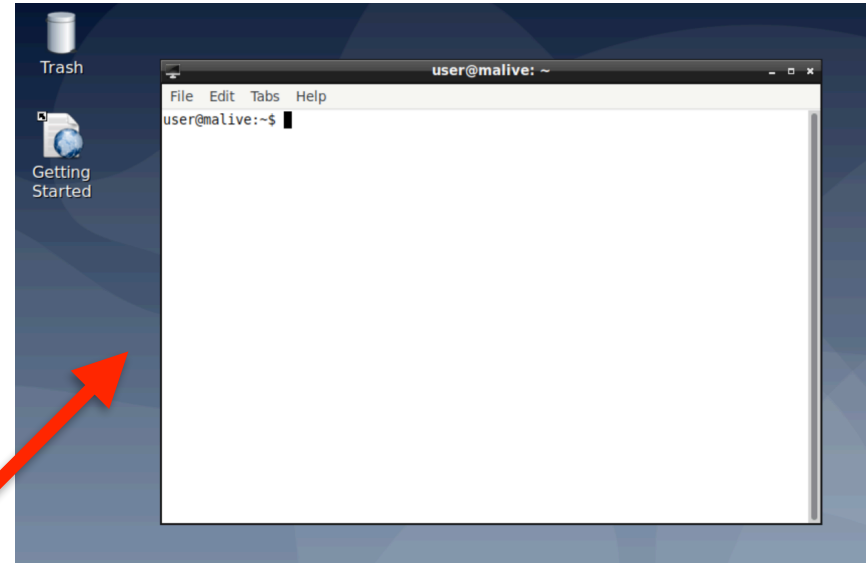
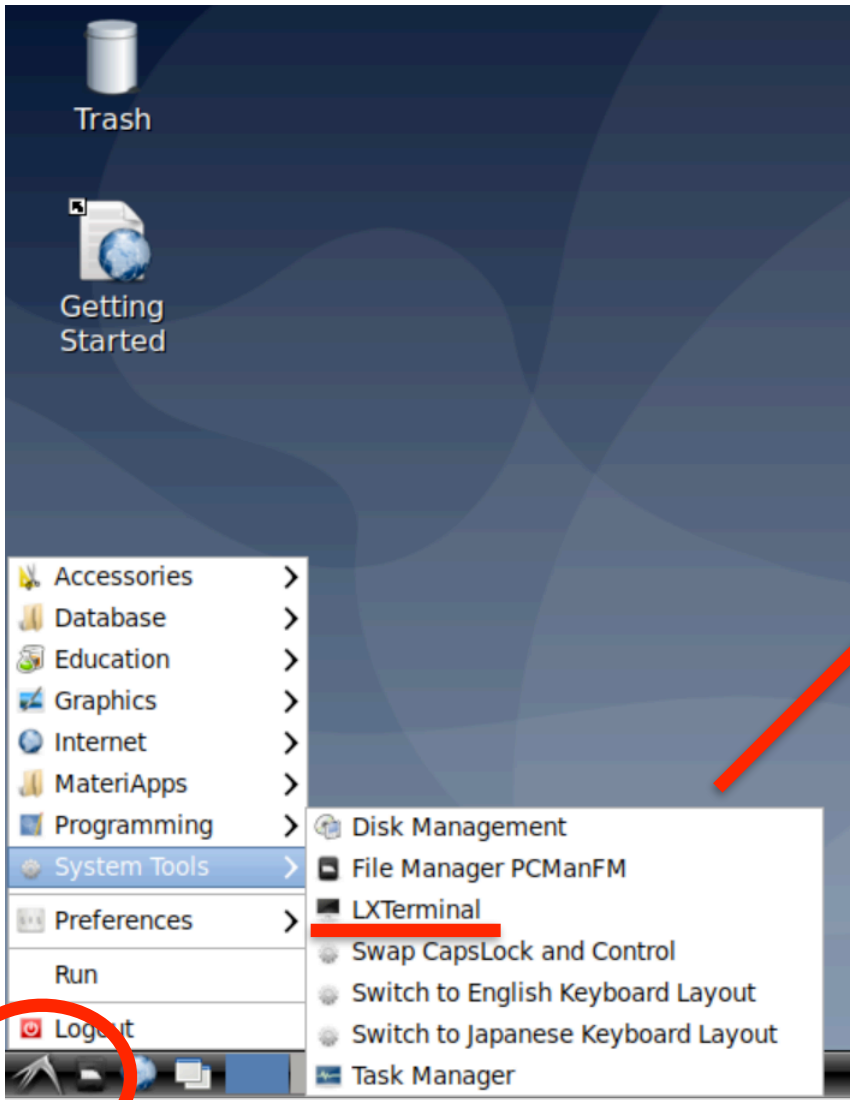


