Python programming language

Week 1. Python programming environment

Alisher Ismailov
Lecturer

Department of Information technology
Andijan Branch of Tashkent Financial Institute
Email: alisherismailov534@gmail.com

Python dasturlash tili

1-Mavzu. Python dasturlash muhiti

Ma’ruzachi: Alisher Ismoilov

Axborot texnologiyalari kafedrasi
Toshkent moliya instituti Andijon filiali

Elektron pochta: alisherismailov534@gmail.com

1-Mavzu. Python dasturlash muhiti

Reja:

1. Python dasturlash tili
2. Integrallashgan dasturlash muhiti
3. Python dasturlash muhitini yaratish
4. Anaconda distirbutorini windowsga o‘rnatish.
5. Python dasturlash tilida birinchi dasturni yaratish

Python dasturlash tili

Python dasturlash tili g‘oyasi 1989 yilda uning yaratuvchisi Guido van Rossum tomonidan paydo bo‘lgan. Rossum ABC tilining barcha yaxshi xususiyatlarini va kengaytirilishi va istisnolardan foydalanish kabi yangi kerakli xususiyatlarni birlashtirgan yangi tilni ishlab chiqish ustida ish boshlagan. Python 1.0 1994 yilda ishlab chiqarilgan; u Modula-3 dan modul tizimini oldi, Amoeba operatsion tizimi bilan o‘zaro aloqada bo‘lish imkoniyatiga ega va funksional dasturlash vositalarini o‘z ichiga oladi.

Python dasturlash tili

2000-yilda Python dasturlash tilining asosiy ishlab chiqish guruhi Beopen.com saytiga ko‘chdi va 2000-yil oktyabr oyida Python 2.0 ko‘plab improvizatsiyalar, jumladan, axlat yig‘uvchi va Unicode-ni qo‘llab-quvvatlash bilan yangilandi.

2008 yil dekabr oyida Python 3.0 versiyasi chiqdi, u orqaga qarab moslashishdan voz kechdi va takrorlanuvchi konstruksiyalar va modullarni oldini olish uchun yangi dizaynga ega bo‘ldi. Python dasturlash tili hozirgi kunda hali ham ishlab chiquvchilarga obyektga yo‘naltirilganlik va funksional dasturlash variantlarini taklif qiluvchi ko‘p paradigmali dastrulash tili hisoblanadi.

Python dasturlash tili

Python dasturlash tili bugungi kunda bir nechta ilovalarga ega, jumladan Jython, Java Virtual Machine uchun Java tilida yozilgan; Umumiy til infratuzilmasi uchun C# tilida yozilgan IronPython va RPython tilida yozilgan va C tiliga tarjima qilingan PyPy versiyasi. Shuni ta'kidlash shoizki, C tilida yozilgan va Python Software Foundation tomonidan ishlab chiqilgan CPython Pythonning standart va eng mashhur ilovasi hisoblanadi. 2015-yil fevral oyida ishlab chiqarilgan Python 3.4.3 boshqa yangi xususiyatlar qatorida Unicode qo‘llab-quvvatlashida keskin yaxshilanishni taklif etadi.

Python dasturlash tili obyektga yo‘naltirilgan dasturlash tili (OOP)ning asosiy tushunchalari

Sinf

Obyektlar

Polimorfizm

Inkapsulyatsiya

Vorislik (inherentence)

Ma’lumotlarni abstraktsiya qilish

Integrallashgan dasturlash muhiti (integrated development environment IDE)

IDE dasturiy ta'minotni ishlab chiqish vositasi bo‘lib, asosan dasturchilar tomonidan dasturlar yoki dasturiy ta’minotni yozish va sinab ko‘rish uchun foydalaniladigan dastur hisoblanadi. Python dasturlash tilidan foydalanish uchun bir qancha IDElar mavjud. Quyidagi jadvalda IDElarni nomi keltirilgan.

Integrallashgan dasturlash muhiti (integrated development environment IDE)

IDE nomi	Sistemalar
Thonny	Windows, Linux, Mac OS X
Komodo	Windows/Linux/Mac OS X
LiClipse	Linux/Mac OS X/Windows
NetBeans	Linux, Mac, Solaris, Windows
PyCharm	Linux/Mac OS X/Windows
Python for VS Code	Linux/Mac OS X/Windows
KDevelop	Linux/Mac OS X/(Windows)
PyDev	Eclipse
Wing	Windows, Linux, Mac OS X
PyScripter	Windows
Spyder	Windows/Linux/macOS
IDLE	Windows/Linux/Mac OS X/
IdleX	Windows/Linux/Mac OS X/
µ.dev	Windows
Pyzo	Windows/Linux/Mac OS X
PythonToolkit	Windows/Linux/Mac OS X
PyStudio	Windows/Linux/Mac OS X
Python Tools for Visual Studio	Windows
Exedore	Mac OS X

Python dasturlash muhitini yaratish

Python dasturlash tilidan foydalanish uchun uning dastur muhitini yaratib olishimiz kerak. Dastur muhitini yaratishda sodda va ishlatish oson bo‘lgan Anaconda distributeridan foydalanish tavsiya etiladi.

Python dasturlash muhitini yaratish

- **Anaconda -** bu dasturiy paketlar menejeri, dastur muhit menejeri va Python dasturlash tili distributori hisoblanadi.
- Anaconda disributorini afzallikllaridan biri bu Anaconda disributori tayyor dasturiy paketlar bilan birga komputerga o‘rnaydi. Bu dasturiy paketlar katta loyihalar yaratilganda qo‘llaniladi. Bunday dasturiy paketlarni bir qanchasini sanab o‘tish mumkin, numpy, scikit-learn, scipy, panda va boshqalar. Anacondani o‘rnatganingizdan so‘ng sizga qo‘shimcha paketlar kerak bo‘lsa, ushbu paketlarni o‘rnatish uchun Anaconda paket menejeri, conda yoki pipdan foydalanishingiz mumkin. Bu jarayonni foydasi, bir nechta paketlar orasidagi bog‘liqlikni siz o‘zingiz boshqarishingiz shart emas Anaconda avtomatik tarzda boshqarib komputeringizga o‘rnatadi.
- Biz Python dasturlash tilini Jupyter Notebook IDEsi orqali o‘rganamiz. Jupyter Notebook IDE Anaconda distributori bilan birga o‘rnaydi.

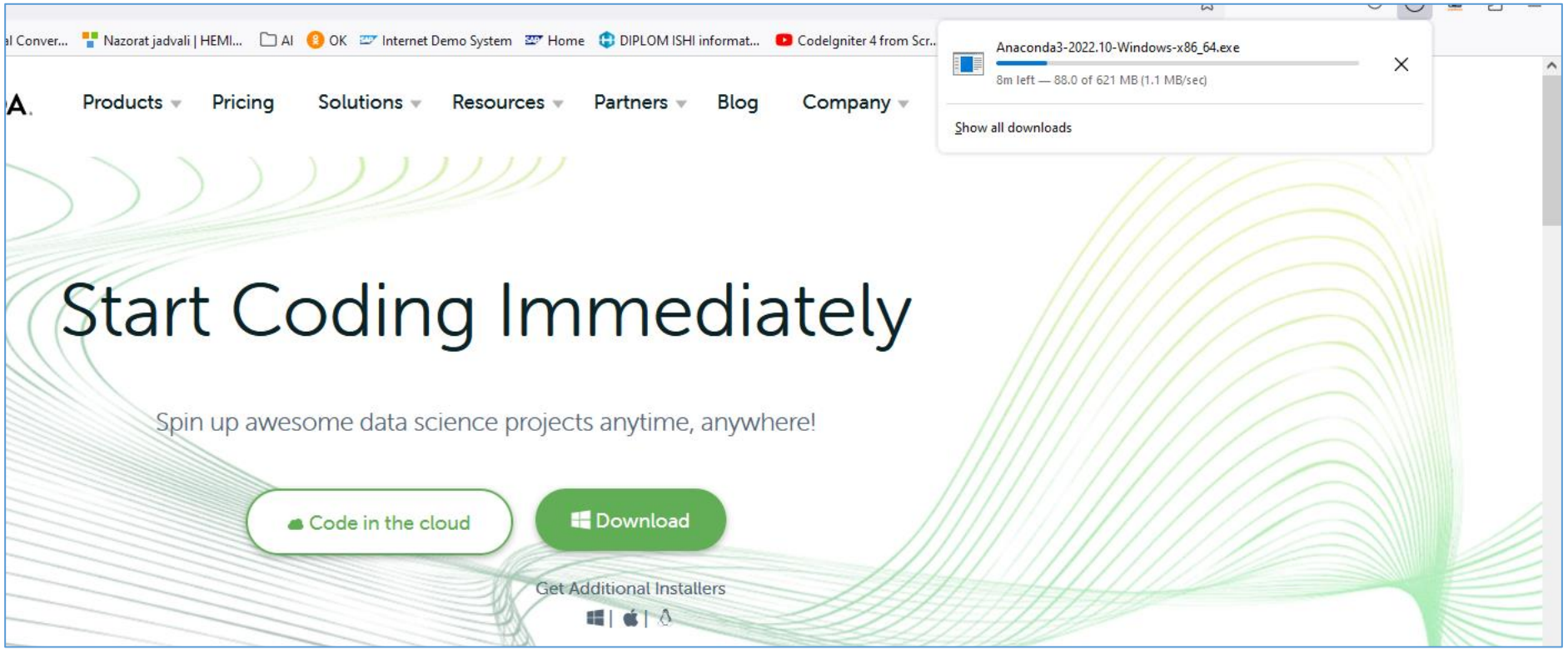
Anaconda distirbutorini windowsga o‘rnatish.

