

PYTHON DASTURLASH TILIDA MATNLI XABARLARNI AUDIO XABAR KO'RINISHDA HOSIL QILIB BERUVCHI ALGORITM HOSIL QILISH TASNIFI

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Hayot choraklardan iborat emas, unda ta’til, sen bilan alohida ishlaydigan muallim yoki rahbar bo‘lmaydi. Vazifalarni shaxsan o‘z kuching bilan va o‘z vaqtida bajarishing shart.

Life does not consist of quarters, there are no vacations, there is no teacher or leader who works with you individually. You must perform the tasks personally with your own effort and on time.

(Bill Gates)

Kalit so‘zlar: PyCharm, Pywin32, Pypiwin32, Pyttsx3, pip.

Python dasturlash tilining imkoniyatlari shu qadar kengki, undagi imkoniyatlardan foydalanib ko‘plab amaliy masalalarni yechish mumkin.

Jumladan, Data science, Deep learning, Machine learning va AI dan foydalangan holda sun’iy intellekt hosil qilish mumkin.

Ushbu maqola orqali biz matnli ma'lumotlarni audio xabar ko'rinishida tayyorlab beruvchi kutubxonalar bilan ishlaymiz va natijalari bilan tanishtirib o'tamiz, ya'ni Python package (pyaudio, SpeechRecognition, pyttsx3, gTTS, Wikipedia, web browser) va matn ko'rinishidagi ma'lumotlarni audio ko'rinishda taqdim etish algoritmini ko'rib chiqamiz.

Biz Python dasturlash tilidan foydalanganda maxsus kutubxonalardan samarali foydalanish mumkun ekanligini bilamiz. Xuddi shunday kutubxonalar ovozni matnga, matnni esa ovozga aylantirish uchun ham mavjud. Buning uchun quyidagi algoritmni bajaramiz: Ilk qadam Python dasturlash tilidagi kerakli kutubxonalarni chaqirib olamiz, ular quyidagilar:

1) *pywin32*

2) *pypiwin32*

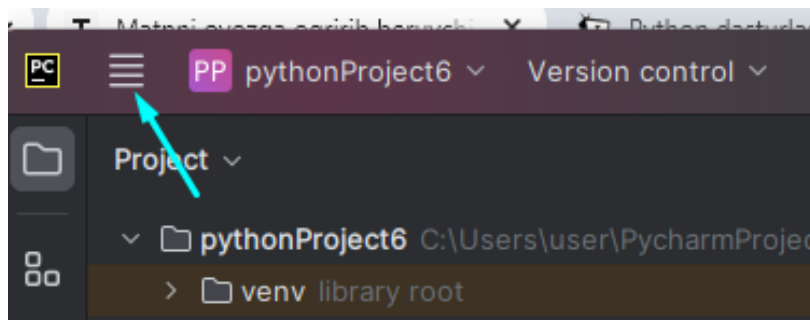
3) *pyttsx3*

Demak, paycharmga kiramiz(1-rasm)



