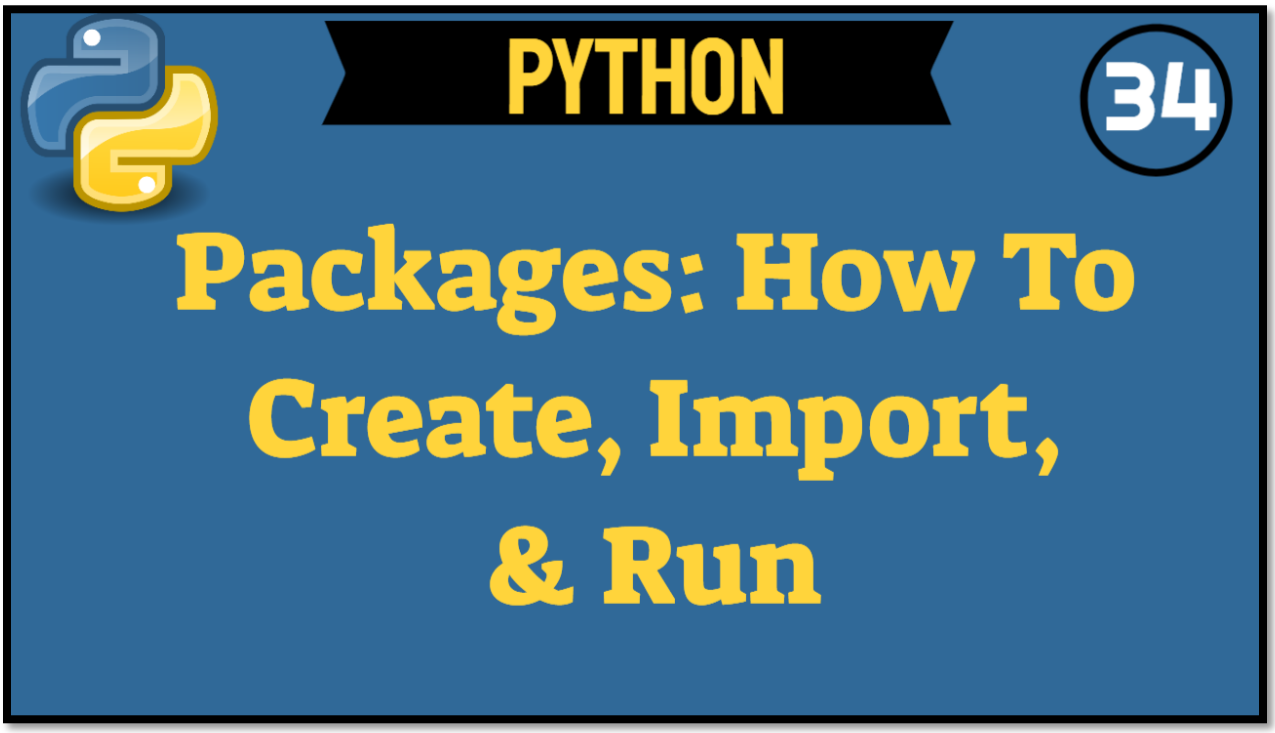
Rex Jones II

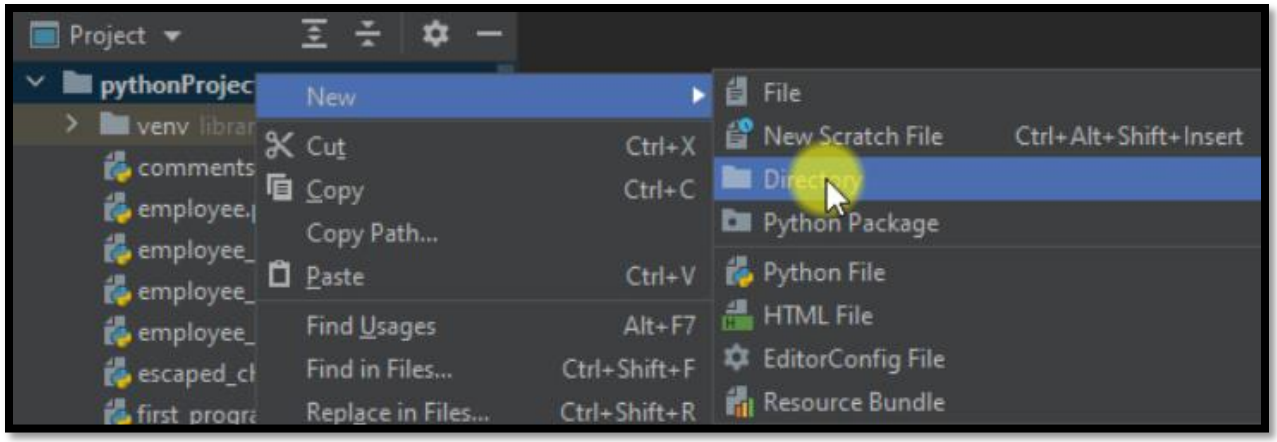
How To Create, Import & Run Packages



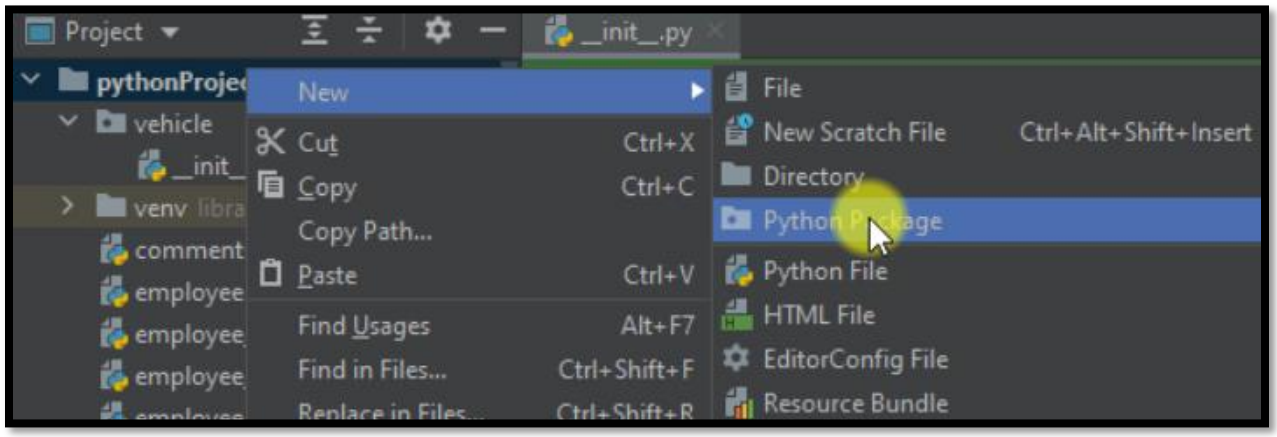
Python Video = https://youtu.be/bLTpc9RBI7A

In this session, I will demo how to create packages and how to use packages in Python. A package is a way to organize related modules. For example, if we had 3 modules and the modules were called car, truck, and motorcycles. A relevant package name will be called vehicle.

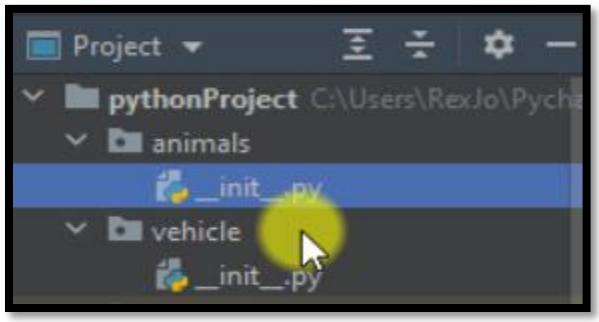
Let's go to PyCharm and start by creating a package. There are 2 ways to create a package. The 1st way is to right click the directory pythonProject, select New, select Directory



then provide a name like vehicle. Right click the vehicle directory, select New, select Python File, and name the file __init__. Vehicle is the package with 1 special init module. The 2nd way to create a package is to right click the directory pythonProject, select New but this time select Python Package.

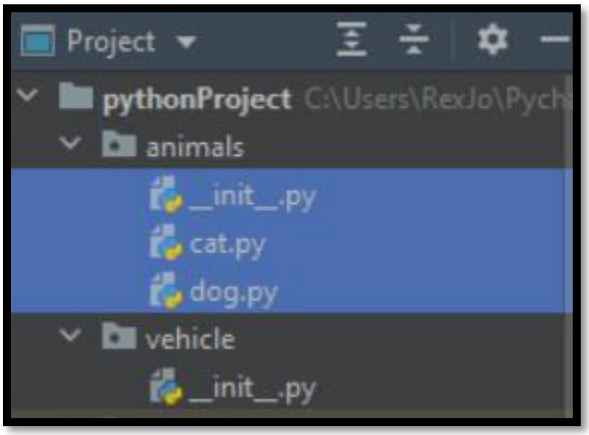


Name the package animals. Notice, how the special module __init_ was created automatically when selecting Python Package. This special init module file has a purpose to inform the Python interpreter that vehicle and animals are packages.