Anaconda veb-saytiga kiring (https://www.anaconda.com/) va suratda ko‘rsatilgandek grafik o‘rnatuvchisini (Download) ustiga bir marta bosing.

Anaconda distirbutorini windowsga o‘rnatish.

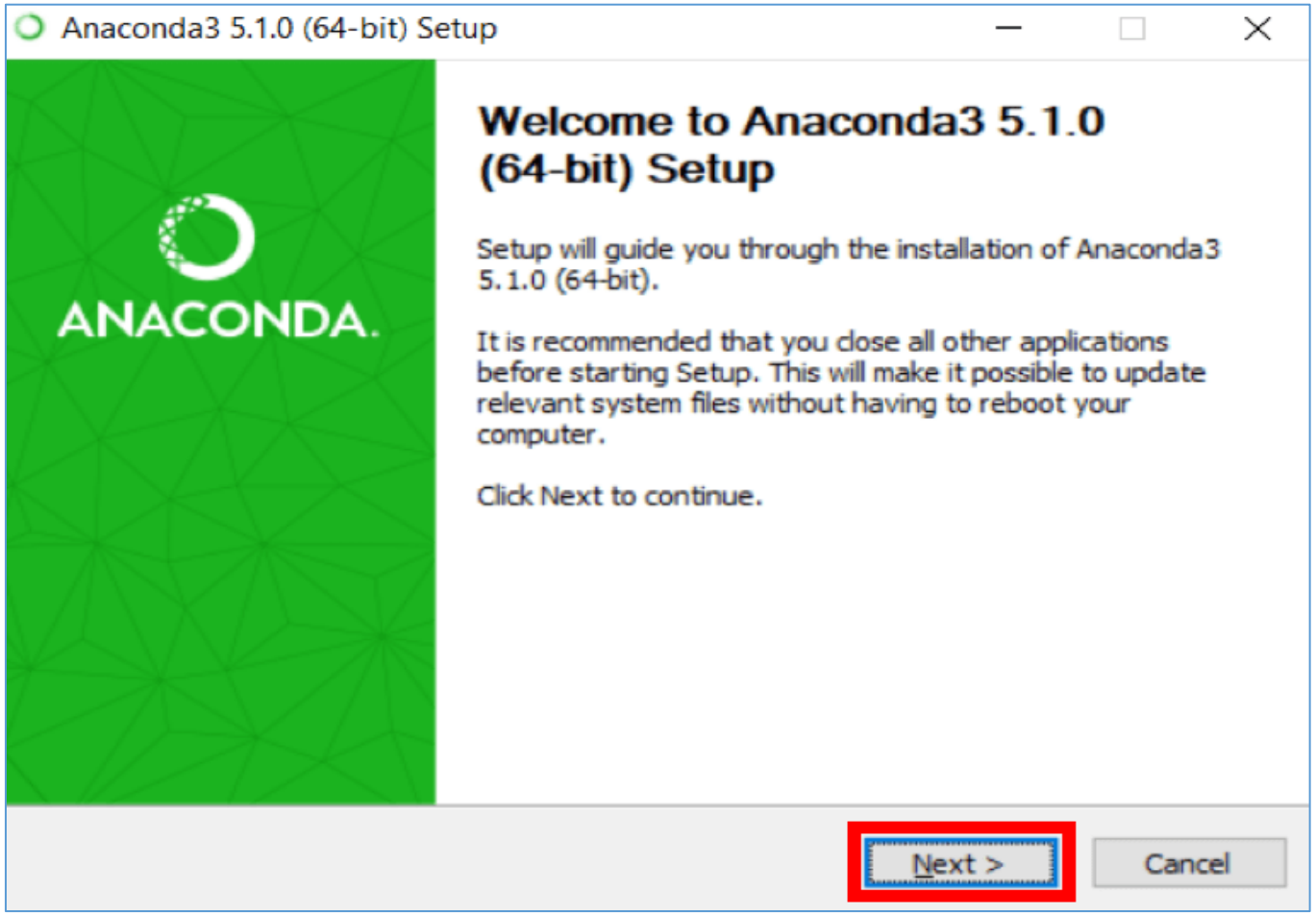
Anaconda distirbutorini windowsga o‘rnatish.

Yuklab olish joyini toping va ustiga ikki marta bosing.



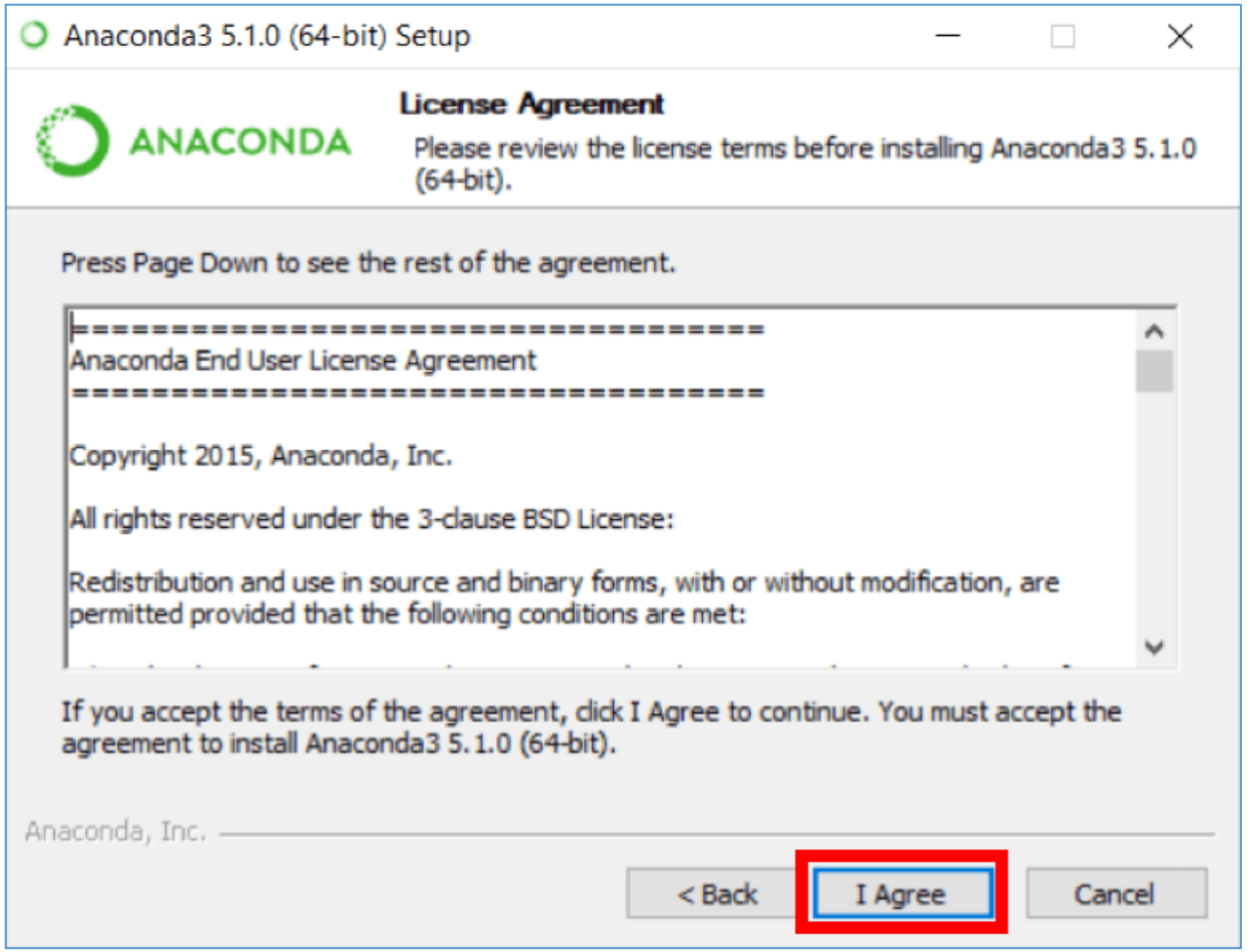
Anaconda distirbutorini windowsga o‘rnatish.

