CasADi

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```

More about SX

```
from casadi import *
from numpy import *
```

The identity of an SX node is very persistant. We demonstrate this with the help of symbolic substitution.

```
x=SX.sym("x")
y=x**2
f = Function('f', [x],[y])
print f(SX.sym("w"))
```

```
sq(w)
```

We expect w^2.

```
l = x
f = Function('f', [l],[y])
print f(SX.sym("w"))
```

```
sq(w)
```

We expect w^2.

```
k=SX(x)
l=k[0]
f = Function('f', [l],[y])
print f(SX.sym("w"))
```

```
sq(w)
```

We expect w^2.

```
k=SX.sym("d",2,2)
k.nz[1] = x
l=k.nz[1]
f = Function('f', [l],[y])
print f(SX.sym("w"))
```

```
sq(w)
```

We expect w^2. Identity is not associated with name:

```
l=SX.sym("x")
f = Function('f', [l],[y])
print f(SX.sym("w"))
```

```
sq(x)
```