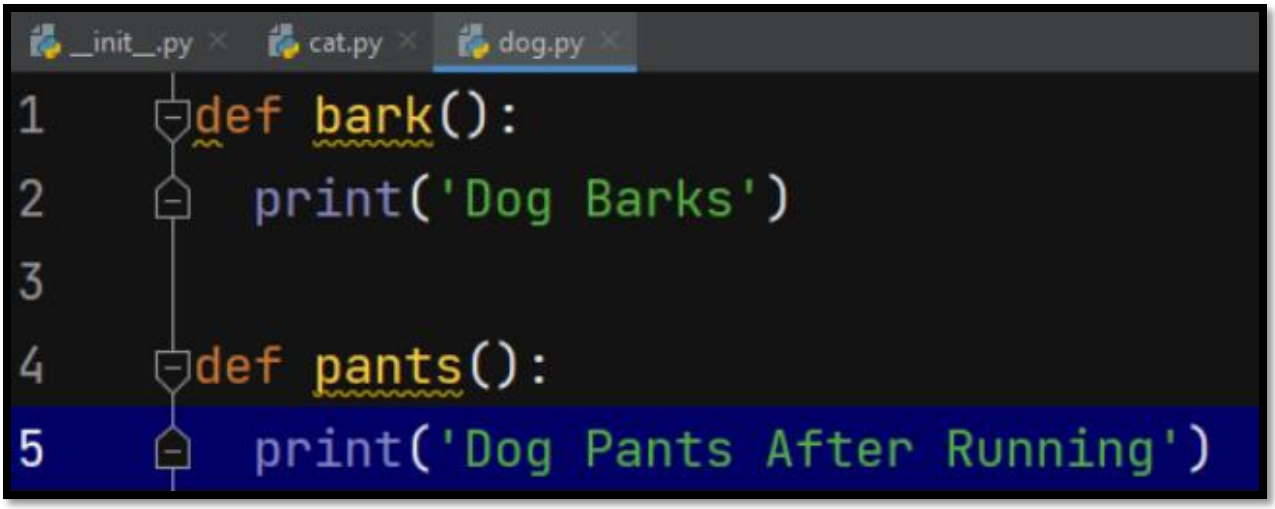
If the init file was not available then vehicle and animals would not be recognized as packages. Normally, we keep the init file empty. I'm going to add 2 modules to the animals package. Right click the package

then select New, then Python File. Name is cat. We can also right click the package, select New, and select File. Name is dog. If we select File and not Python File then we must add the extension dot .py to the end of the File Name. Now we have 3 modules: a special init module, cat and dog

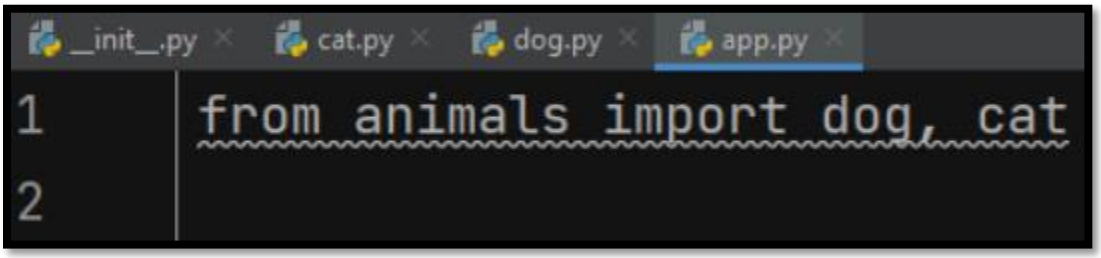


Add 2 functions to the cat module by defining def meow(): / print("Cat Meows"). I'm going to add one more function def jump(): / print("Cat Jumps Very High").