Quyidagi ekran paydo bo‘lganda, Keyingi (Next) tugamasini bosing.



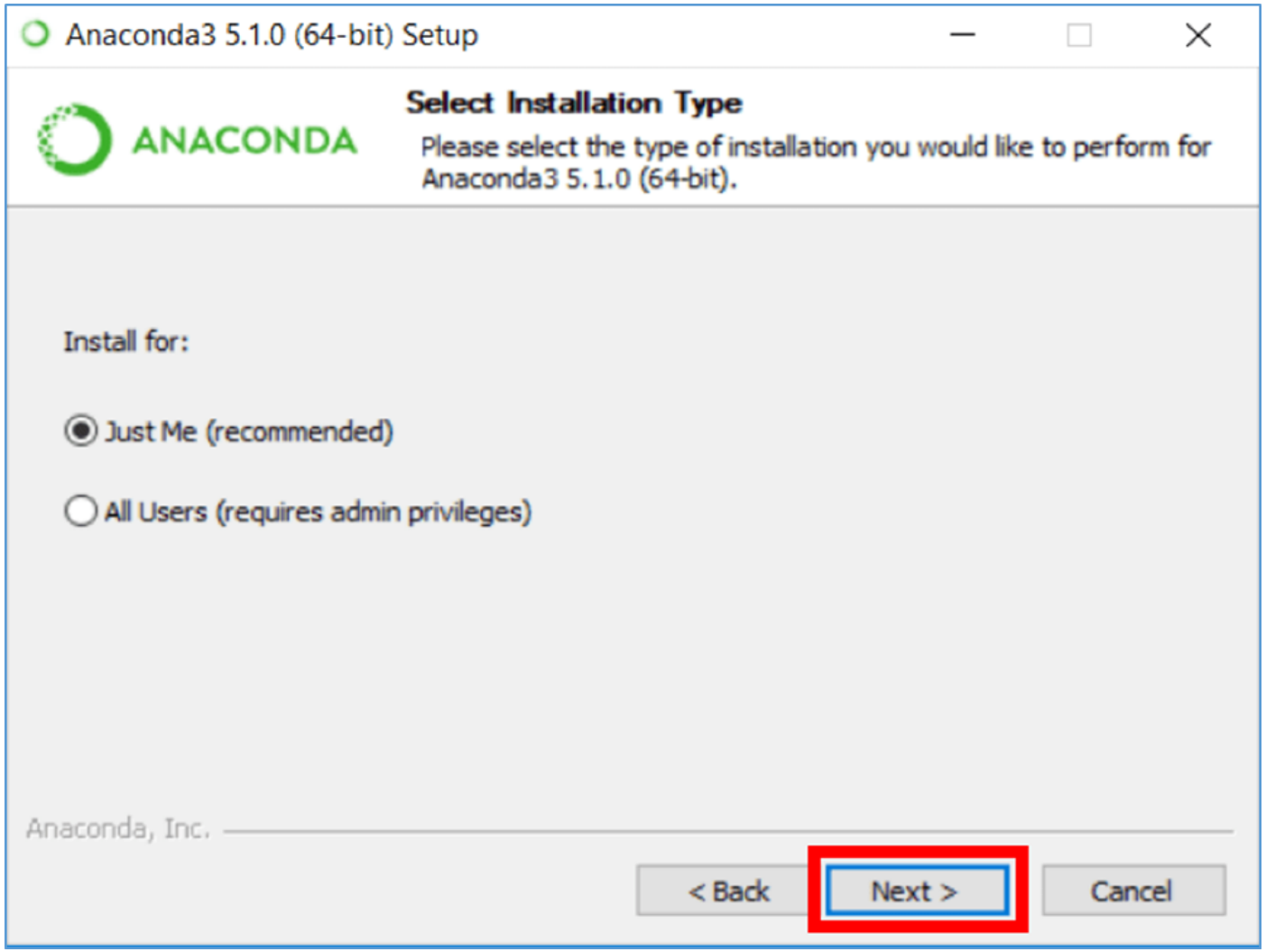
Anaconda distirbutorini windowsga o‘rnatish.

Litsenziya shartnomasini o‘qing va "Roziman" (I Agree) tugmasini bosing.



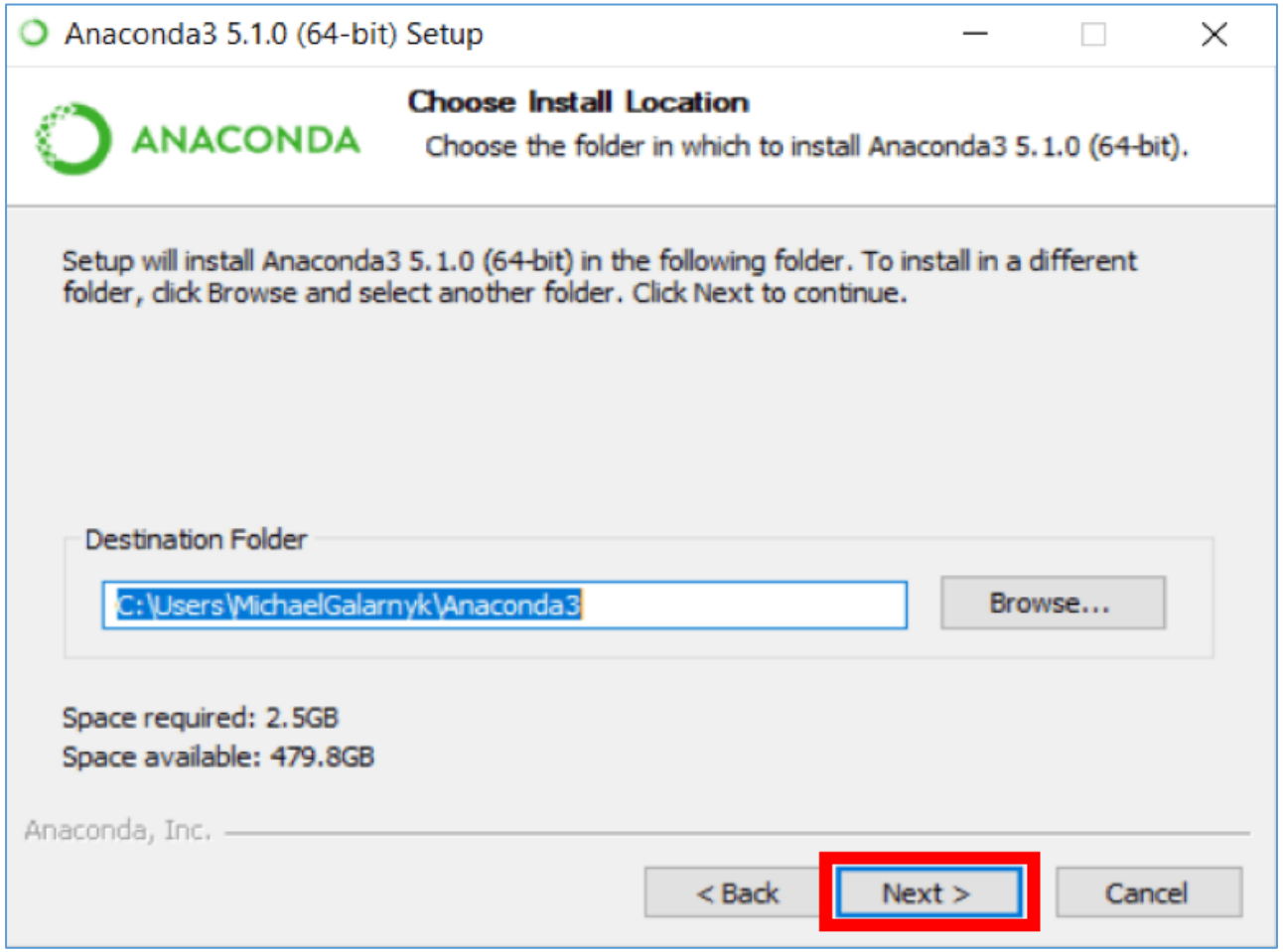
Anaconda distirbutorini windowsga o‘rnatish.