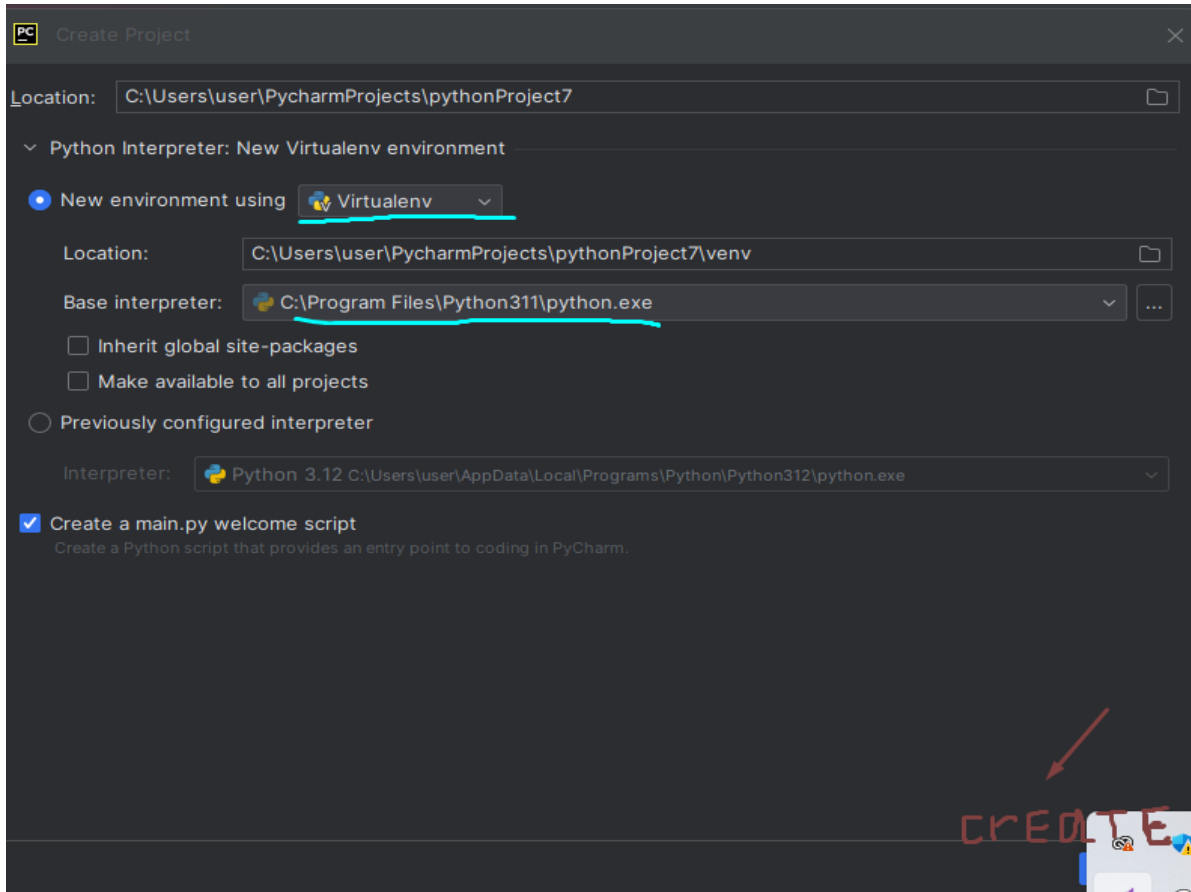
1-rasm

ilovaning yuqori chap qismidan quyidagi bo'limni tanlaymiz(2-rasm)



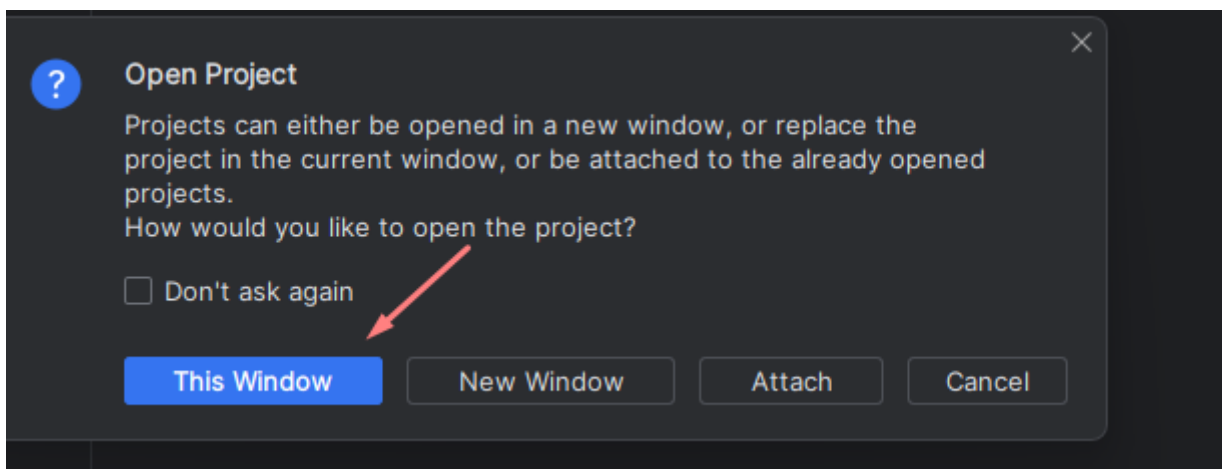
2-rasm

Bu jarayonni noldan boshlab o'rganayotganlar uchun ham qulay bolishligini taminlaydi. Ushbu ko'rsatkichdan bizga **new project** qismini tanlaymiz va shu ko'rinishga kelgan bo'lishi kerak.(3-rasm)

