

from .py to .deb : Preparation

- Prepare applications to make a .deb package out of a python program:
 - Terminal
 - File-Manager
 - Text Editor
- Install programs:
 - dpkg-dev
 - dh-make
- Learn how to use commands:
 - cd ..
 - cp
 - mv
 - rm
- Note: in all commands on the next pages, replace rockpaperscissor, rockpaperscissors16, sandbox etc. with your own python program or folder names.

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```
$ sudo apt-get install dpkg-dev
$ sudo apt-get install dh-make
```

```
$ man cd
$ man cp
$ man mkdir
$ man rm
```

Setting up an environment

- create a „sandbox“ folder. Select it.
- create a folder for your python program (pythonprogramname-versionnumber)
- copy the archive (tar.gz, zip, ...) of your working python program into this folder. (e.g. „rockpaperscissors16.tar.gz“)
- extract the archive file in this folder (creating files and sub-folders)
- do **not** delete this archive file !
- test if python-program still works
- read the man-file of dh_make (yes, you install dh-make and type dh_make) and fill out the options as needed:
 - -e for your email address
 - -c for your license
 - -f for your archive filename
- Answer "s" for "single" and hit "Enter"

```
$ mkdir sandbox  
$ cd sandbox
```

```
$ mkdir rockpaperscissors-0.16  
$ cd rockpaperscissors-0.16
```



```
$ man dh_make
```

```
$ dh_make -e pygamebook@gmail.com -c GPL -f  
rockpaperscissors16.tar.gz
```

```
Type of package: single binary, multiple  
binary, library, kernel module or cdb?  
[s/m/l/k/b] s  
  
Maintainer name : Horst JENS  
Email-Address   : pygamebook@gmail.com  
Date            : Sun, 26 Nov 2006 20:13:51  
+0100  
Package Name    : rockpaperscissors  
Version         : 0.16  
License         : gpl  
Type of Package : Single  
Hit <enter> to confirm:
```

working with config-files: control

- Now two things happened:
 - 1.) a sub folder called "debian" was created
 - 2.) the archived file was copied into the sandbox folder (parent folder) and renamed from .tar.gz to .orig.tar.gz
- Delete this .orig.tar.gz file in the parent folder (sandbox) !
- Now change into the new created debian sub folder:
- Now edit the file **control** :
 - section: The section to organize your program into (game, office, ..)
 - depends: packages needed in the format "package (version)" version can further specified with <= or >=
 - description: A one-line description (60 chars max) of your program followed by a multi-line description.
- save and close the file **control**



```
$ rm ../rockpaperscissors_0.16.orig.tar.gz
```

```
$ cd debian  
$ ls
```

```
changelog  compat  control  copyright  dirs  
docs      README.Debian  rules
```

```
$ gedit control
```

```
Source: rockpaperscissors  
Section: games  
Priority: optional  
Maintainer: Horst JENS  
<pygamebook@gmail.com>  
Build-Depends: debhelper (>= 5)  
Standards-Version: 3.7.2  
  
Package: rockpaperscissors  
Architecture: any  
Depends: python (>=2.4.3-11ubuntu3)  
Description: A game to let you play "Rock,  
Paper, Scissors" against the computer  
The game is written in python using the  
tkinter GUI.
```

working with config-files: rules

- edit the file **rules**:
 - find the section *build-stamp* and replace it with this text:
 - find the section *clean* and replace it with this text:
 - before editing the section *install* (see next page) please note:

```
$ gedit rules
```

```
build-stamp: configure-stamp
dh_testdir
touch build-stamp
```

```
clean:
dh_testdir
dh_testroot
rm -f build-stamp configure-stamp
dh_clean
```

The commands in the *install* section of the file *rules* will copy the file *rockpaperscissors16.py* into */usr/games/rockpaperscissors.py* .

The string *\$(CURDIR)* refers to *~/sandbox/rockpaperscissors-0.16*

The folder *\$(CURDIR)/debian* exist.

The folder *\$(CURDIR)/debian/rockpaperscissors* does NOT exist YET, but will be created by the commands in this section and refers to root (/).

imagine a game called “rock”:

it will be installed from .deb into:

/home/rock/rock.py	→	/usr/games/rock.py
/home/rock/readme.txt	→	/usr/share/doc/rock/readme.txt
/home/rock/rock.desktop	→	/usr/share/applications/rock.desktop
/home/rock/data/rock1.jpg	→	/usr/share/games/rock/data/rock1.jpg
/home/rock/data/rock2.jpg	→	/usr/share/games/rock/data/rock2.jpg

working with config-files: rules

- find the section *install* and replace it with this text:
(take your python project name instead of rockpaperscissors and make other changes as needed).

