

PYTHON TILI YORDAMIDA LUG‘ATLARNING MOBIL ILOVASINI YARATISH BO‘YICHA TAJRIBA EXPERIENCE IN CREATING A MOBILE DICTIONARY APPLICATION WITH PYTHON LANGUAGE

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Annotatsiya. Android ilovalarni yaratishda C#, C++, Java, Kotlin kabi dasturlash tillari dunyo miqiyosida tan olinadi. Ammo izlanishlar davomida shu ma’lum bo‘ldiki, uPython tilining ham imkoniyatlari yuqoridagi maqsadni amalga oshirish uchun yetarli. Python o‘rganish va tushunish uchun eng yengil dasturlash tili bo‘lganligi bois, lug‘atlarning ilovasini yaratishda foydalanish maqsadga muvofiq.

Kalit so‘zlar: *Python, android, mobil ilova, framework, kutubxona.*

Abstract. Programming languages such as C #, C ++, Java, Kotlin are commonly recognized when it comes to creating Android, desktop, and web applications. However, research has shown that the capabilities of the Python language are sufficient to achieve this goal. Since Python is the easiest programming language to learn and understand, it might come in handy to create a dictionary application.

Keywords: *Python, android, mobile app, framework, library.*

O‘zbekiston Respublikasi Prezidenti Shavkat Mirziyoyevning 2019-yilning 21-oktabrdagi “O‘zbek tilining davlat tili sifatidagi nufuzi va mavqegini tubdan oshirish chora-tadbirlari to‘g‘risida”gi PF-5850-son Farmonida davlat tilining axborot va kommunikatsiya texnologiyalari, xususan, Internet jahon axborot tarmog‘ida munosib o‘rin egallashini ta’miniash, o‘zbek tilining kompyuter ilovalarini yaratishga katta e’tibor qaratilgan²². Shunday ekan, bugungi kunda o‘zbekcha elektron lug‘at ilovalarni ishlab chiqish ham katta ahamiyatga ega²³. Bu kabi elektron lug‘atlarni turli xildagi dasturlash tillari oqali oson qilish mumkin.

²³ Abjalova M., Erkinov F. Elektron lug‘at va kiberleksikografiya. // O‘zMU xabarları. Mirzo Ulug‘bek nomidagi O‘zbekiston Milliy universiteti ilmiy jurnali. – Toshkent, 1/2021. – B. 160-163.

Lug‘at ilovalarini yaratishda quyidagilarni bilish yetarli bo‘ladi:

1. Dasturlash tili
2. Relatsion ma‘lumotlar bazasi.

Dasturlash tili ilova yaratish uchun kerak bo‘ladigan vosita hisoblanib, ulaming turlari juda ko‘p bo‘lib, eng mashhurlari Java, C#, C++, Python dasturlash tillaridir. Bu dasturlash tillari orqali har qanday lug‘at ilovalari yaratish mumkin, Ular ichida eng qulayi va eng ko‘p ishlatiladigani java dasturlash tili bo‘lsa-da, Python yordamida ham ma‘umotlarni chaqirish, saralash va export qilish mumkin.

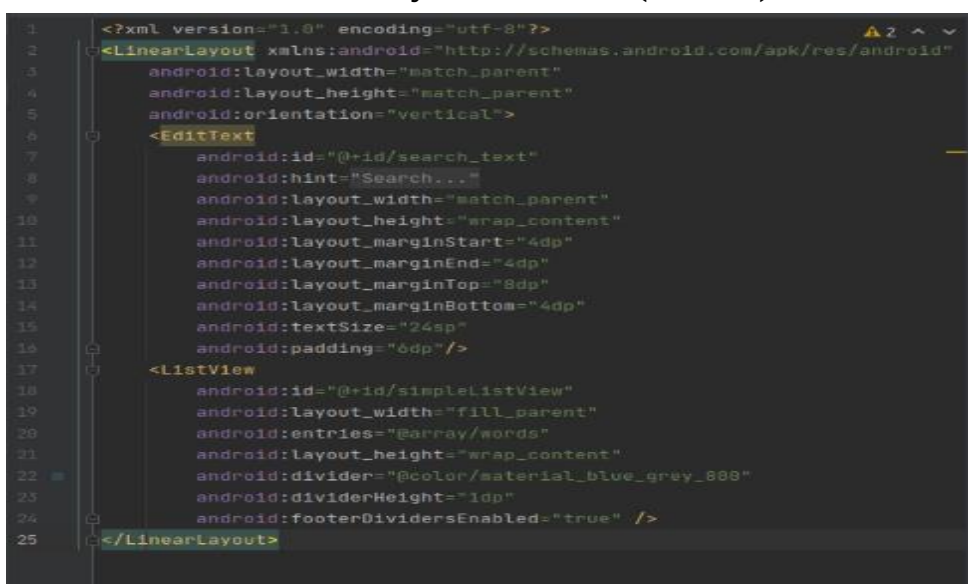
Python – tez, ishonchli va xavfsiz, muhimi, kodlarni o‘qish osonligi tufayli yangi o‘rganuvchilar uchun qulay. Bu tildan sun‘iy intellect yaratishda, mashina tarjimasini amalga oshirishda va tabiiy tilni qayta ishlashda keng qo‘llaniladi.

