Mathematica OX server

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OpenXM.org

1 Mathematica

Mathematica ox ox_math . mathematica.rr load("mathematica.rr")$. mathematica.rr $(OpenXM_HOME)/lib/asir-contrib .

: ox_reset .

```
[258] load("mathematica.rr")$
m Version 19991113. mathematica.start, mathematica.tree_to_string, mathematica.n_Eigen
[259] mathematica.start();
ox_math has started.
ox_math: Portions copyright 2000 Wolfram Research, Inc.
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0
[260] mathematica.n_Eigenvalues([[1,2],[4,5]]);
[-0.464102,6.4641]
```

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Author of ox_math: Katsuyoshi Ohara.

1.1

1.1.1 mathematica.start

mathematica.start()
:: Localhost ox_math .

return

- Localhost ox_math . ox_math .
- Xm_noX =1 , ox_math debug window .
- M_proc .

```
P = mathematica.start()
```

ox_launch

1.1.2 mathematica.tree_to_string

mathematica.tree_to_string(t)
:: ox_math Mathematica *t* asir .

return

t

- t ox_math Mathematica .
- ox_math Mathematica *t* asir .

- t asir , . t, , m_ , .

```
[267] mathematica.start();
0
[268] ox_execute_string(0,"Expand[(x-1)^2]");
0
[269] A=ox_pop_cmo(0);
[Plus,1,[Times,-2,x],[Power,x,2]]
[270] mathematica.tree_to_string(A);
(1)+((-2)*(x))+((x)^(2))
[271] eval_str(@);
x^2-2*x+1
```

```
[259] mathematica.tree_to_string(["List",1,2]);
[1 , 2]
[260] mathematica.tree_to_string(["Plus",2,3]);
(2)+(3)
[261] mathematica.tree_to_string(["Complex",2.3,4.55]);
mathematica.complex(2.3 , 4.55)
[362] mathematica.tree_to_string(["Plus",["Complex",1.2,3.5],1/2]);
(mathematica.complex(1.2 , 3.5))+(1/2)
[380] eval_str(@);
(1.7+3.5*@i)
```

ox_pop_cmo, eval_str, mathematica.rtomstr

1.1.3 mathematica.rtomstr

mathematica.rtomstr(t)
:: t Mathematica .

return

t

- t Mathematica . , asir [,] , Mathematica {, } . .

```
[259] mathematica.rtomstr([1,2,3]);
{1,2,3}
[260] mathematica.rtomstr([[1,x,x^2],[1,y,y^2]]);
{{1,x,x^2},{1,y,y^2}}
```

. mathematica.inverse(M) ox_math M . mathematica.inverse(M) r_tostr(M) asir Mathematica ox_execute_string Mathematica .

```
def inverse(M) {
  P = 0;
  A = mathematica.rtomstr(M);
  ox_execute_string(P,"Inverse["+A+"]");
  B = ox_pop_cmo(B);
  C = mathematica.tree_to_string(B);
  return(eval_str(C));
}
```

```
[269] M=[[1,x,x^2],[1,y,y^2],[1,z,z^2]];
[[1,x,x^2],[1,y,y^2],[1,z,z^2]]
[270] A=mathematica.inverse(M)$
[271] red(A[0][0]);
(z*y)/(x^2+(-y-z)*x+z*y)
```

ox_execute_string, ToExpression(Mathematica), mathematica.tree_to_string

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