

# データサイエンス

Python&R環境構築: VMインストール

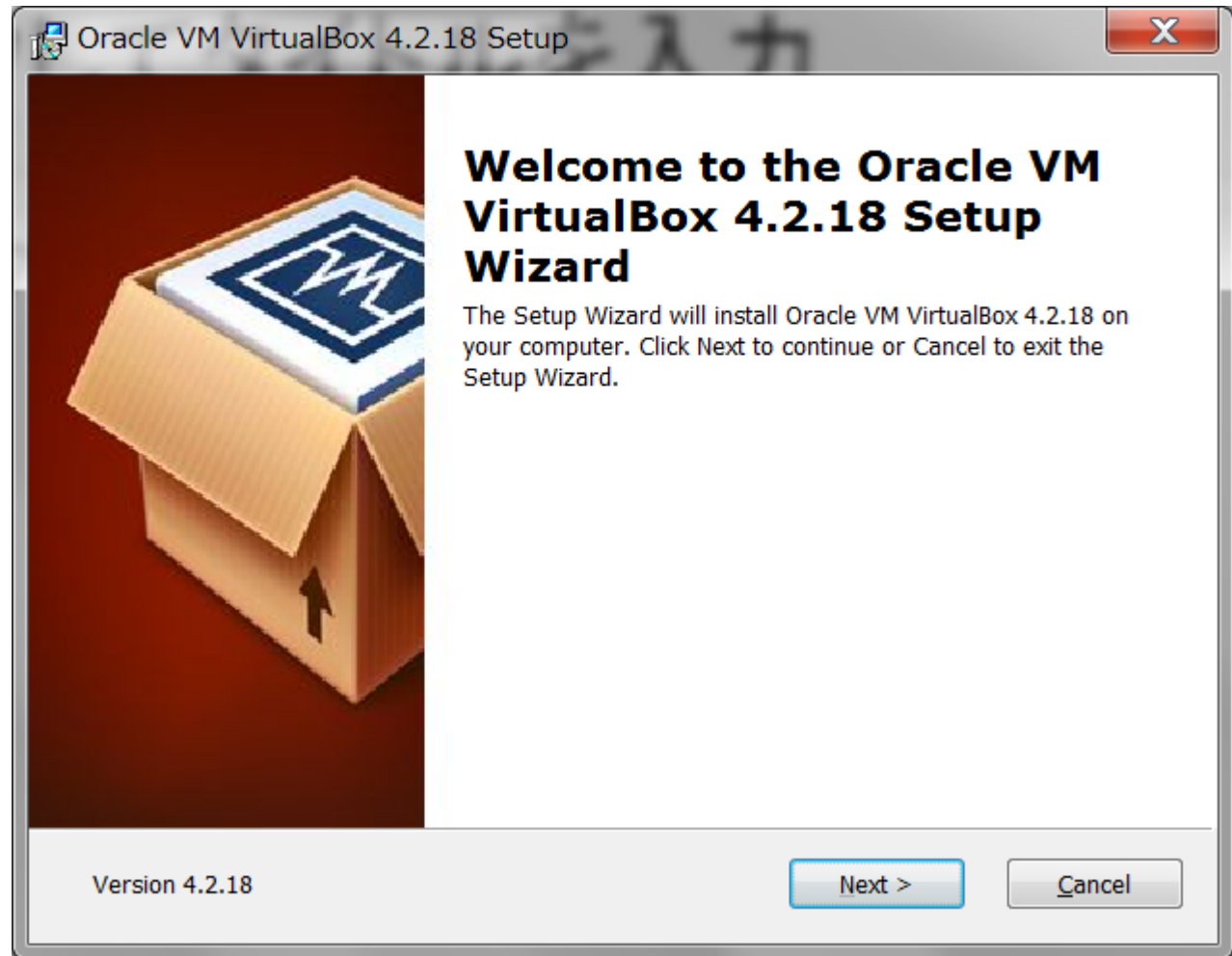
# (必要であれば)USBからファイルをコピー

- VirtualBox
  - VirtualBox-\*.\*. \*-103037-Win.exe (Windows)
  - VirtualBox-\*.\*. \*-103037-OSX.dmg (Mac)
  - VirtualBox-\*.\*. \*-103037-Linux\_amd64.run (Linux 64bit)
- 講義用VM (Ubuntu16.04)
  - DS2017V1.ova
  - VMware用のマシンはあとでHPにアップロードします