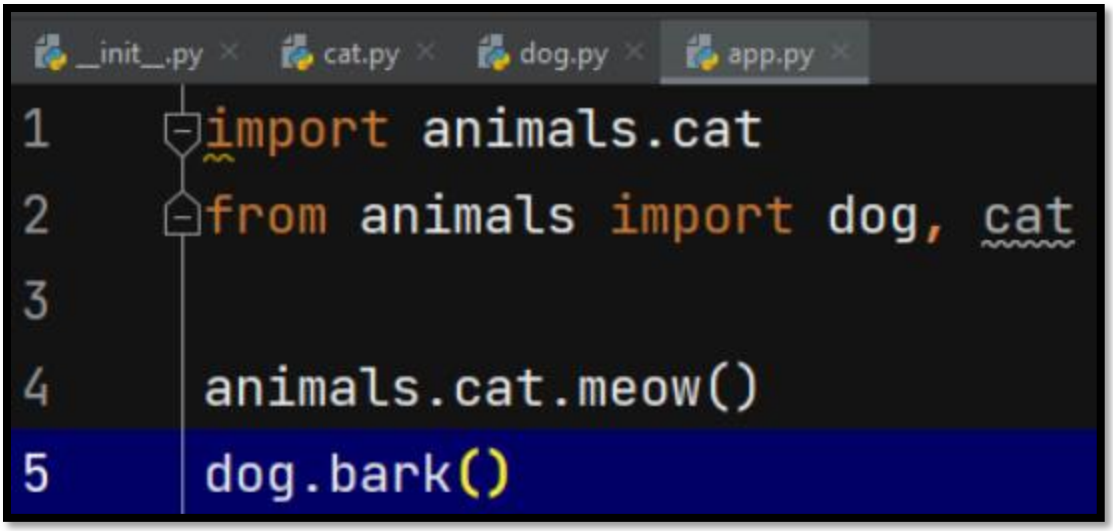
The dog module will also have 2 functions. def bark(): / print('Dog Barks') and def pant(): / Dog Pants After Running.



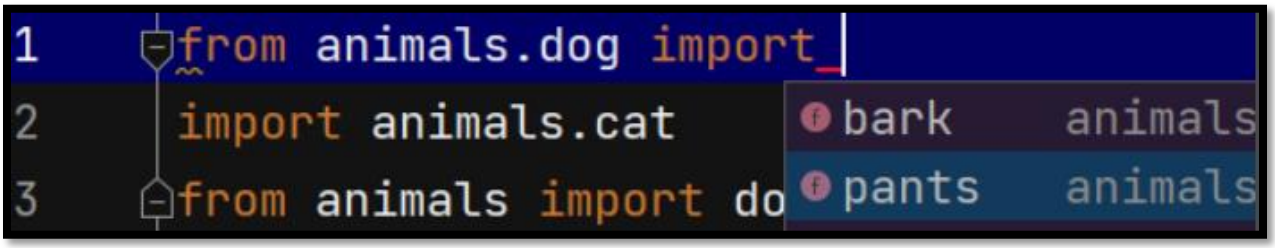
To demonstrate how to use a package. Let's add another module by right clicking pythonProject, New, and Python File. The name is app. Using a package is similar to modules, functions, and classes. We can write import animals but I prefer to start with the keyword from. Next is the package name animals followed by import then the module name dog. A comma (,) allows us to add more than 1 module name. I'll go ahead and add cat.



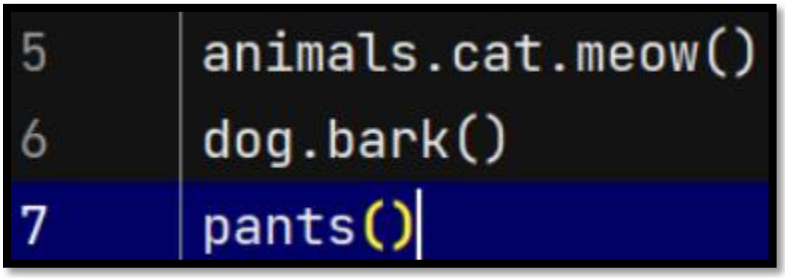
So if I write animals and the dot operator (.) We see cat(animals) and dog(animals). To print meow we write select the meow() function. If we want to skip writing the package name animals then we call the function by writing dog.bark().



We can call a function either way by writing the package name then the module and function or only write the module name then the function. Python allows us to go 1 step further by only writing the function name. The import statement starts with from then the package name animals. This time, the dot operator (.) provides access to the module dog or cat. Select dog then import. Both functions show up. We see bark and we see pants.



I already used bark so I'm going to select pant().



We call the function pant by only writing pant(). Of course, we can use more than 1 function by writing from animals.cat import meow, jump. Call the jump function just like the pant function by writing jump().

```python
from animals.cat import meow,jump
from animals.dog import pants
import animals.cat
from animals import dog, cat

animals.cat.meow()
dog.bark()
pants()
jump()
```

Throughout this series, I have been using the play button to run each program. The Console shows each print statement. However, we can also use the Terminal to print something to the Terminal. We write python and the module name plus the .py extension: app.py then press enter

```
(venv) C:\Users\RexJo\PycharmProjects\pythonProject>python app.py
Cat Meows
Dog Barks
Dog Pants After Running
Cat Jumps Very High
```

or app.py then enter. In the console, we see Cat Meows, Dog Barks, Dog Pants After Running, and Cat Jumps Very High.

```
(venv) C:\Users\RexJo\PycharmProjects\pythonProject>app.py
Cat Meows
Dog Barks
Dog Pants After Running
Cat Jumps Very High
```

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