

Lab 8

Linear Regression with PyTorch

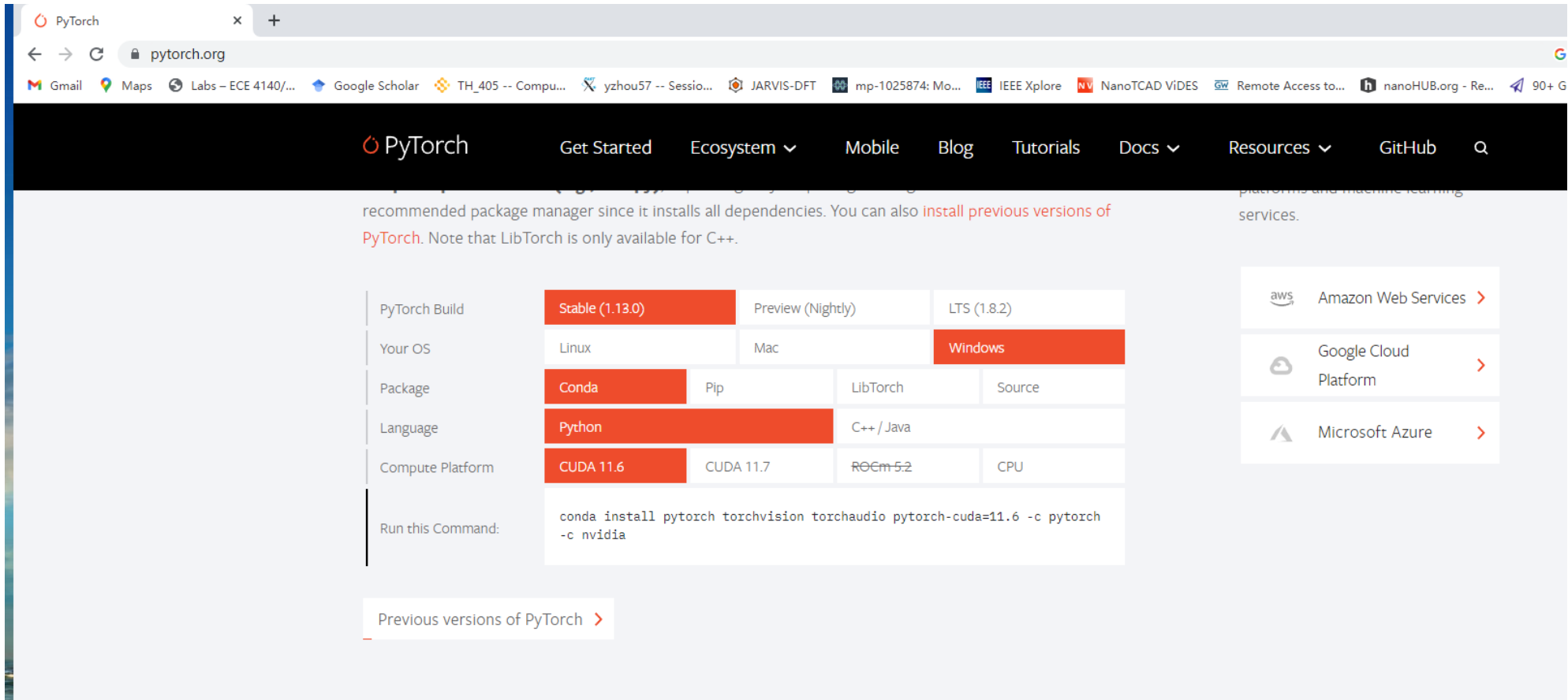
10/31/2022

TA: You Zhou

Tutorial for Deep Learning with Pytorch

- https://www.deeplearningwizard.com/deep_learning/practical_pytorch/pytorch_linear_regression/#summary

Install PyTorch



The screenshot shows the PyTorch website's installation guide. The browser's address bar displays 'pytorch.org'. The website's navigation bar includes links for 'Get Started', 'Ecosystem', 'Mobile', 'Blog', 'Tutorials', 'Docs', 'Resources', and 'GitHub'. The main content area features a table for selecting installation options, a command box for the terminal, and a list of cloud service providers.

recommended package manager since it installs all dependencies. You can also [install previous versions of PyTorch](#). Note that LibTorch is only available for C++.