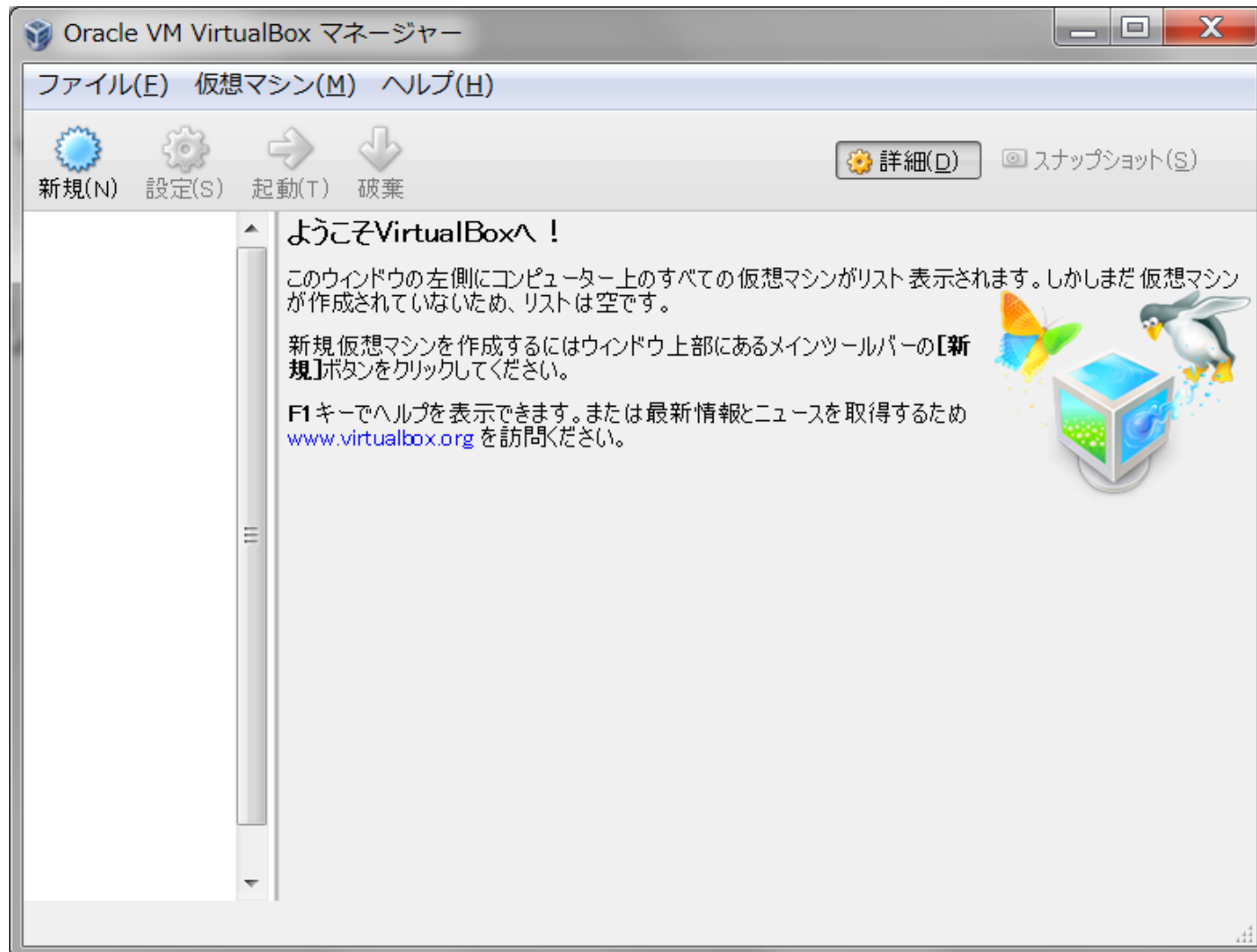
先にコピーだけして次の人に回してください

# VirtualBox