Keyingi tugmasini (Next) bosing.



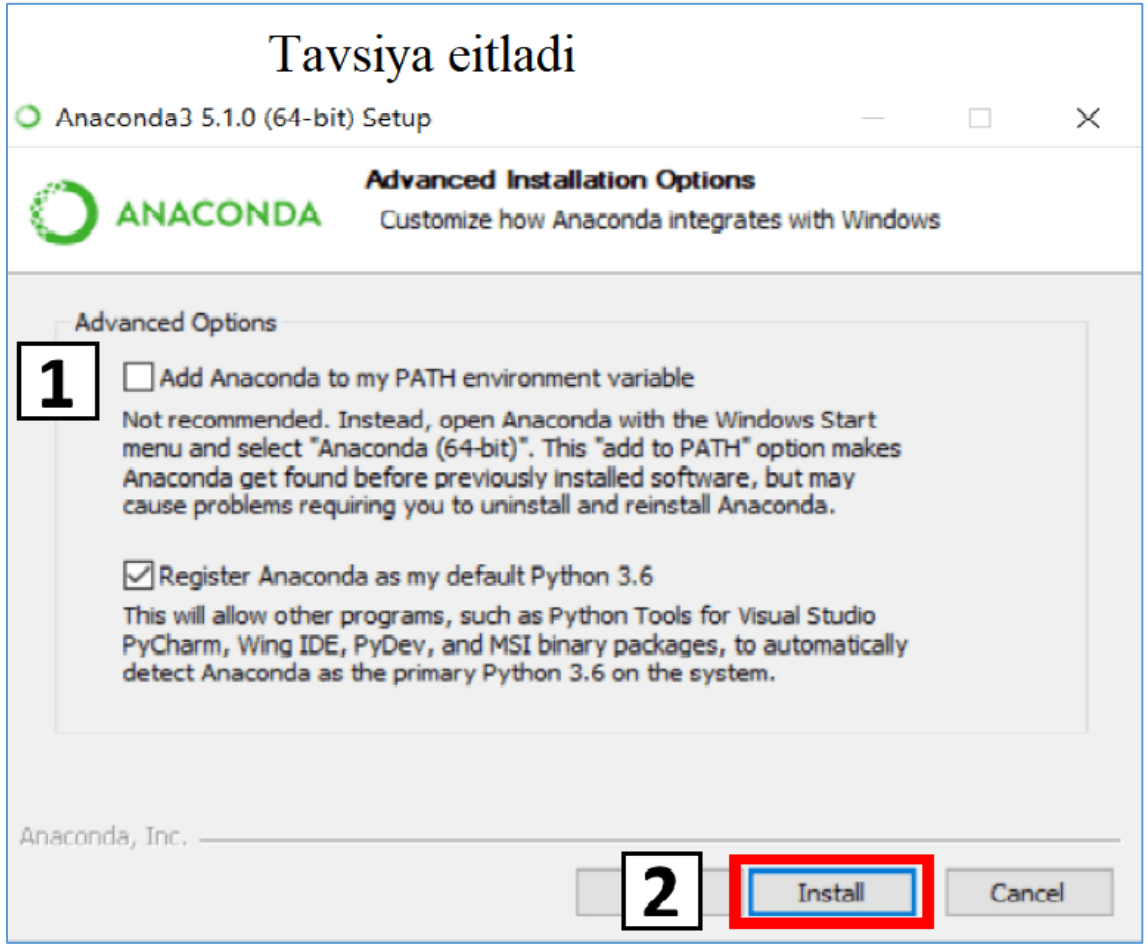
Anaconda distirbutorini windowsga o‘rnatish.

O‘rnatish joyingizga e’tibor bering va "Keyingi" (Next) tugmasini bosing.



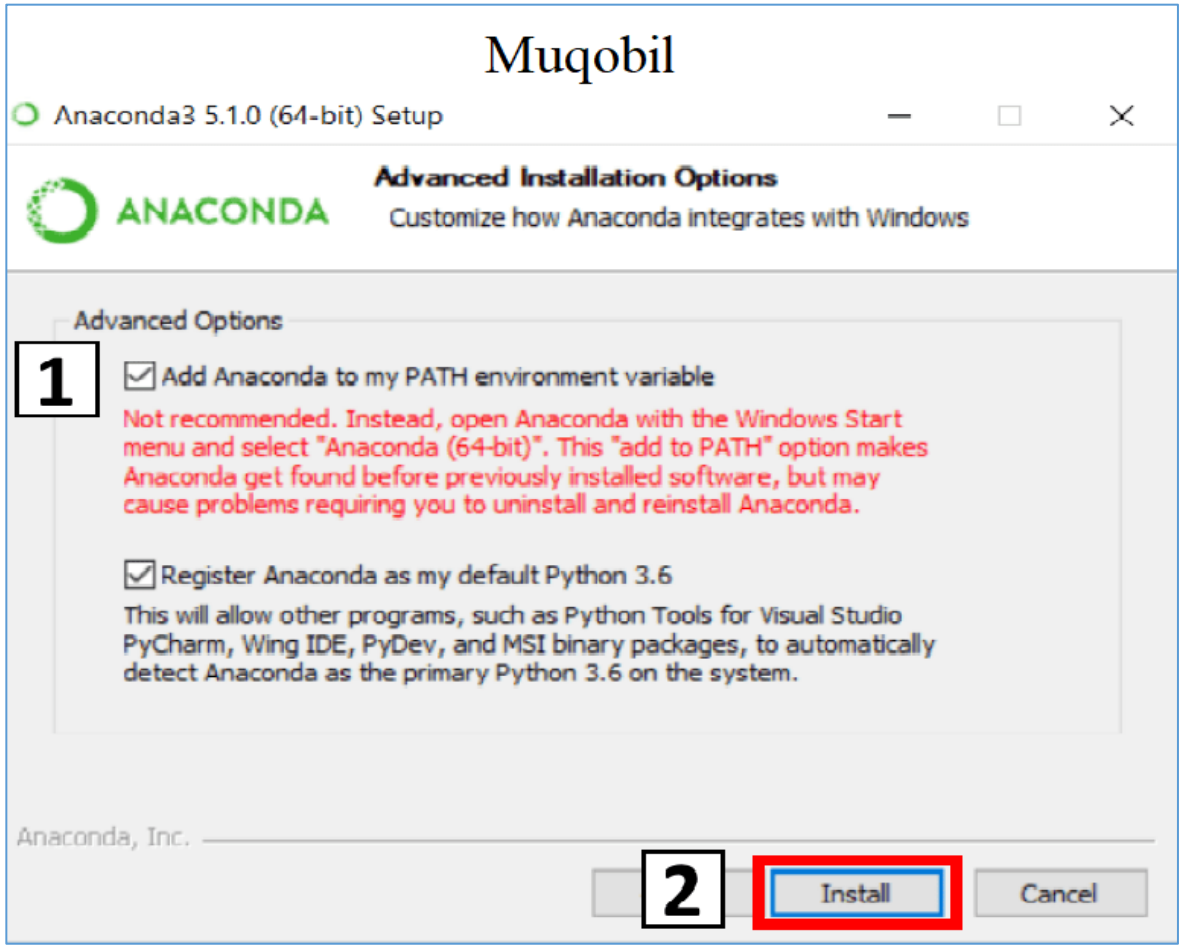
Anaconda distirbutorini windowsga o‘rnatish.

Tavsiya etilgan holatda O‘rnatish (Install) tugamasini bosing.