Tutorials of $H\Phi$



<http://www.pasums.issp.u-tokyo.ac.jp/hphi/>

Start a terminal



You can use Linux commands on the terminal

“Start menu” → “System Tools” → “**LXTerminal**”

First step

Solving Heisenberg dimer (2-site Heisenberg model) as the first step

Blue characters represent the commands in the terminal

1. `mkdir dimer` (return key)
2. `cd ./dimer` (return key)
3. Make `stan.in` (input file for $H\Phi$) as follows:

3-1. `nano stan.in` (return key)

3-2. in nano, please write following inputs:

`L=2`

`model = "Spin"`

`method = "FullDiag"`

`lattice = "chain"`

`J = 0.5`

`2Sz = 0`

`2S = 1`

3-2. `Control + X` → `Y` → (return key)

[see the snapshot on right]

3-3. `HPhi -s stan.in` (return key)

3-4. You will get results.

To confirm that, please execute following commands

`cat output/zvo_phys_Nup1_Ndown1.dat`

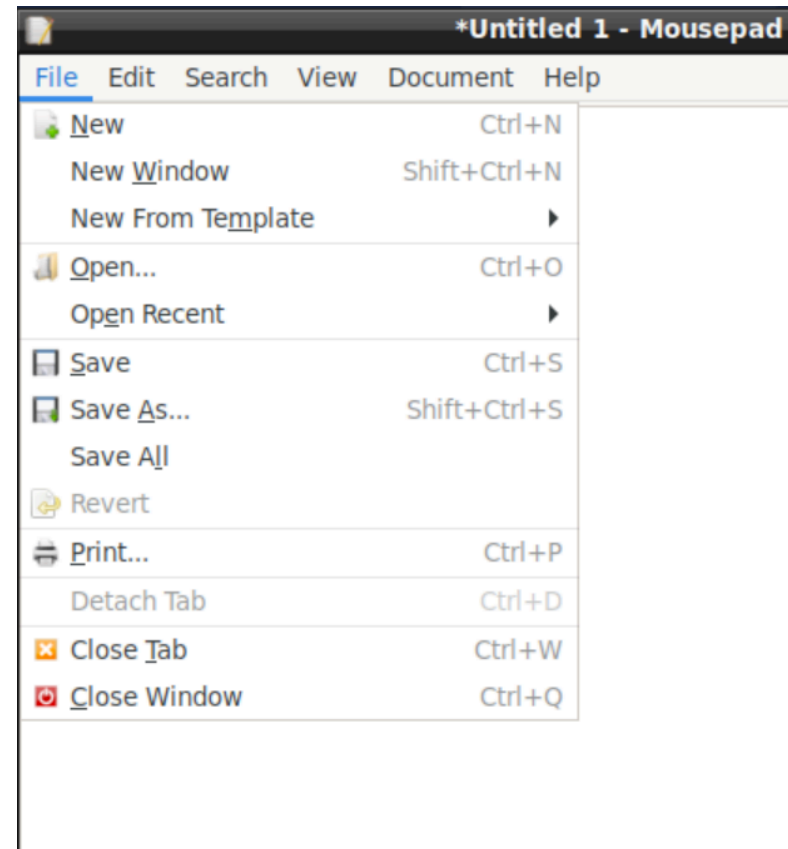
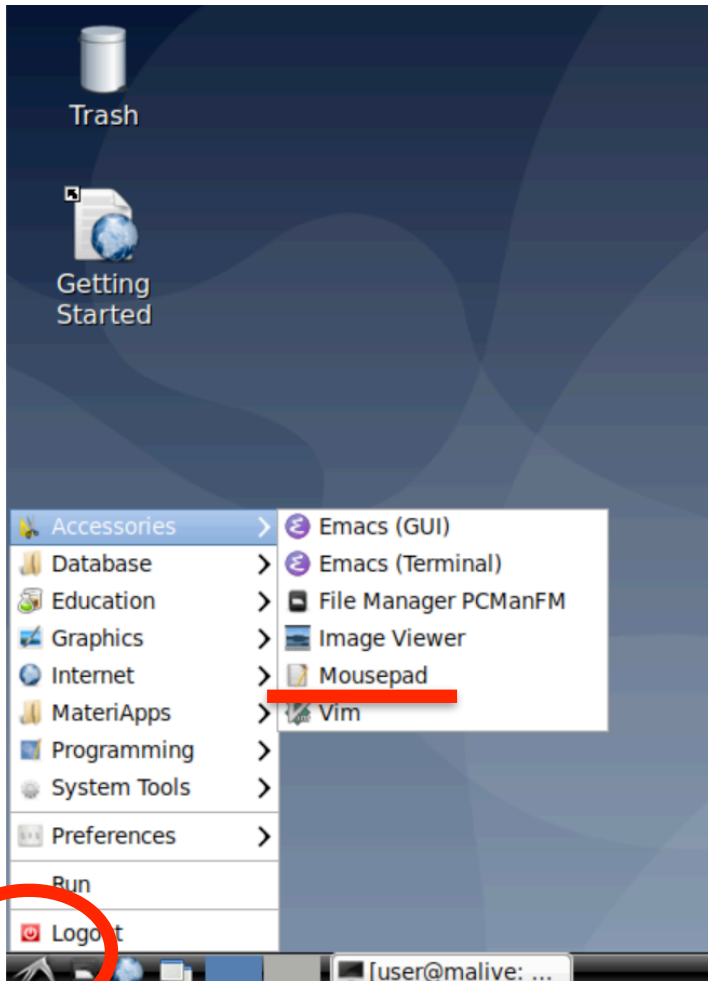
snapshot for nano (`^X = Control X`)

```
user@malive: ~/dimer
File Edit Tabs Help
GNU nano 3.2 stan.in
L=2
model = "Spin"
method = "FullDiag"