インストール

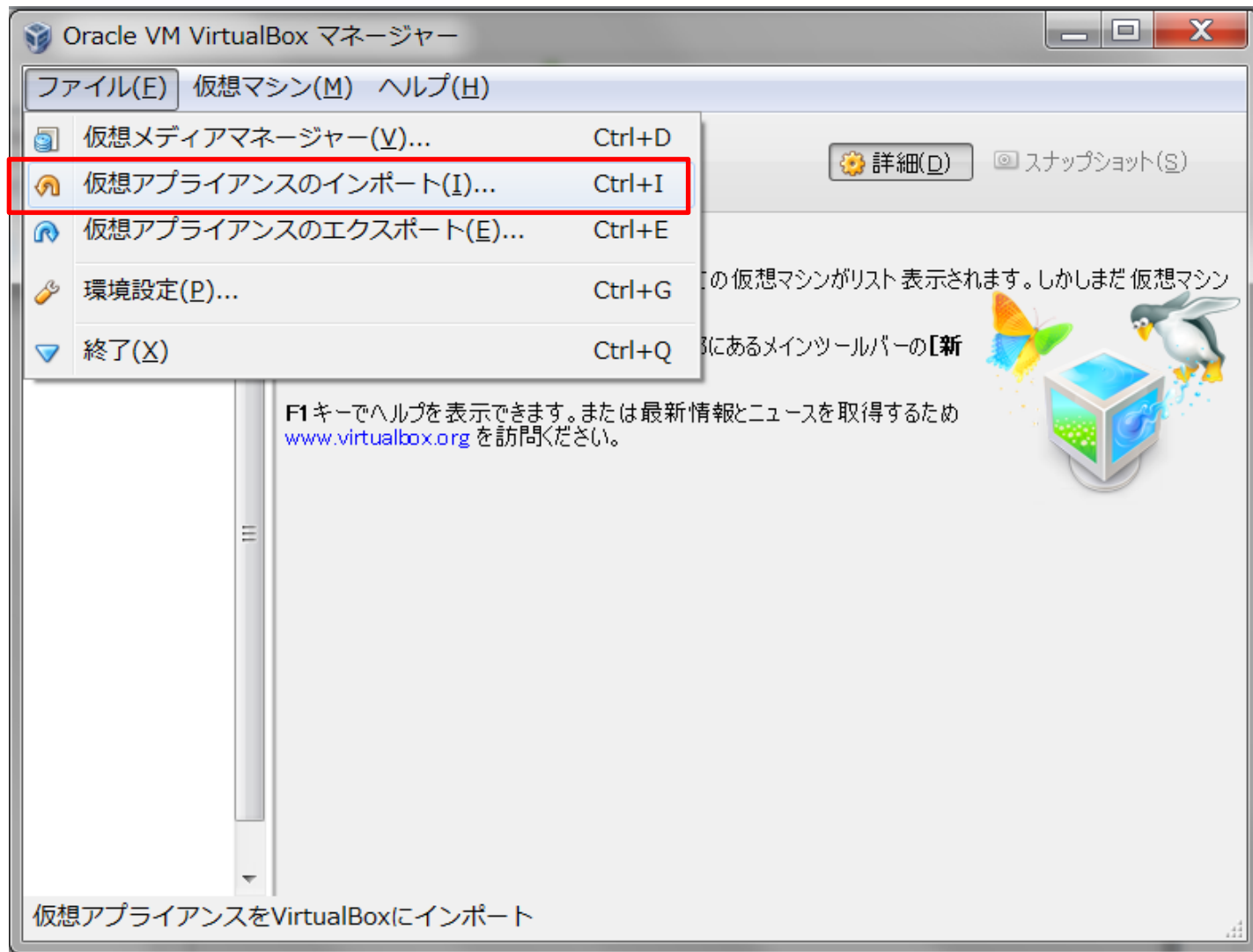
- 全部 “Yes”,  
“Install”



