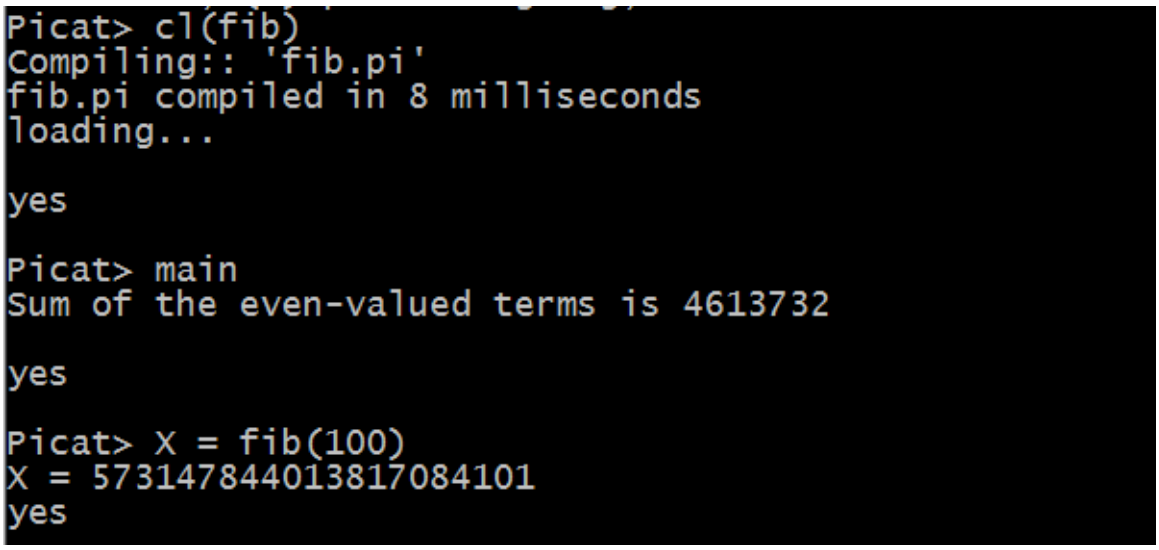
For the sake of demonstration we'll create a Picat function to the sum of the even-valued terms of the Fibonacci sequence whose values do not exceed four million.

```
main =>
    S = 0,
    I = 1,
    F = fib(I),
    while (F <= 4000000)
        if (F mod 2 == 0) then
            S := S+F
        end,
        I := I+1,
        F := fib(I)
    end,
    writef("Sum of the even-valued terms is %w%n",S).

main([A1]) =>
    writef("fib(%s)=%w%n",A1,A1.to_integer().fib()).

table
fib(1) = 1.
fib(2) = 2.
fib(N)=fib(N-1)+fib(N-2).
```

1. Create a file named `fib.pi` in the directory `c:\Picat\work\`.
2. Start Picat.
3. Compile and load the file using `cl(fib)`.
4. Type `main` to run the program.
5. You can also call the function `fib` by typing a query such as `X=fib(100)`.



Debug

1. Start Picat.
2. Enable debug mode with `debug`.
3. Compile and run the file using `cl(fib)`.
4. Type `main` to run the program.
5. At the entrance and exit of each call, the debugger displays the call and waits for a command. For the available debugging commands, type the question mark `?`.
6. Use the command `spy fib` to set a spy point on the `fib` function.

Note that only programs compiled in debug mode can be traced or spied on.

```
Picat> debug
Note: you need to recompile programs in debug mode for

yes

{Trace mode}
Picat> cl(fib)
Compiling:: 'fib.pi'
fib.pi compiled in 6 milliseconds
loading...

yes

{Trace mode}
Picat> main
   Call: (1) main ?
   Call: (2) _6df0=0 ?
   Exit: (2) 0=0 ?
   Call: (3) _7100=1 ?
   Exit: (3) 1=1 ?
   Call: (4) fib(1) ?
   Call: (5) _7410=1 ?
   Exit: (5) 1=1 ?
   Exit: (4) fib(1) = 1 ?n
Sum of the even-valued terms is 4613732
```

```
Picat> spy fib
Spy point set on fib.

yes

{Spy mode}
Picat> main
   Call: (4) fib(1) ?1
   Exit: (4) fib(1) = 1 ?1
   Call: (8) fib(2) ?1
   Exit: (8) fib(2) = 2 ?n
Sum of the even-valued terms is 4613732
```

Run Programs Directly

1. Type the DOS command `picat fib`. The Picat system will execute the `main/0` predicate defined in `fib.pi`.

2. Type the DOS command `picat fib 100`. The Picat system will execute the `main/1` predicate, which calls the `fib` function.

```
c:\Picat\work>picat fib
Sum of the even-valued terms is 4613732

c:\Picat\work>picat fib 100
fib(100)=573147844013817084101
```

If the command line contains arguments after the file name, then the Picat system calls `main/1`, passing all the arguments after the file name to the predicate as a list of strings.