```
install: build
dh_testdir
dh_testroot
dh_clean -k
dh_installdirs

# Add here commands to install the package into debian/rockpaperscissors.
#$(MAKE) install DESTDIR=$(CURDIR)/debian/rockpaperscissors
mkdir -p $(CURDIR)/debian/rockpaperscissors

### insert your commands here
cp rockpaperscissors16.py $(CURDIR)/debian/rockpaperscissors/usr/games/rockpaperscissors.py

### Installing the data files
# the subfolder "data" should be copied to /usr/share/games/rockpaperscissors
mkdir -p $(CURDIR)/debian/rockpaperscissors/usr/share/games/rockpaperscissors
cp -r data/ $(CURDIR)/debian/rockpaperscissors/usr/share/games/rockpaperscissors

### Installing menufile
# Now copy the file with the menu entry into /usr/share/applications.
cp rockpaperscissors.desktop $(CURDIR)/debian/rockpaperscissors/usr/share/applications/

### copy readme and documentation files into /usr/share/yourfoldername if needed
# mkdir -p $(CURDIR)/debian/rockpaperscissors/usr/share/doc/rockpaperscissors
# cp readme.txt $(CURDIR)/debian/usr/share/doc/rockpaperscissors/readme.txt
```

dirs, copyright, README.Debian

- edit the file **dirs**
- Here should be listed all necessary folders (in case those folders do not exist on the target computer)
- Now edit the file **copyright**
- Fill in: author, email, license. You can refer to /usr/share/common-licenses/. Fill in all the licenses/sources for used sounds, images etc.
- Now delete all the not-used example files:
- Now edit **README.Debian** and describe all the changes to pathnames etc- that you will have to make in your python program.
- leave the "debian" sub folder and go to the parent folder
- now edit your python program file(s) so that all the paths connect to the correct folders (/usr/share/games/...) like described in the "README.Debian" file.

```
$ gedit dirs
```

```
usr/games  
usr/share/games/rockpaperscissors  
usr/share/applications
```

```
$ gedit copyright
```

```
$ rm *.ex  
$ rm *.EX
```

```
$ gedit README.Debian
```

```
$ cd ..
```

```
$ gedit rockpaperscissors16.py
```

creating the .desktop file

- create a desktop file: This file will make icon and menu entry's for your program. Look at some other entry's in the folder /usr/share/applications for ideas.

Note that nautilus does not display the extension .desktop but instead the name entry of the desktop file.
Use the ls command to display the .desktop file correctly.

- Now it is time to build the package. With the option -k you can add a GPG-Key to sign your package.
- Now your .deb package should be in your parent folder. (sandbox)
- Install the .deb file to your system by double-clicking on it or by typing:
- now kill the gnome-panel to see the new menu entry
- if you want, you can also create a .rpm package:

```
$ gedit rockpapersciissors.desktop
```

```
[Desktop Entry]
Encoding=UTF-8
Icon=/usr/share/games/rockpapersciissors/data
/computerklein.gif
Name=Rock, Paper, Scissors
Comment= A little game to play Rock, Paper,
Scissors against the computer.
Exec=python /usr/games/rockpapersciissors.py
Terminal=false
Type=Application
Categories=GNOME;GTK;Game;
StartupNotify=false
```

```
$ sudo dpkg-buildpackage
```

```
$ cd ..
$ ls
```

```
$ sudo dpkg -i rockpapersciissors_0.16-
1_i386.deb
```

```
$ killall gnome-panel
```

```
$ sudo apt-get install alien
$ sudo alien --to-rpm
rockpapersciissors_0.16-1_i386.deb
```