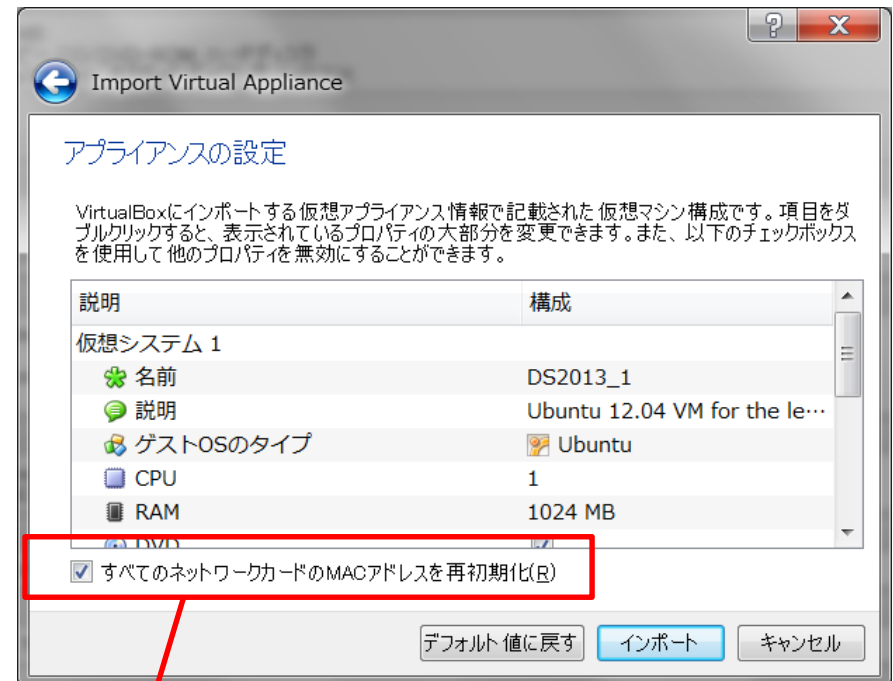
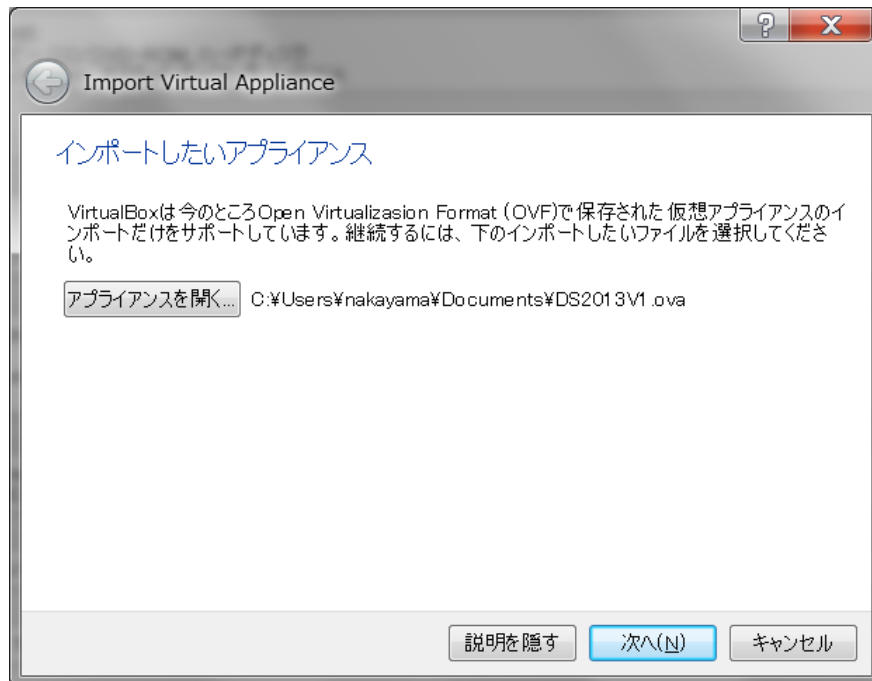
- VirtualBox を起動