PyTorch Build	Stable (1.13.0)	Preview (Nightly)	LTS (1.8.2)	
Your OS	Linux	Mac	Windows	
Package	Conda	Pip	LibTorch	Source
Language	Python		C++ / Java	
Compute Platform	CUDA 11.6	CUDA 11.7	ROCM 5.2	CPU

Run this Command:

```
conda install pytorch torchvision torchaudio pytorch-cuda=11.6 -c pytorch -c nvidia
```

[Previous versions of PyTorch](#)

- Amazon Web Services
- Google Cloud Platform
- Microsoft Azure

ECOSYSTEM

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Open terminal

Anaconda Navigator

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base (root)



pythonProject1

python_study

two

Installed



Channels

Update index...

Name	T	Description
------	---	-------------

✓ _ipyw_jlab_nb_ex...	○	A configuration metapackage for enabling anacon
✓ alabaster	○	Configurable, python 2+3 compatible sphinx them
✓ anaconda	○	Simplifies package management and deployment
✓ anaconda-client	○	Anaconda cloud command line client library
✓ anaconda-project	○	Tool for encapsulating, running, and reproducing
✓ anyio	○	High level compatibility layer for multiple asynct
✓ asynclite	○	A small asyncio module for determining appropri

Copy and paste the command

ANACONDA.NAVIGATOR

The screenshot shows the Anaconda Navigator application window. On the left, there is a sidebar with navigation options: Home, Environments, Learning, and Community. The main area displays a list of environments, with 'base (root)' selected. Below this, a terminal window is open, showing the command prompt. The command entered is: `(base) C:\Users\you>conda install pytorch torchvision torchaudio pytorch-cuda=11.6 -c pytorch -c nvidia_`

The screenshot shows a Windows command prompt window titled 'C:\Windows\system32\cmd.exe'. It displays the output of the conda install command, showing a list of packages being installed and their progress. The output is as follows:

Package Name	Size	Progress
cuda-nvprune-11.6.12	151 KB	100%
pytorch-1.13.0	1.23 GB	100%
cuda-cupti-11.6.124	10.0 MB	100%
cuda-nvdisasm-11.8.8	48.9 MB	100%
cuda-nvrtc-11.6.124	71.4 MB	100%
libcufft-10.9.0.58	6 KB	100%
cuda-tools-11.6.2	1 KB	100%
libcusparse-dev-11.7	175.7 MB	100%
libcublas-dev-11.11	375.9 MB	100%
cuda-cuobjdump-11.6	2.5 MB	100%
cuda-libraries-11.6	1 KB	100%
libcufft-dev-10.9.0	144.6 MB	100%
m2-patch-2.7.5	89 KB	100%
m2-msys2-runtime-2.5	3.0 MB	100%
cuda-cudart-dev-11.6	672 KB	100%
cuda-cuxxfilt-11.6.1	165 KB	100%
libnvjpeg-11.9.0.86	4 KB	100%
libcusolver-dev-11.4	94.1 MB	100%
cuda-visual-tools-11	1 KB	100%
cuda-nvprof-11.8.87	1.5 MB	100%
libnvjpeg-dev-11.9.0	1.9 MB	100%
cuda-11.6.2	1 KB	100%
libcusparse-11.7.5.8	13 KB	100%
cuda-toolkit-11.6.2	1 KB	100%

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
Retrieving notices: ...working... done

(base) C:\Users\you>

Verify the installation

The screenshot shows a web browser with multiple tabs, including 'PyTorch' and 'deep learning - any script to test the installation of pytorch'. The active tab is the Stack Overflow page. The page title is 'any script to test the installation of Pytorch', asked 3 years, 1 month ago, modified 6 months ago, and viewed 10k times. The question asks for a script to verify PyTorch installation, specifically checking if CUDA is enabled. The question has 4 answers, sorted by highest score. The top answer, by user288609, provides a script to import torch and check torch.cuda.is_available(). The answer explains that if it returns True, PyTorch is using CUDA, and if it returns False, it's not. The answer also includes a link to a related question: 'How to check if pytorch is using the GPU?'. The page also features a sidebar with navigation links, a 'Stack Overflow for Teams' section, and a 'The Overflow Blog' section.

PyTorch

deep learning - any script to test the installation of pytorch

stackoverflow.com/questions/57977880/any-script-to-test-the-installation-of-pytorch

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any script to test the installation of Pytorch

Asked 3 years, 1 month ago Modified 6 months ago Viewed 10k times

Ask Question

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I have installed the pytorch, and would like to check are there any script to test whether the installation is correct, e.g., whether it can enable CUDA or not, etc?