Pythonda dastur yaratish uchun AIOHTTP, Bottle, CherryPy, CubicWeb, Dash, Django, Falcon, Flask, Giotto, Growler kabi frameworklaridan foydalanish mumkin.

Pythonda yozilgan kodni Android uchun moslashda **Kivy** ochiq kutubxonasi va **Chaquopydan**²⁴ foydalanish mumkin. Chaquopyning qulaylik tomoni shundaki, Android ilovasiga Python komponentlarini kiritish uchun kerak bo‘lgan hamma narsani: Android Studio standart Gradle Build tizimi bilan to‘liq integratsiyani, SciPy, OpenCV, TensorFlow assortimenti bilan ishlash imkoniyatini beradi.

Quyida Chaquopy yordamida ma‘lumotlar omborini o‘z ichiga qamrab olgan mobil ilova ko‘rinishi qanday interfeysga ega bo‘lishi mumkinligiga misol keltirildi:

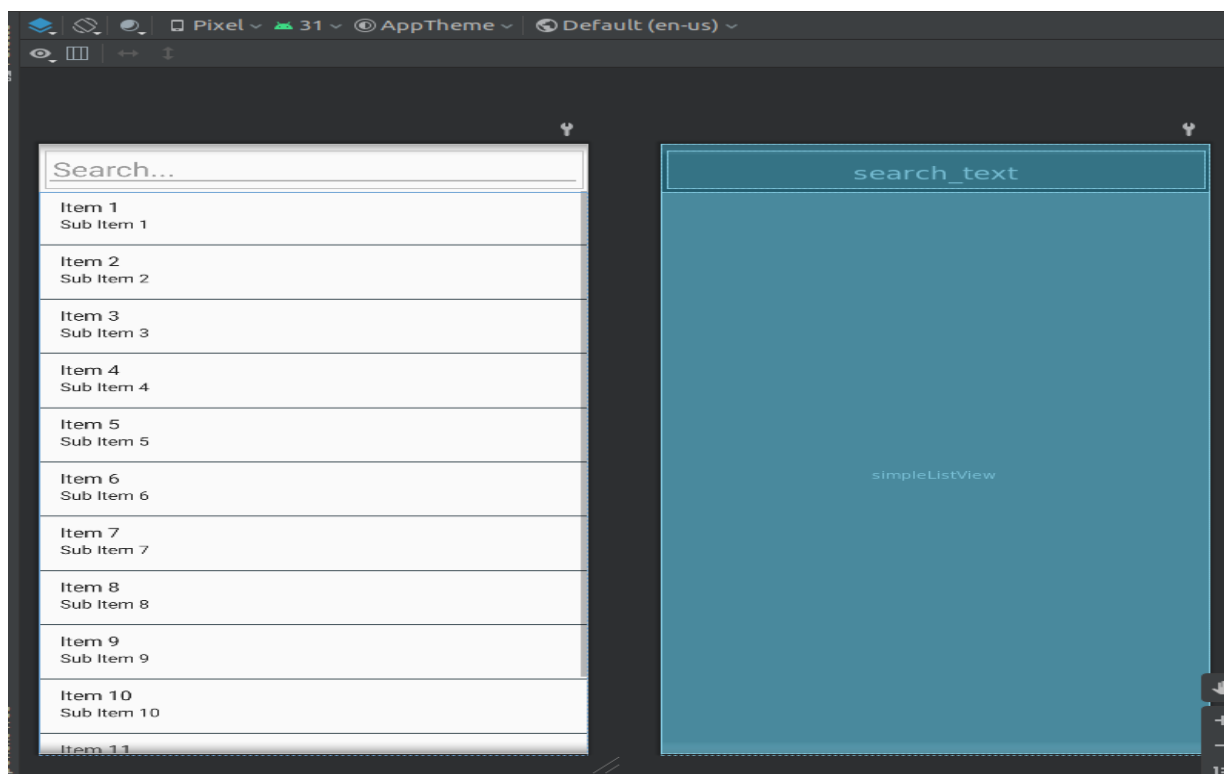
1) Mobil ilova ko‘rinishini yasash uchun (1-rasm):



```
1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     android:layout_width="match_parent"
4     android:layout_height="match_parent"
5     android:orientation="vertical">
6     <EditText
7         android:id="@+id/search_text"
8         android:hint="Search..."
9         android:layout_width="match_parent"
10        android:layout_height="wrap_content"
11        android:layout_marginStart="4dp"
12        android:layout_marginEnd="4dp"
13        android:layout_marginTop="8dp"
14        android:layout_marginBottom="4dp"
15        android:textSize="24sp"
16        android:padding="8dp"/>
17     <ListView
18         android:id="@+id/simpleListView"
19         android:layout_width="fill_parent"
20         android:entries="@array/words"
21         android:layout_height="wrap_content"
22         android:divider="@color/material_blue_grey_800"
23         android:dividerHeight="1dp"
24         android:footerDividersEnabled="true" />
25 </LinearLayout>
```