lattice = "chain"
J = 0.5
2Sz = 0
2S = 1
[ Read 7 lines ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

How to edit files ?

In MateriApps LIVE!, you can use [nano](#), [emacs](#), [vim](#), and [mousepad](#).
For beginners, we recommend using [nano](#) or [mousepad](#).

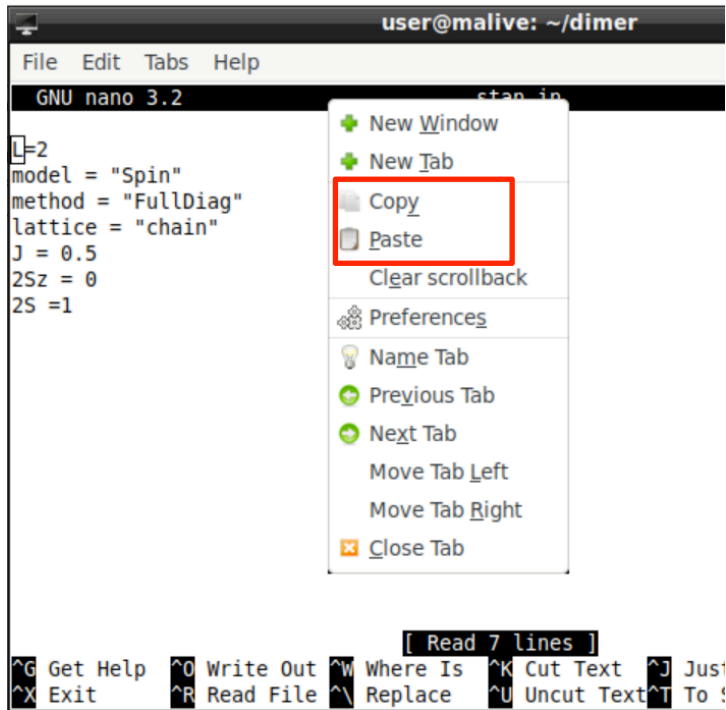
“Start menu” → “Accessories” → “[Mousepad](#)”



You can use mousepad like standard text editors !

Tips

- Use right click (右クリック) for copy and paste (コピー)



The screenshot shows a terminal window with the nano text editor. The editor's content includes parameters like 'model = "Spin"', 'method = "FullDiag"', and 'lattice = "chain"'. A right-click context menu is open, with 'Copy' and 'Paste' options highlighted by a red rectangle. The terminal title bar shows 'user@malive: ~/dimer' and the nano version is 'GNU nano 3.2'. At the bottom, a status bar indicates '[Read 7 lines]' and lists various keyboard shortcuts.

- Use Tab key for complementing commands [補完]

e.g. **HP+** (Tab key) → you can obtain HPhi



Let's enjoy HΦ