4

deep-learning pytorch

Share Improve this question Follow

asked Sep 17, 2019 at 15:50

user288609 11.9k 25 77 118

Possible duplicate of [How to check if pytorch is using the GPU?](#) – prosti Sep 18, 2019 at 11:30

Add a comment

4 Answers Sorted by: Highest score (default)

Coming to your 1st question, In your python script.... just add

5

```
import torch
```

if this gives "**ModuleNotFoundError: No module named 'torch'**", then your pytorch installation is not complete

And your 2nd question to check if your pytorch is using cuda,use this

```
torch.cuda.is_available()
```

this will return **True** if your pytorch is using cuda

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answered Sep 20, 2020 at 17:24

Prajot Kuvalekar 3,989 3 17 27

The Overflow Blog

- Introducing the Ask Wizard: Your guide to crafting high-quality questions
- How to get more engineers entangled with quantum computing (Ep. 501)

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- Mobile app infrastructure being decommissioned
- Staging Ground Workflow: Canned Comments
- The Ask Wizard (2022) has graduated

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Linked

415 How do I check if PyTorch is using the GPU?

Related

- 1 Problems of Pytorch installation on Ubuntu 17.10 (GPU)
- 4 CUDA HOME in pytorch installation

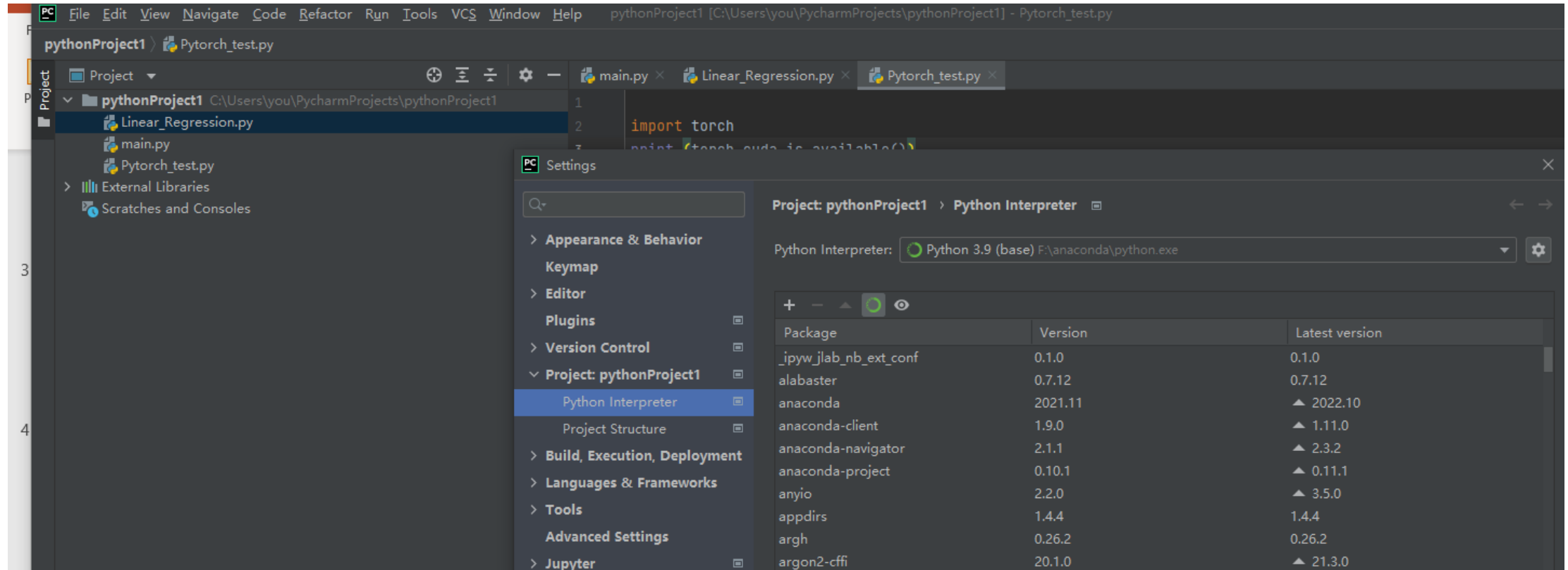
Create a new Python script
Type:
Import torch
torch.cuda.is_avaible()