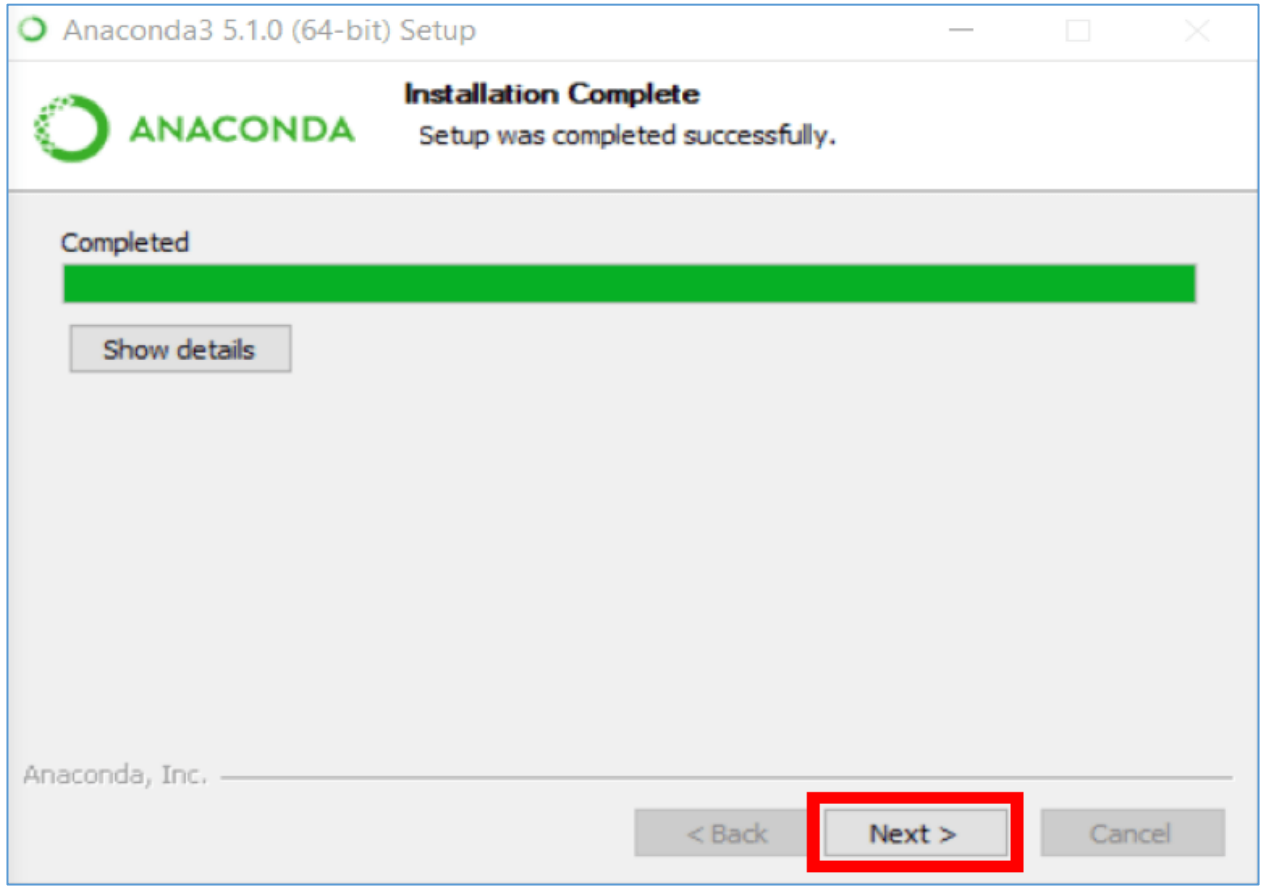
Anaconda distirbutorini windowsga o‘rnatish.

Tavsiya etilgan holatda O‘rnatish (Install) tugamasini bosing.



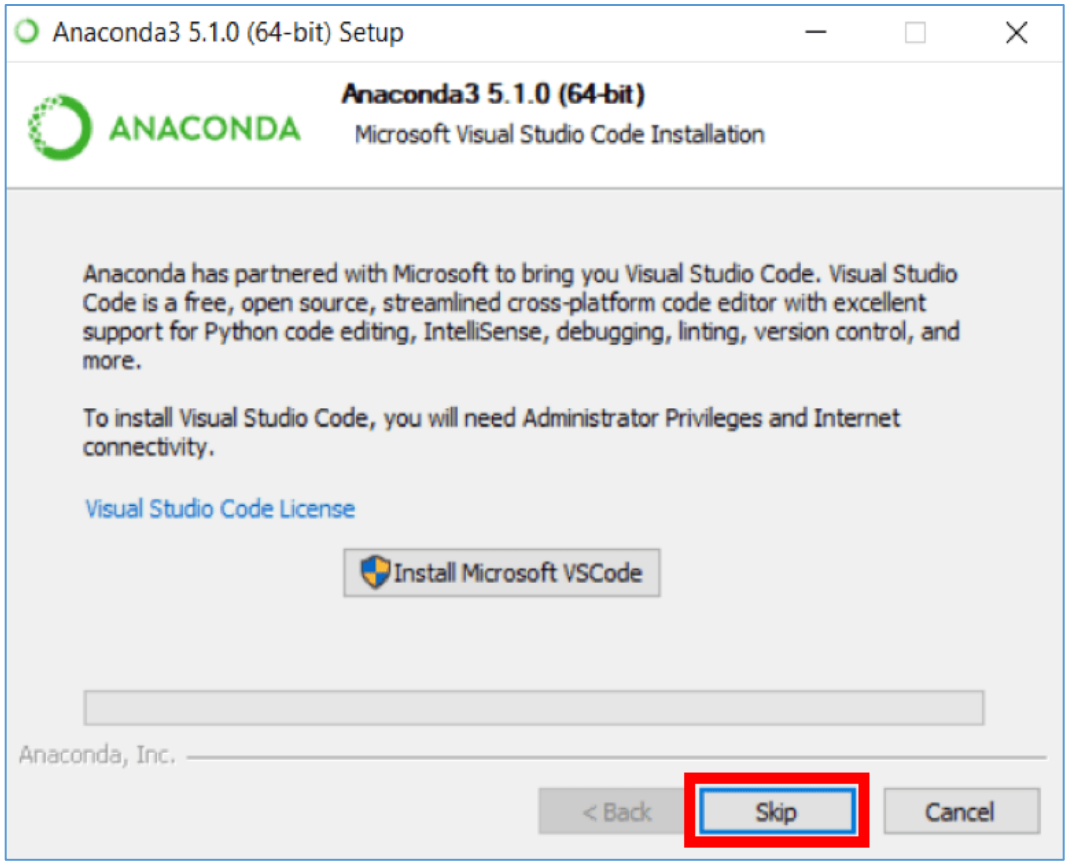
Anaconda distirbutorini windowsga o‘rnatish.

Keyingi (Next) tugamasini bosing



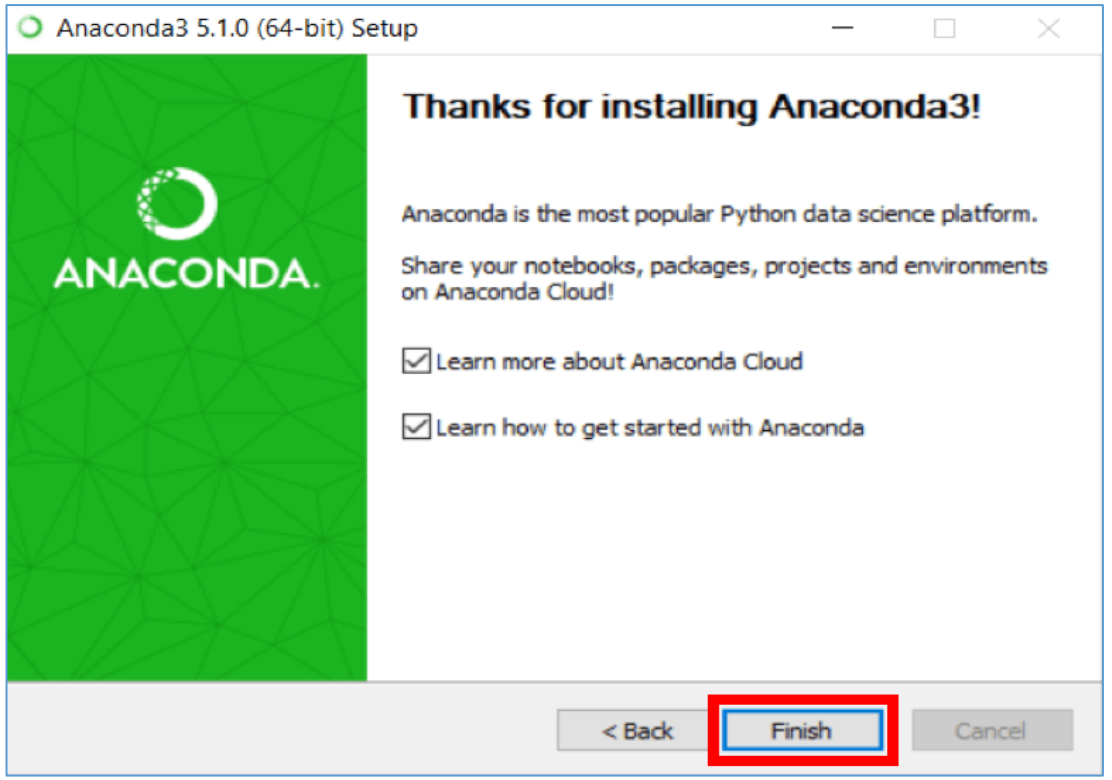
Anaconda distirbutorini windowsga o‘rnatish.