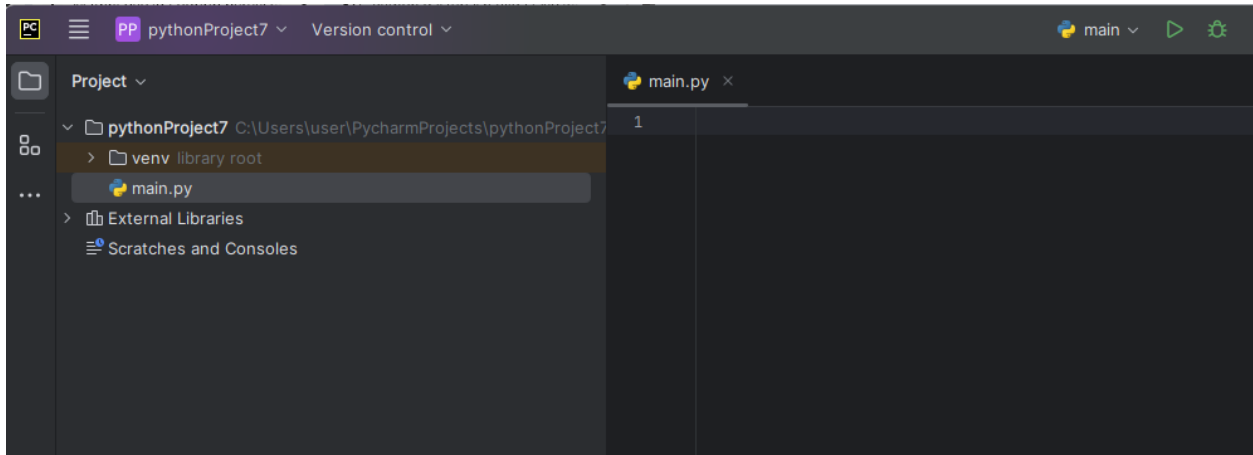


3-rasm

Kerakli parametrlarga ahamiyat beramiz belgilanganlar aynan shu ko‘rinishda bo‘lishi shart. So‘ng quyidagicha ko‘rinish chiqadi va biz proectimizni faylini hosil qilib olgan bo‘lamiz. Belgilangan tugmani bosning (4-rasm)

