

dotdraw

April 4, 2023

This file is part of CasADi.

CasADi -- A symbolic framework for dynamic optimization.
Copyright (C) 2010-2023 Joel Andersson, Joris Gillis, Moritz Diehl,
KU Leuven. All rights reserved.
Copyright (C) 2011-2014 Greg Horn

CasADi is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 3 of the License, or (at your option) any later version.

CasADi is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with CasADi; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

```
[1]: from casadi import *  
     from casadi.tools import *
```

An SX graph

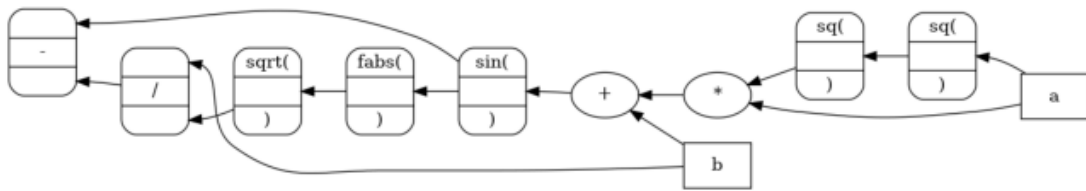
```
[2]: a = SX.sym("a")  
     b = SX.sym("b")
```

```
[3]: c = sin(a**5 + b)
```

```
[4]: c = c - b/ sqrt(fabs(c))  
     print(c)
```

```
@1=sin(((a*sq(sq(a)))+b)), (@1-(b/sqrt(fabs(@1))))
```

```
[5]: dotdraw(c)
```

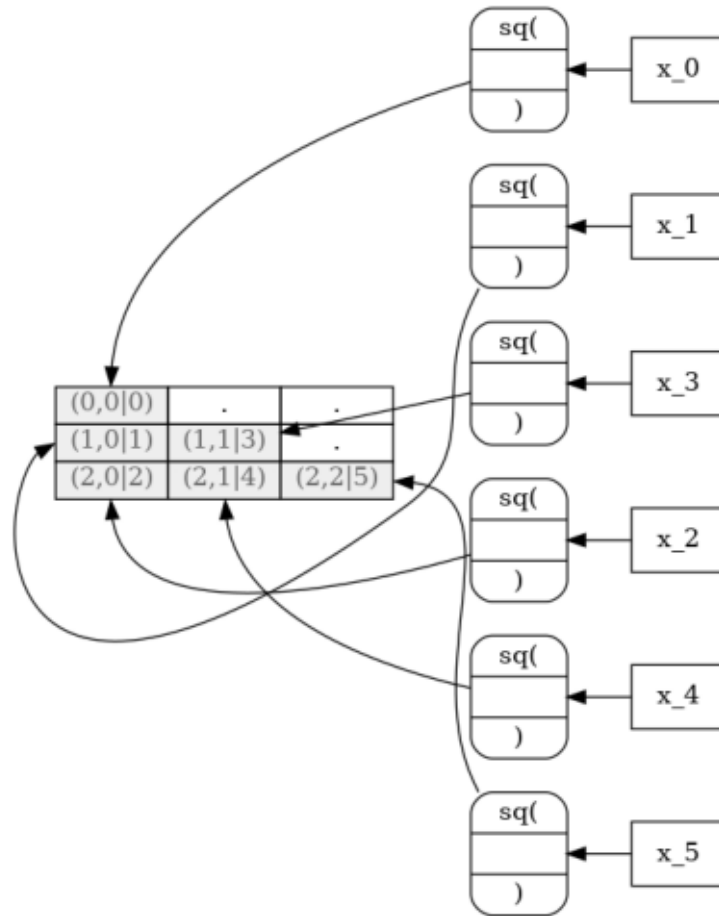


An SX

```
[6]: dotdraw(SX.sym("x",Sparsity.lower(3)))
```

x_0	.	.
x_1	x_3	.
x_2	x_4	x_5

```
[7]: dotdraw(SX.sym("x",Sparsity.lower(3))*2)
```



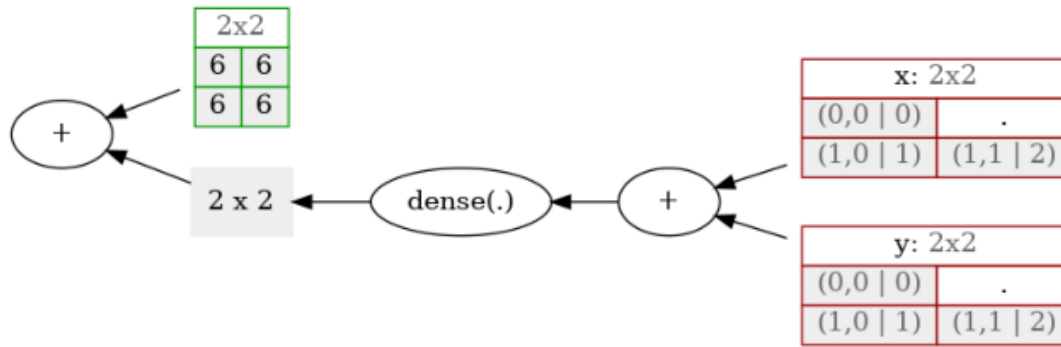
An MX graph

```
[8]: x = MX.sym("x",Sparsity.lower(2))
     y = MX.sym("y",Sparsity.lower(2))
```

```
[9]: z = MX.sym("z",4,2)
```

```
[10]: zz = x+y+6
```

```
[11]: dotdraw(zz)
```



```
[12]: f = Function("magic", [z,y],[z+x[0,0],x-y],{"allow_free":True})
```

```
[13]: z,z2 = f(vertcat(x,y),zz.T)
```

```
[14]: z = z[:2,:] +x + cos(x) - sin(x) / tan(z2)
```

```
[15]: dotdraw(z)
```