Agar xohlasangiz, Microsoft VSCode dasturini ham o‘rnatishingiz mumkin, bu ixtiyoriy, biz o‘rnatmaymiz. Skip tugamasini bosamiz.



Anaconda distirbutorini windowsga o‘rnatish.

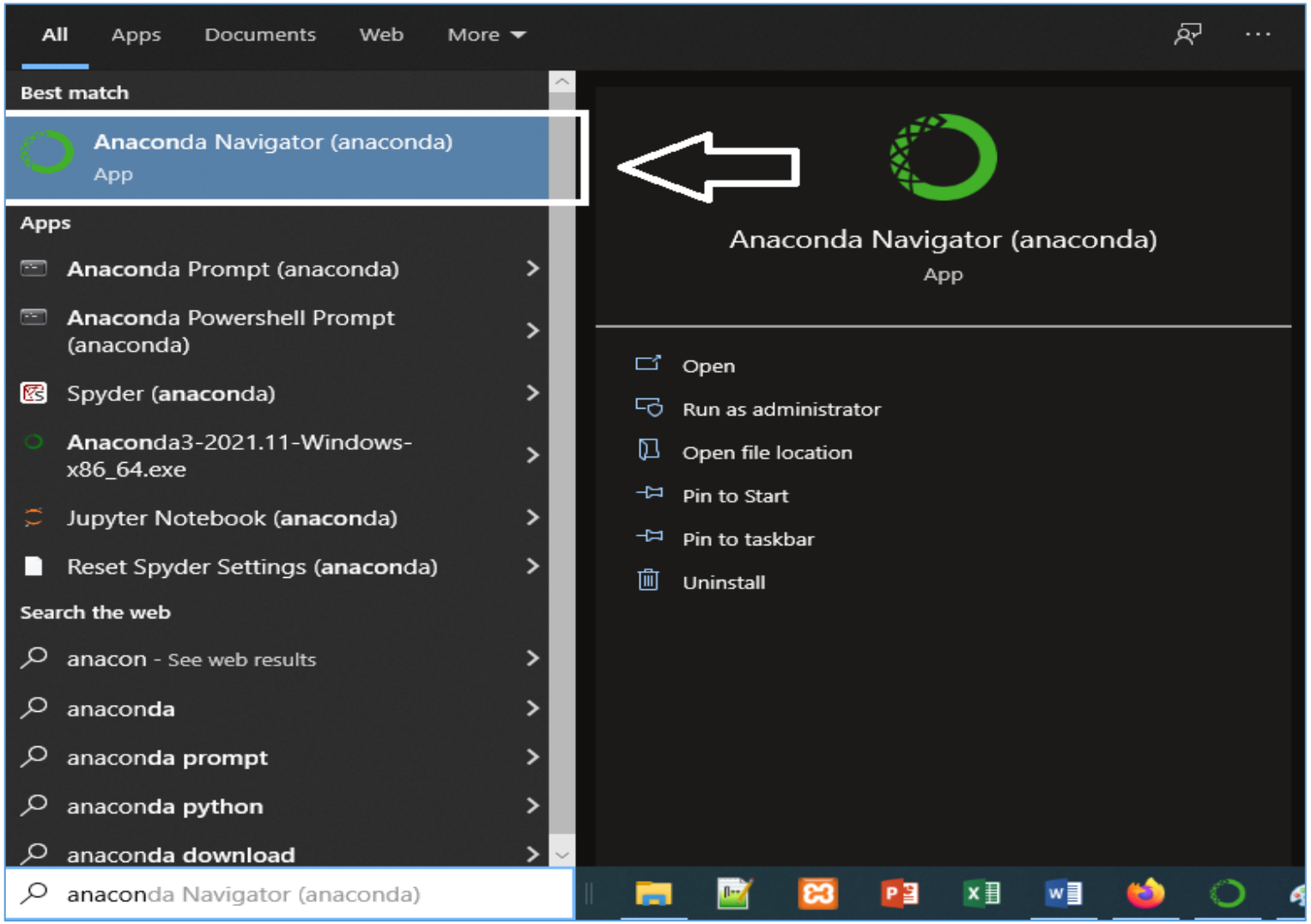
Tugadi (Finish) tugmasini bosing.



Anaconda disributori komputerga o‘rnadi. Keyingi bo‘limda Jupyter Notebook IDEsi orqali Python dasturlash tilida birinchi dasturimizni yozib o‘rganamiz.

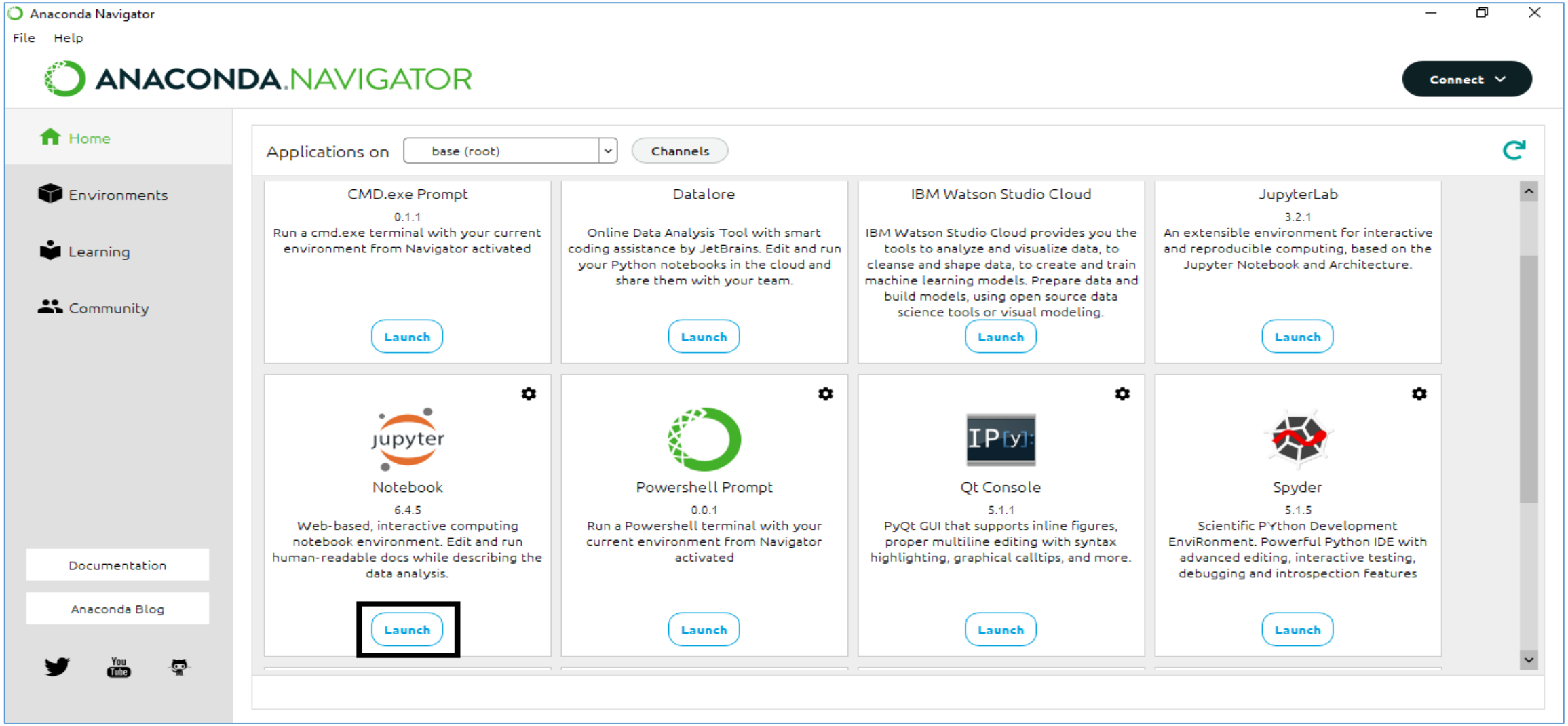
Python dasturlash tilida birinchi dasturni yaratish

Windows sistemasida “Start” tugmasini bosib, Anaconda Navigator dasturini ishga tushiring.