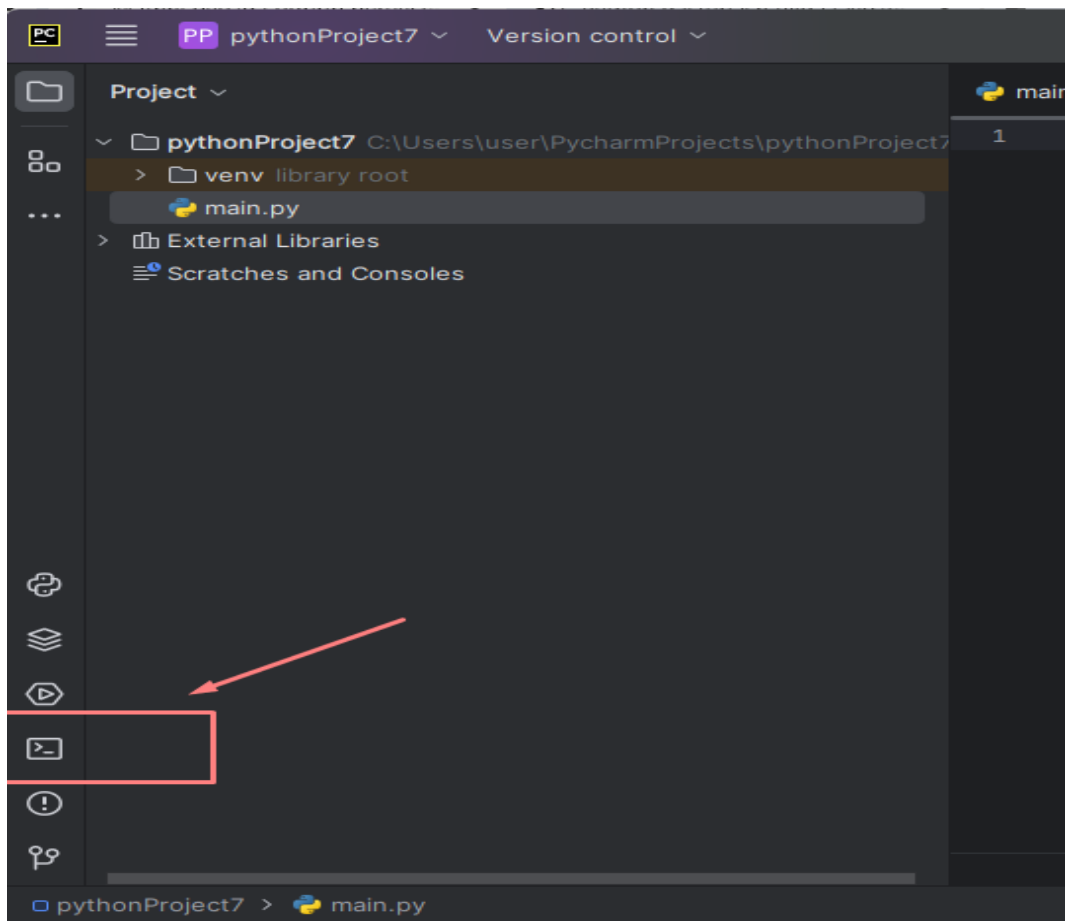


4-rasm



5-rasm

(5-rasm)yuqoridagi ekran paydo bo‘ladi va terminalni ochib olamiz (6-rasm)



(6-rasm) terminalga quyidagilarni yozamiz

- 1) pip install pywin32
 - 2) pip install pypiwin32
 - 3) pip install pytsx3
- va kodlarni kiritib olamiz

```
(venv) PS C:\Users\user\PycharmProjects\pythonProject7> pip install pywin32
```

1-kutubxonani chaqirganmiz

```
Successfully installed pywin32-306
```

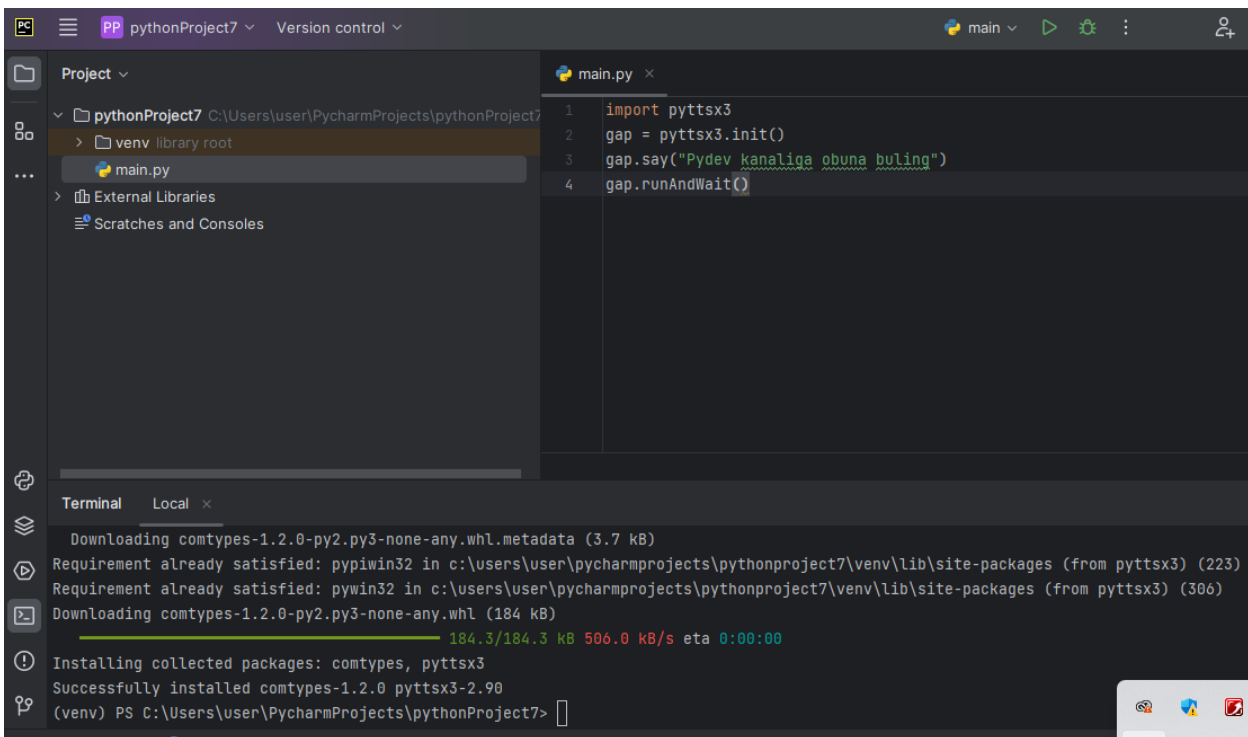
```
(venv) PS C:\Users\user\PycharmProjects\pythonProject7> pip install pypiwin32
```