²⁴ <https://chaquo.com/chaquopy/>

Natijada quyidagi kornishda qolip yasaladi:



2-rasm

2) Ma'lumotlarni yuklash:

strings.xml

<resources>

<string name="app_name">Dictionary</string>

<string name="search_hint">Search...</string>

<string-array name="words">

<item> Lug'atga oid so'z yozing</item>

<item>Blue</item>

<item>White</item>

<item>Green</item>

<item>Grey</item>

</string-array>

</resources>

<item>Blue</item> qolipidagi “Blue” o‘rnida lug‘atda qidirilishi kerak bo‘lgan kerakli so‘z yoziladi. Ammo bunda har bir so‘zni qo‘l mehnati yordamida kiritish kerakligi sabab, jarayon uzoq vaqtni talab qilishi mumkin. Natija olinganda esa so‘zlar ustun ko‘rinishida aks etadi, xolos:

Dictionary
Search...
Red
Blue
White
Green
Grey

3-rasm.

Tajriba davomida quyidagi **xulosalar** olindi:

1) Chaquopy tayyor ma’lumotlar omborini to‘g‘ridan to‘g‘ri o‘qiy olish imkoniga ega emas, ammo kerakli so‘zlarni qo‘l mehnati yordamida kiritish mumkin;

2) Chaquopy kodlarini Javaga nisbatan soddaroq tilda yozish hamda Python kodlarini Javaga o‘girish mumkin, lekin Chaquopy Java taqdim etadigan imkoniyatlarning barchasiga ega emas;

3) Chaquopyni ishga tushirishdan oldin Pythonning eng so‘nggi versiyalaridan birini, Android Studio, SDK dasturlarini o‘rnatib olish kerak, bu esa dastur amalga oshiraloyotgan qurilmaning Windows 8/11, 64-bit, intel Core 2 gen yoki AMD, 8GB yoki undan yuqori operativ xotira (RAM), minimal 8 GB diskda bo‘sh joy, 1280x800 minimal ekran o‘lchami kabi talablarga javob berishini talab qiladi;

4) Java yoki Dart tillarida yozilgan mobil ilovalarga nisbatan Chaquopy yordamida yaratilgan ilova qurilma xotirasida ancha ko‘p joy egallaydi, bu esa foydalanuvchilar uchun noqulaylik tug‘diradi.

Yuqoridagi kamchiliklariga qaramay, Chaquopy Python tilining o‘zi bilan mobil ilova yaratish mumkin, degan farazni oqlaydi. Bu esa Python imkoniyatlari hali to‘liq o‘rganilmaganligini, u bilan bog‘liq masalalarni yechishda ko‘plab tajribalar amalga oshirish kerakligini isbotlaydi.



Foydalanilgan adabiyotlar:

1. O'zbekiston Respublikasi Prezidentining 2019-yil 21-oktabrdagi “O'zbek tilining davlat tili sifatidagi nufuzi va mavqeiini tubdan oshirish chora-tadbirlari to'g'risida”gi PF-5850-son Farmoni (<https://lex.uz/docs/-4561730>)
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6. <https://www.geeksforgeeks.org/best-python-libraries-for-machine-learning/>