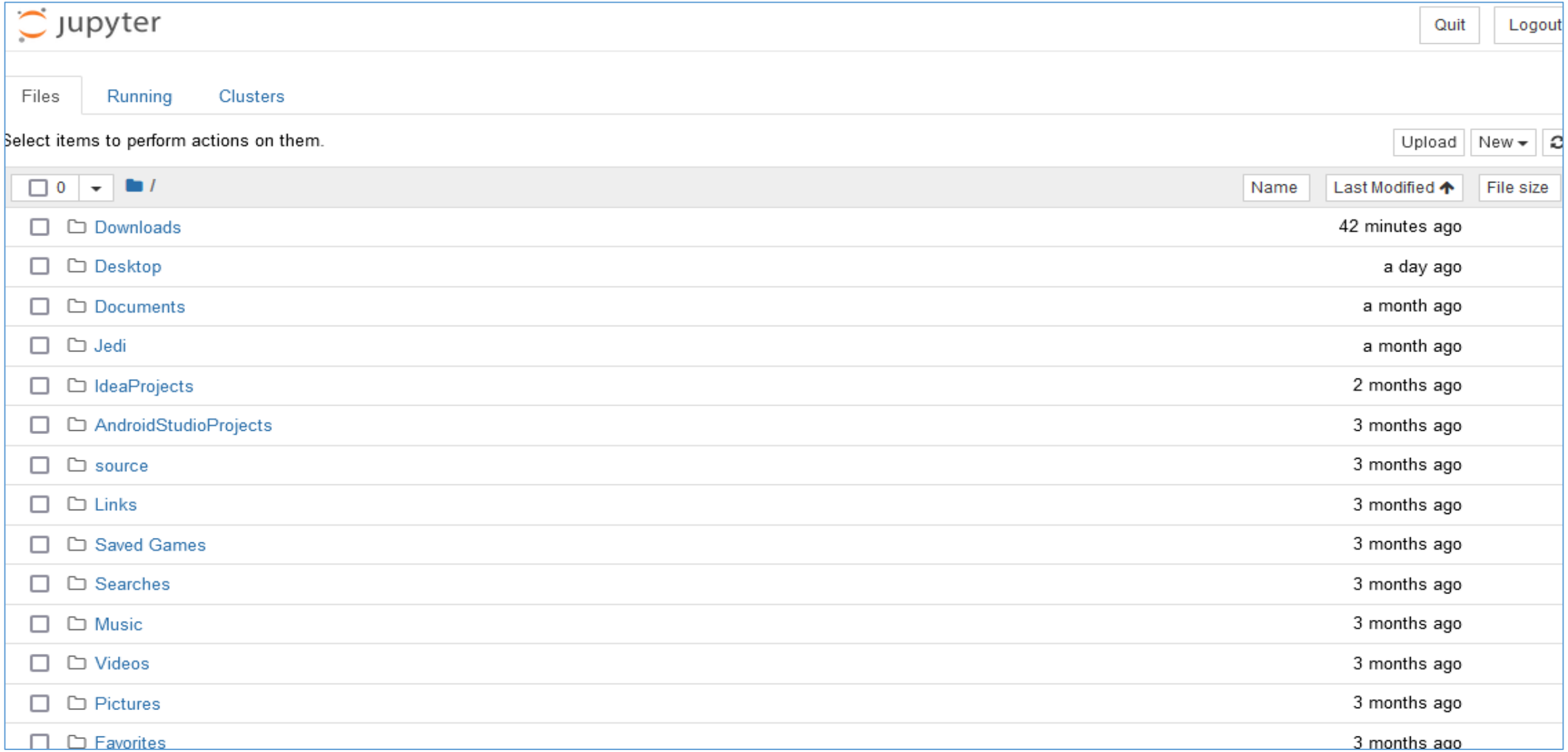
Python dasturlash tilida birinchi dasturni yaratish

Anaconda Navigator dasturi ochilgan joydan Jupyter Notebook dasturini ishga tushiring.



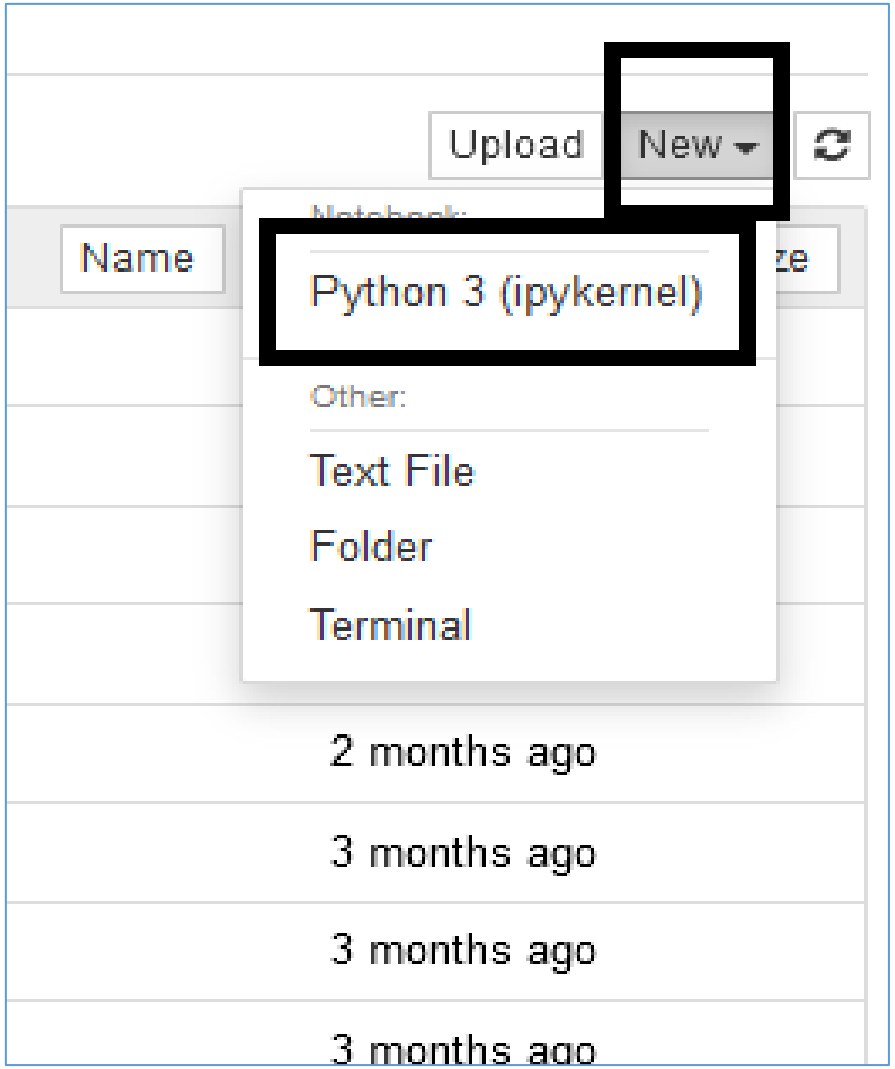
Python dasturlash tilida birinchi dasturni yaratish

Jupyter Notebook dasturi ko‘rinishi. Browserda ochiladi. Pastdagi suratda ko‘rsatilgan.