- 仮想マシンをインポート

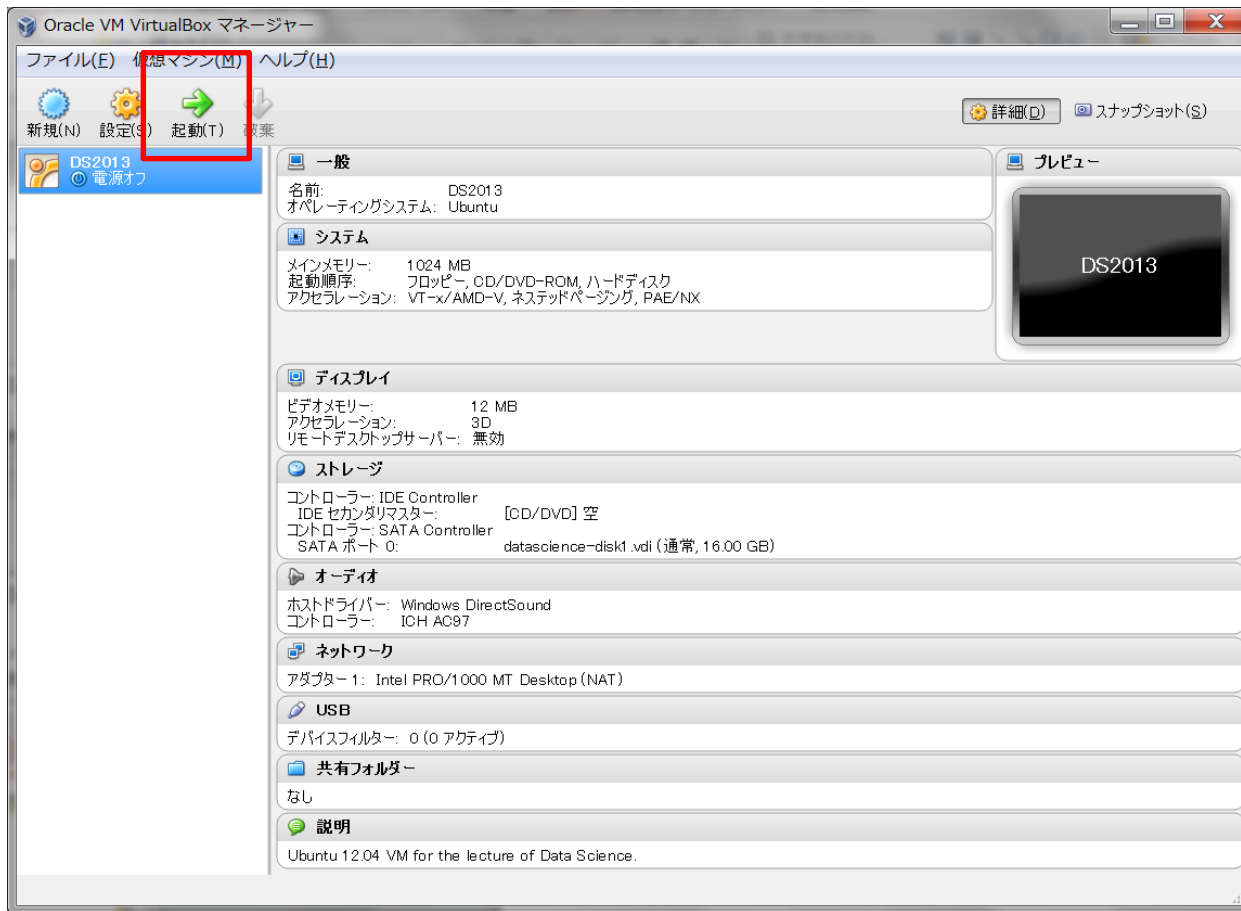


- DS2017V1.ova を選択、インポート  
– 10GB程度のHDD容量が必要



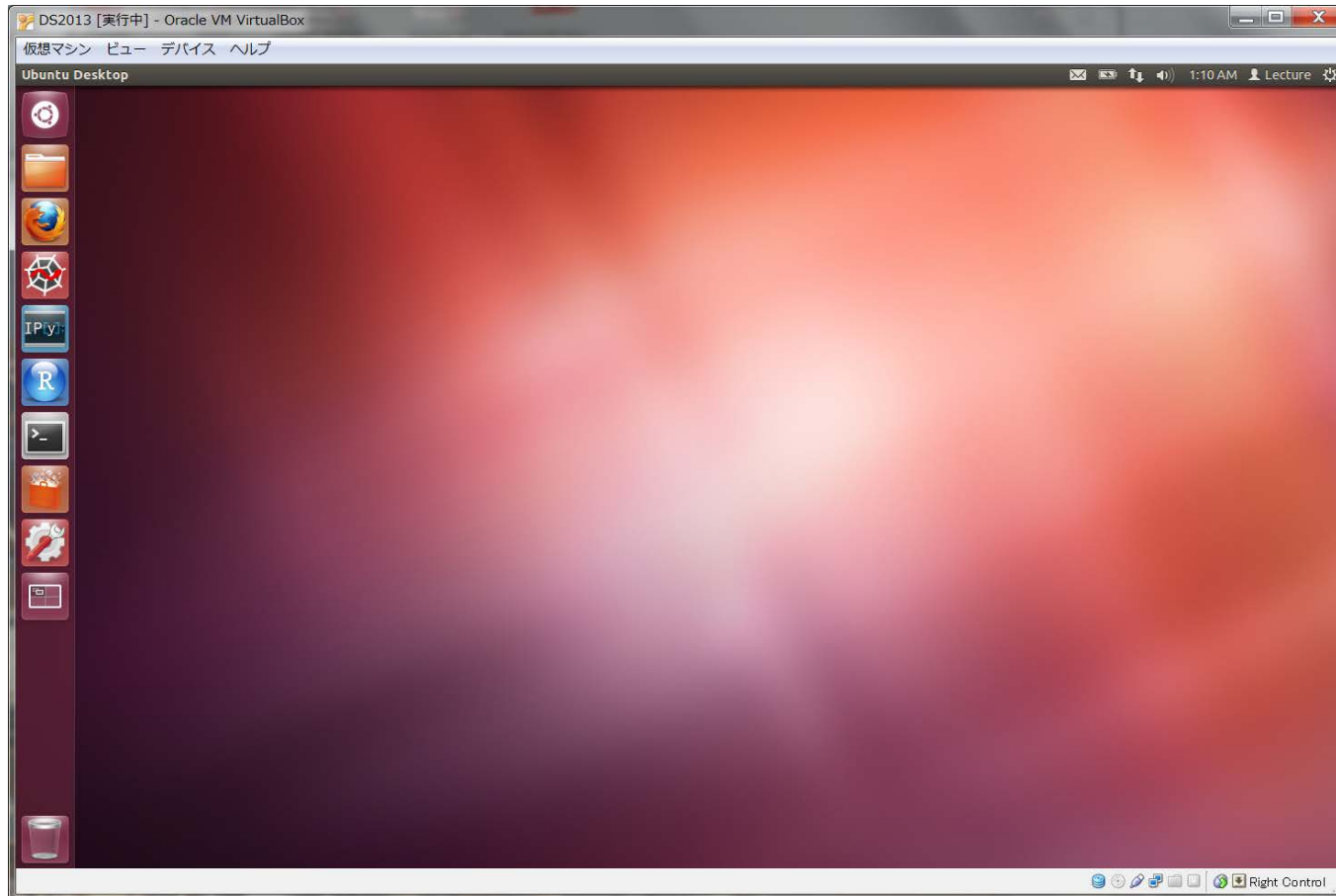
チェックする

# • 仮想マシンを起動



- Ubuntu 16.04
- ストレージ 最大20GB  
(容量可変)
- CPU x1
- メモリ 2GB

- Ubuntu VMが起動



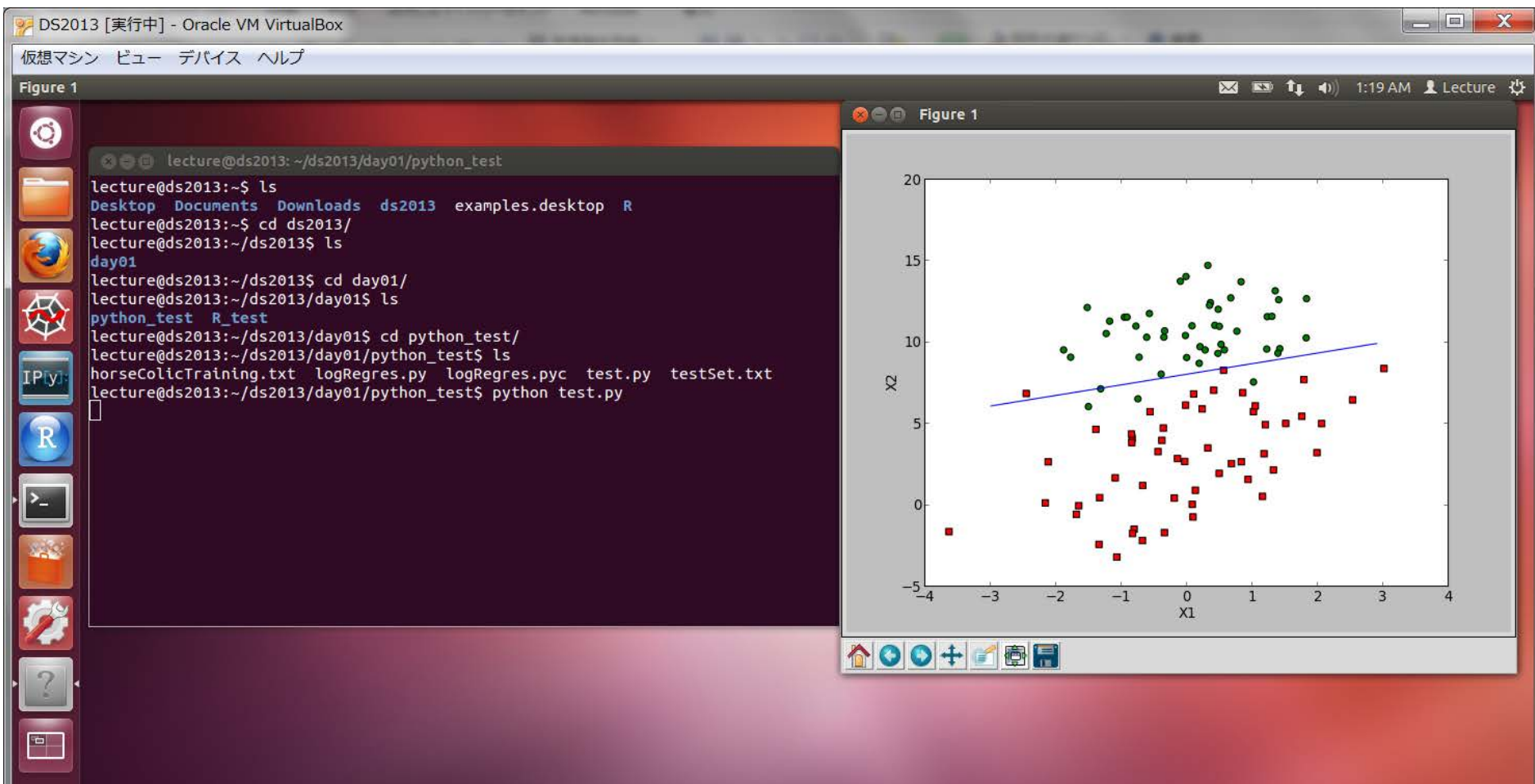
- ID: lecture
- Pass: ds2017



# コンソール起動, python環境のテスト

```
$ cd ~lecture/ds2017/day01/python_test
```

```
$ python test.py
```



# Spyderの利用

\$ spyder (起動)

test.py を開き、F5で実行

The screenshot displays the Spyder IDE interface within an Oracle VM VirtualBox window titled "DS2013 [実行中] - Oracle VM VirtualBox". The interface is divided into several panels:

- Terminal:** Shows the command prompt for a user named "lecture" in a directory "ds2013/day01/python\_test". The command `ls` has been executed, listing files like `horseColi`, `lecture@ds2013:~/ds2013/day01/python_test$ ls`, and `logRe`.
- Code Editor:** Displays the file `test.py` with the following Python code:

```
1#!/usr/bin/python
2
3import numpy as np
4import logRegres
5
6dataArr,labelMat=logRegres.loadDataSet()
7weights=logRegres.stocGradAscent1(np.array(dataArr),labelMat)
8logRegres.plotBestFit(weights)
9
10
```
- Figure 1:** A scatter plot showing data points (green circles and red squares) and a fitted blue line. The x-axis is labeled `X1` and ranges from -4 to 4. The y-axis is labeled `X2` and ranges from -5 to 20.