2-kutubxonani chaqiramiz

```
Successfully installed pypiwin32-223
```

```
(venv) PS C:\Users\user\PycharmProjects\pythonProject7> pip install pyttsx3
```

3-kutubxonani kiritamiz



The screenshot shows the PyCharm IDE interface. On the left, the Project tool window displays the file structure for 'pythonProject7', including a 'venv' directory with a 'library root' and a 'main.py' file. The main editor window shows the content of 'main.py' with the following code:

```
1 import pyttsx3
2 gap = pyttsx3.init()
3 gap.say("Pydev kanaliga obuna buling")
4 gap.runAndWait()
```

Below the editor is the Terminal window, which shows the output of the pip installation commands:

```
Downloading comtypes-1.2.0-py2.py3-none-any.whl.metadata (3.7 kB)
Requirement already satisfied: pypiwin32 in c:\users\user\pycharmprojects\pythonproject7\venv\lib\site-packages (from pyttsx3) (223)
Requirement already satisfied: pywin32 in c:\users\user\pycharmprojects\pythonproject7\venv\lib\site-packages (from pyttsx3) (306)
Downloading comtypes-1.2.0-py2.py3-none-any.whl (184 kB)
184.3/184.3 kB 506.0 kB/s eta 0:00:00
Installing collected packages: comtypes, pyttsx3
Successfully installed comtypes-1.2.0 pyttsx3-2.90
(venv) PS C:\Users\user\PycharmProjects\pythonProject7>
```

(7-rasm)

va nihoyat kodimiz ishga tushdi, Yuqoridagi algoritm orqali, kiritilgan matn ovozli shaklga o'zgartiriladi.

Ushbu maqolada biz matnni ovozga o'grish uchun qadamma qadam harakatlanib, o'z maqsadimizga erishdik. Bunda biz faqatgina matnni ovozga emas ovozni matnga ham aylantirishimiz mumkin. Bu kutubxonalar orqali yana bir qancha kichik dasturlar tuzishda foydalanishimiz mumkin.

Matnni ovozga o'girib beruvchi dastur Pythonda ovoz va matn ma'lumotlarini ishlashni o'z ichiga oladi. Bu texnologiya amaliyot sohalarida qo'llaniladi, masalan: Virtual Assistant (Ovozni aniqlash uchun yordamchi): So'rovlarni e'lon qilish, vazifalarni bajarish, matn bo'yicha savollar berish, ma'lumotlar izlash uchun ovozni qo'llash va boshqalar

Qo'llanma interfeyslar: Mobil ilovalarda, smart TV, yadro formalarida, dasturiy ta'minotlarda matnni ovozga o'girib berish orqali interfeysni ovoz orqali boshqarish. Tezkor tekshiruv uchun dasturlar: Mening tarjimai holati, so'zlar yoki odamlar o'rtasida ovoz orqali ta'kidlash yoki tekshirish uchun dasturlar.

Tarjimon dasturlar: Matnni ovozga o'girib berish va qaytarish orqali qo'shma tillarda matnni ko'rish. Audiotekst analiz dasturlari: Ovozni matnga o'girib berish va ma'lumotlarni tahlil qilishda ishlatiladi.

Matnni ovozga o'girib beruvchi dasturlar odatda "Speech-to-Text" (STT) yoki "Automatic Speech Recognition" (ASR) atamalar bilan ataladi. Ovozni tashqi matnga o'girib berishda, matnning tarkibi, til va murakkablik bosqichini tushunish va boshqa qo'shimcha ma'lumotlarni olish uchun texnologiyalar ishlatiladi.

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