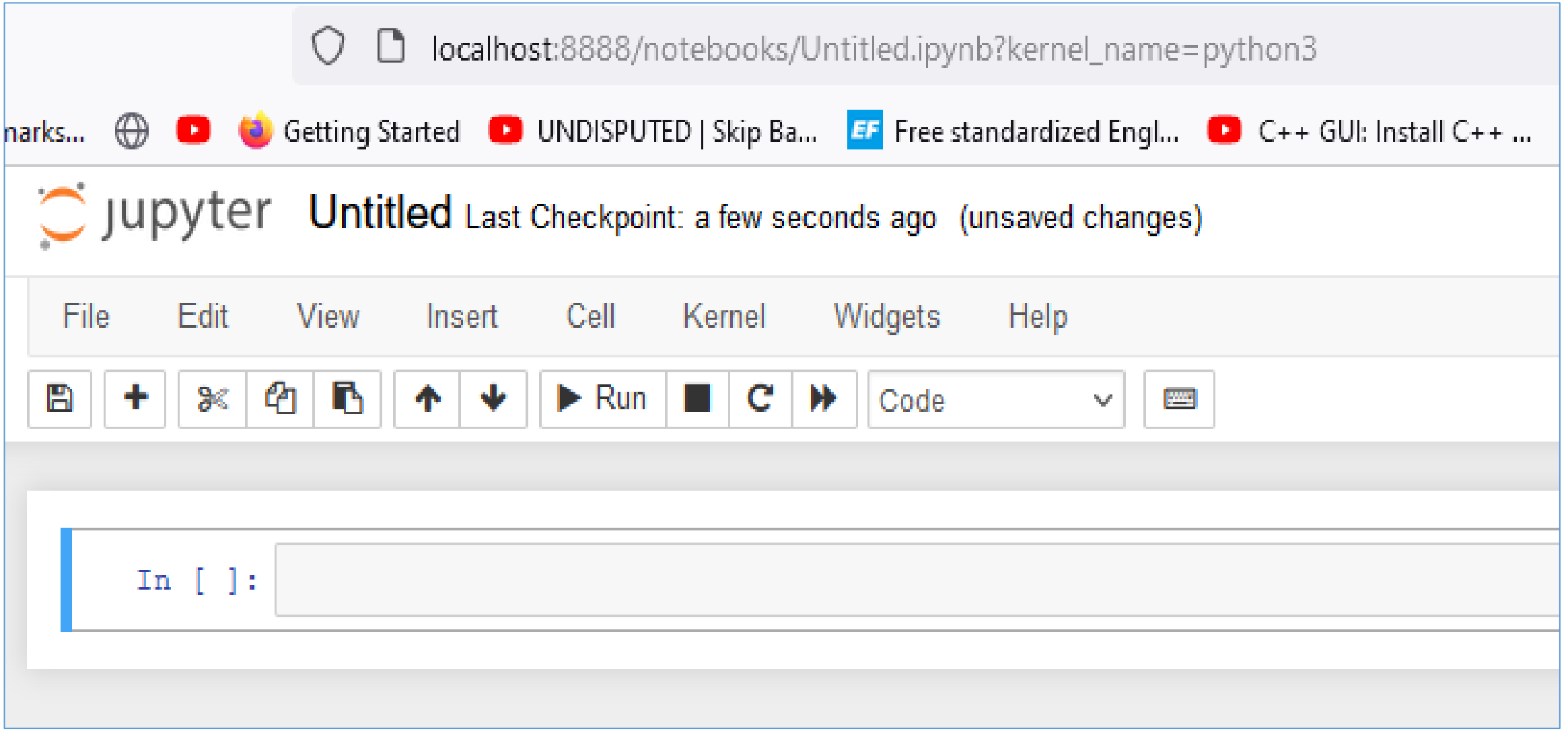
Python dasturlash tilida birinchi dasturni yaratish

- Python faylini ochish uchun o‘ng tomondagi ‘new’ tugamasini bosing, va “Python 3” tugamasini bir marta bosing.



Python dasturlash tilida birinchi dasturni yaratish

Python fayli yaratildi. Birinchi dasturimizni yozishimiz mumkin.



Python dasturlash tilida birinchi dasturni yaratish

- Birinchi dasturimizda ekranga ism va familyani chop etishni o‘rganamiz. Python dasturida ekranga natijani chop etish uchun ‘**print()**’ funksiyasidan foydalaniladi. Suratda ko‘rib turgan birinchi dasturimizda ham

```
print(“Ismailov Alisher”)
```

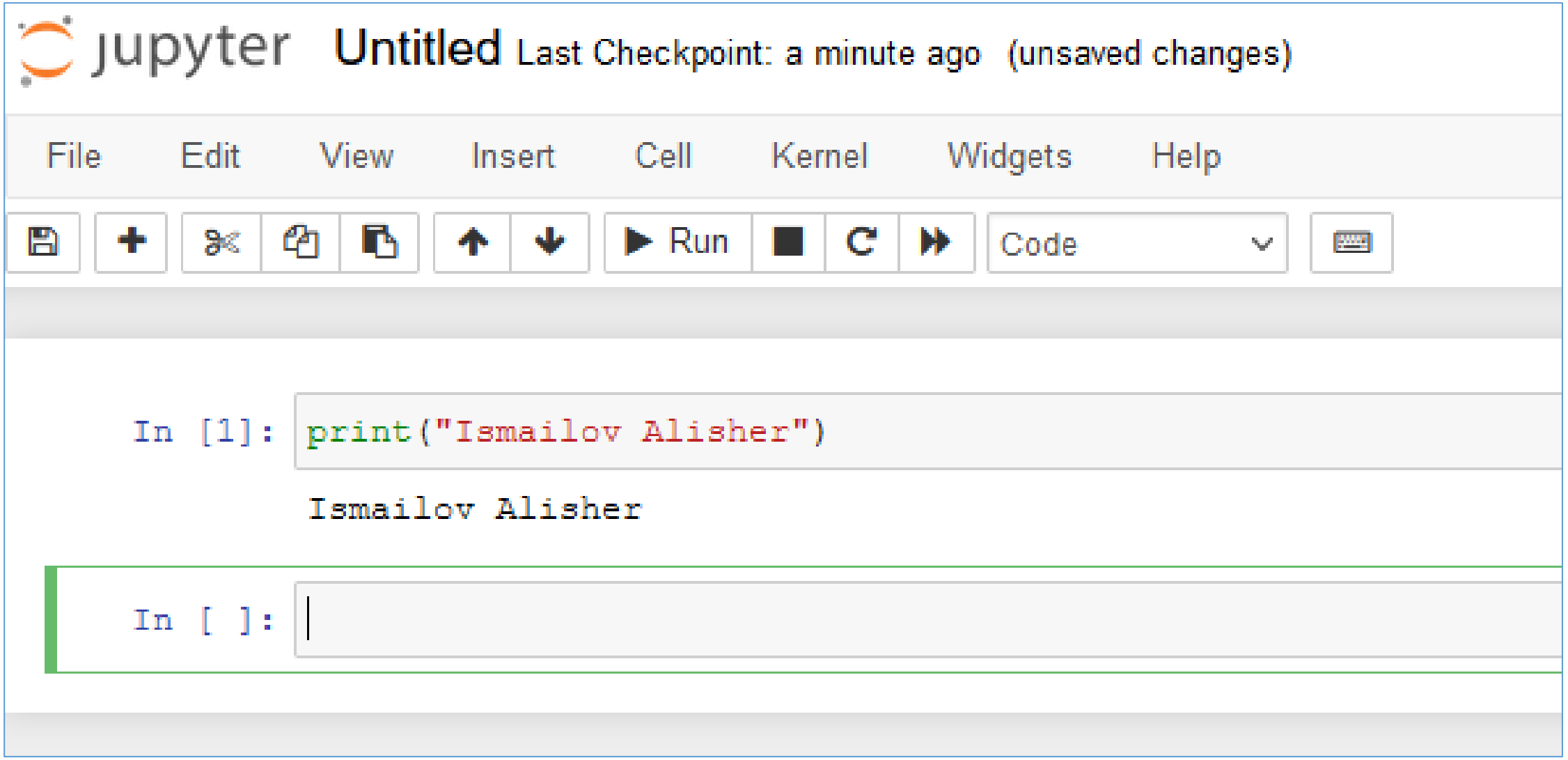
Python dasturlash tilida birinchi dasturni yaratish

- Birinchi dasturimizda ekranga ism va familyani chop etishni o‘rganamiz. Python dasturida ekranga natijani chop etish uchun ‘**print()**’ funksiyasidan foydalaniladi. Suratda ko‘rib turgan birinchi dasturimizda ham

print(“Ismailov Alisher”)

- print funsksiyasidan foydalangan holda ism va familyani ekranga chop etdik. Agar ism familyangiz suratda ko‘rsatilgandek ekranda ko‘ringan bo‘lsa tabriklayman, siz Python dasturlash tilida birinchi dasturingizni yaratdingiz.

Python dasturlash tilida birinchi dasturni yaratish



Python dasturlash tilida boshlang’ich dasturlar

print(“Qiziqish: kitob o`qish”)

Python dasturlash tilida boshlang’ich dasturlar

print(“Manzil: Andijon”)

Python dasturlash tilida boshlang’ich dasturlar

print(“Yosh: 32”)

Foydalanilgan adabiyotlar

1. Mastering Object-Oriented Python: Build powerful applications with reusable code using OOP design patterns and Python 3.7, 2nd Edition, Steven F. Lott, Packt Publishing (June 14, 2019)

2. Learning Python, 5th Edition Fifth Edition, Mark Lutz , O'Reilly Media, June 12, 2013

3. Python Programming for Beginners: The Ultimate Guide for Beginners to Learn Python Programming: Crash Course on Python Programming for Beginners, AMZ Publishing, Independently published (July 13, 2021)

4. https://www.python.org/

5. https://www.w3schools.com/

6. https://www.codecademy.com/catalog/language/python

7. https://realpython.com/

8. https://www.anaconda.com/

E’tiboringiz uchun rahmat!