Note that Mac system can not use Cuda because it does not have a GPU

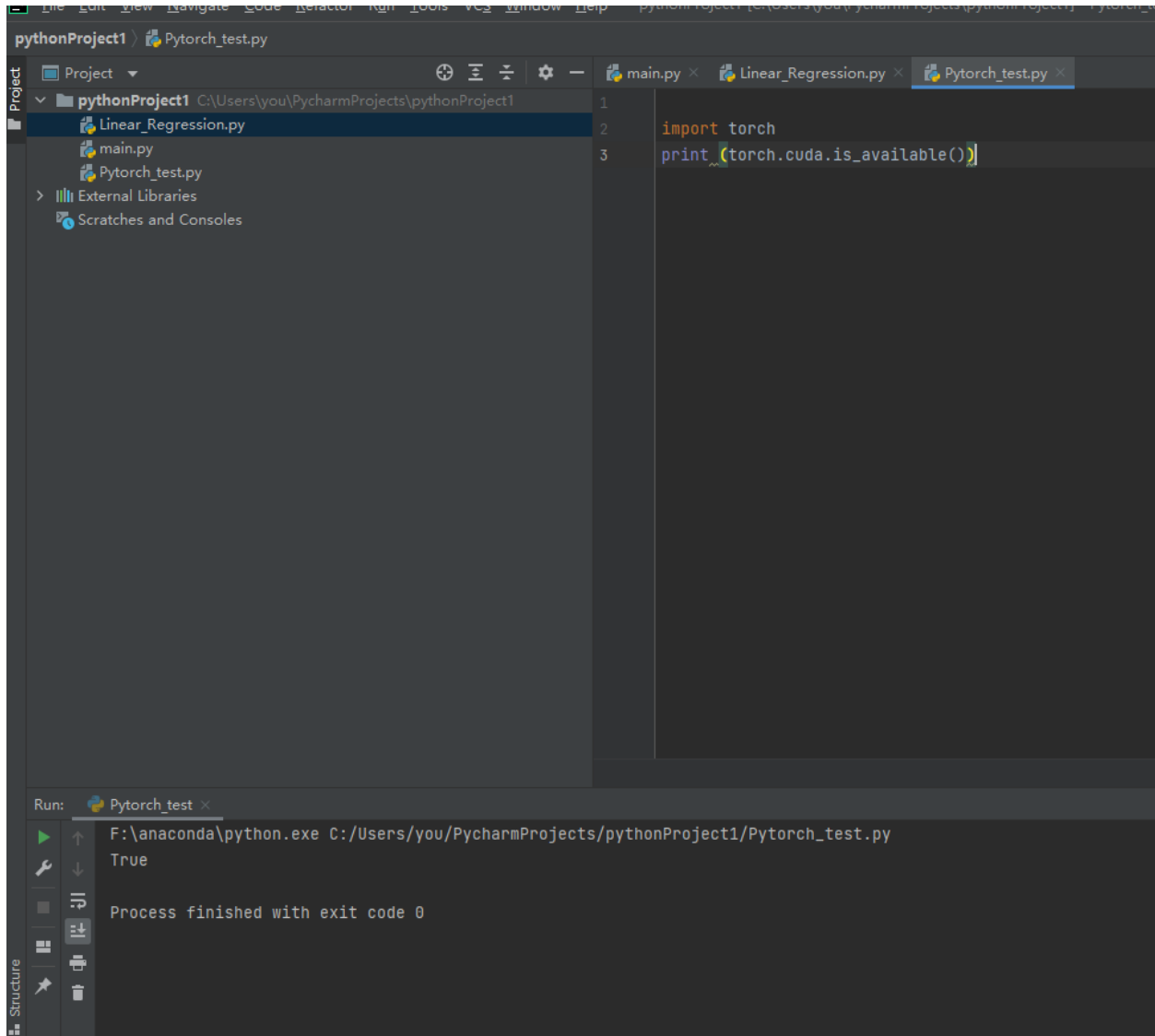
<https://stackoverflow.com/questions/57977880/any-script-to-test-the-installation-of-pytorch>