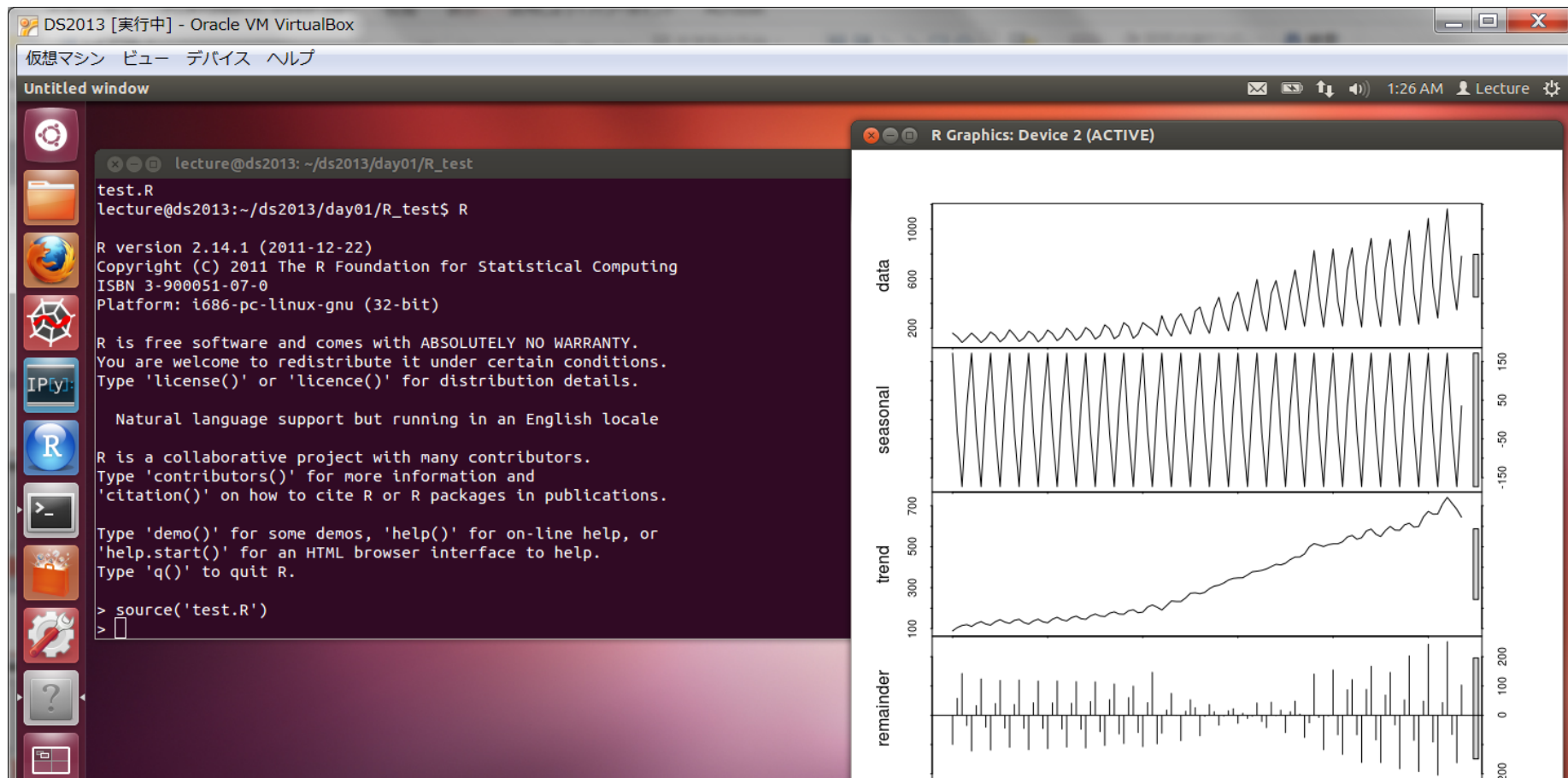
A red circle highlights the "File" menu icon in the Spyder toolbar, with the Japanese text "ファイルを開く" (Open file) written next to it. The bottom status bar shows the current file is `test.py` and the execution time is `00:00:23`.

# R環境のテスト

```
$ cd ~lecture/ds2017/day01/R_test
```

```
$ R (Rコンソールが起動)
```

```
> source("test.R")
```



# Rstudio の利用

\$ rstudio test.R (GUI起動)

「Run」で一行ずつ実行

The screenshot displays the RStudio interface within an Oracle VM VirtualBox window. The main editor window shows a script named 'test.R' with two lines of code: `1 plot(stl(UKgas, s.window="per"))` and `2`. The 'Run' button, represented by a green play icon, is circled in red, with the word 'Run' written in red text below it. The console window at the bottom left shows the R version (2.14.1) and the execution of the `plot(stl(UKgas, s.window="per"))` command. The right-hand pane contains a 'Workspace' tab and a 'Plots' tab. The 'Plots' tab is active, showing a time series plot of UK gas consumption from 1960 to 1985, with the y-axis labeled 'data' and the x-axis labeled 'time'. The plot includes a seasonal component, a trend component, and a remainder component.

DS2013 [実行中] - Oracle VM VirtualBox  
仮想マシン ビュー デバイス ヘルプ

RStudio

File Edit Code View Plots Session Project Build Tools Help

test.R ×

Source on Save

Run

Run

Workspace History

Import Dataset

Files Plots Packages Help

Zoom Export Clear All

Console ~/ds2013/day01/R\_test/

R version 2.14.1 (2011-12-22)  
Copyright (C) 2011 The R Foundation for Statistical Computing  
ISBN 3-900051-07-0  
Platform: i686-pc-linux-gnu (32-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.  
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Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.  
Type 'contributors()' for more information and  
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.  
Type 'q()' to quit R.

> plot(stl(UKgas, s.window="per"))  
>

data

seasonal

trend

remainder

time