

## Documentation for Numerical Polynomial Algebra Course

Aim: Download sympy from github, create a branch and modify and test the code.

1. Clone sympy from github

```
git clone git://github.com/sympy/sympy.git
```

2. install mpmath

```
conda install mpmath
```

3. cd sympy

```
run python, then import sympy ...
```

4. create your experimental branch

```
git branch mybranch git checkout mybranch
```

5. install numpy

```
conda install numpy
```

6. run tests for groebnertools

```
... start python, then
```

```
import sympy sympy.test("sympy/polys/tests/test_groebnertools.py")
```

```
check out the testing code
```

7. change some code

- in sympy/polys/groebnertools.py change spoly, then run the tests again  
...

```
def spoly(p1, p2, ring): """ Compute LCM(LM(p1), LM(p2))/LM(p1)p1 -  
LCM(LM(p1), LM(p2))/LM(p2)p2 This is the S-poly provided p1 and p2 are  
monic """
```

```
print("*** this is my own spoly code ***")
```

```
LM1 = p1.LM  
LM2 = p2.LM  
LCM12 = ring.monomial_lcm(LM1, LM2)  
m1 = ring.monomial_div(LCM12, LM1)  
m2 = ring.monomial_div(LCM12, LM2)  
s1 = p1.mul_monom(m1)  
s2 = p2.mul_monom(m2)  
s = s1 - s2  
return s
```