The interpreter should match with the Anaconda

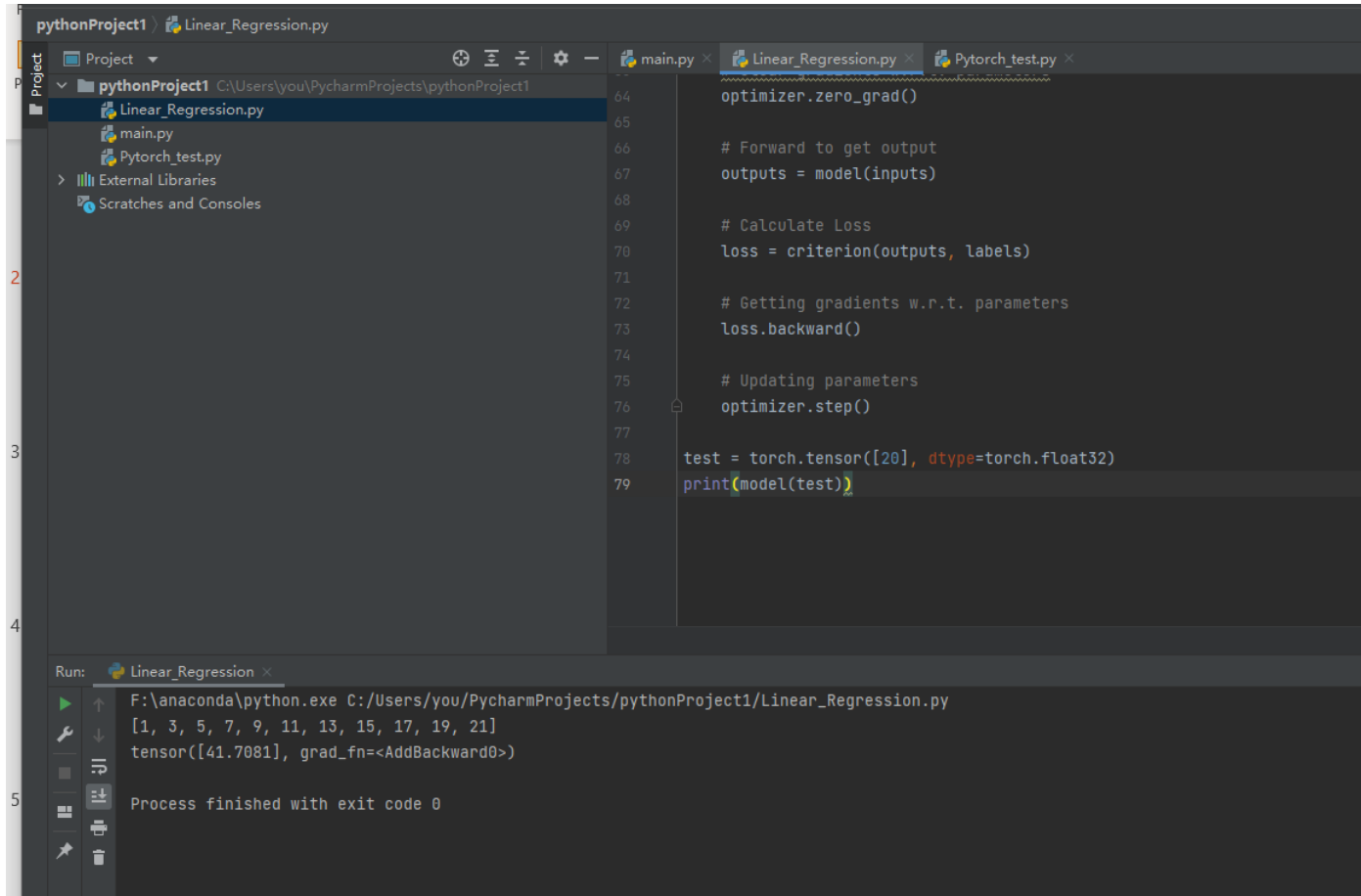
File -> settings



Return True



Run the code



The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure for 'pythonProject1', including files 'Linear_Regression.py', 'main.py', and 'Pytorch_test.py'. The main editor window shows the code in 'Linear_Regression.py'. The code includes training steps: zeroing gradients, forward pass, loss calculation, backward pass for gradients, and parameter updates. A test is performed with a tensor of value 20. The bottom 'Run' console shows the execution output, including the input list [1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21] and the resulting tensor output [41.7081].

```
pythonProject1 > Linear_Regression.py
Project
  pythonProject1 C:\Users\you\PycharmProjects\pythonProject1
    Linear_Regression.py
    main.py
    Pytorch_test.py
  External Libraries
  Scratches and Consoles

64 optimizer.zero_grad()
65
66 # Forward to get output
67 outputs = model(inputs)
68
69 # Calculate Loss
70 loss = criterion(outputs, labels)
71
72 # Getting gradients w.r.t. parameters
73 loss.backward()
74
75 # Updating parameters
76 optimizer.step()
77
78 test = torch.tensor([20], dtype=torch.float32)
79 print(model(test))

Run: Linear_Regression x
F:\anaconda\python.exe C:/Users/you/PycharmProjects/pythonProject1/Linear_Regression.py
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21]
tensor([41.7081], grad_fn=<AddBackward0>)

Process finished with exit code 0
```

Test when $x = 20$