

## PYTHON-DA API-LARDAN FOYDALANISH: KENG QAMROVLI QO'LLANMA

**Tursunbek Sadriddinovich Jalolov***Asian International University, Bukhara, Uzbekistan**Email: [jalolovtursunbeksadriddinovich@oxu.uz](mailto:jalolovtursunbeksadriddinovich@oxu.uz)*

**Annotatsiya:** *Amaliy dasturlash interfeyslari (API) zamonaviy dasturiy ta'minotni ishlab chiqishda hal qiluvchi rol o'ynaydi, bu esa ishlab chiquvchilarga tashqi xizmatlar va ma'lumotlarga osongina kirish va ular bilan ishlash imkonini beradi. Ushbu maqolada biz soddaligi va ko'p qirraliligi bilan mashhur bo'lgan mashhur dasturlash tili bo'lgan Python-da API-lardan qanday foydalanishni o'rganamiz. Biz API bilan ishlash asoslarini muhokama qilamiz, API so'rovlarini qanday qilish, javoblarni qayta ishlash va ma'lumotlarni tahlil qilishni ko'rsatamiz. Ushbu qo'llanmaning oxirida siz Python loyihalarinigizda API-lardan qanday foydalanishni yaxshi tushunasiz.*

**Kalit so'zlar :** *API, Python, veb-xizmatlar, ma'lumotlar integratsiyasi, RESTful API.*

**Kirish :**

Bugungi o'zaro bog'langan dunyoda ilovalar ko'pincha ma'lumot almashish va turli vazifalarni bajarish uchun bir-biri bilan muloqot qilishlari kerak bo'ladi. API'lar turli xil dasturiy ta'minot tizimlari uchun qoidalar va protokollar to'plamini belgilash orqali bir-biri bilan o'zaro ta'sir qilishning standartlashtirilgan usulini ta'minlaydi. Python-da API-lardan foydalanish tashqi xizmatlarni ilovalaringizga integratsiyalash jarayonini sezilarli darajada soddalashtirishi mumkin.

Dasturiy ta'minotni ishlab chiqish dunyosida amaliy dasturlash interfeyslaridan (API) foydalanish tobora ommalashib bormoqda. API-lar turli xil dasturiy ta'minot tizimlariga bir-biri bilan aloqa qilish va ma'lumotlar almashish imkonini beradi, bu esa ishlab chiquvchilarga turli xizmatlar va funksiyalarni birlashtirish orqali murakkab ilovalarni yaratishni osonlashtiradi. Ushbu maqolada biz o'zining soddaligi va foydalanish qulayligi bilan mashhur bo'lgan ko'p qirrali va kuchli dasturlash tili bo'lgan Python-da API-lardan qanday foydalanishni o'rganamiz.

**1. API nima?**

API - bu turli xil dasturiy ilovalarning bir-biri bilan muloqot qilishiga imkon beruvchi qoidalar va protokollar to'plami. U ilovalar ma'lumot so'rash va almashish uchun foydalanishi mumkin bo'lgan usullar va ma'lumotlar formatlarini belgilaydi . API-lar ijtimoiy media platformalari, to'lov shlyuzlari, ob-havo ma'lumotlari va boshqalar kabi keng ko'lamli xizmatlarga kirish uchun ishlatilishi mumkin .

**2. API turlari**

RESTful API, SOAP API, GraphQL API va boshqalarni o'z ichiga olgan bir nechta API turlari mavjud . RESTful API-lar veb-ishlab chiqishda ishlatiladigan eng keng tarqalgan API turidir, chunki ular engil, kengaytiriladigan va ishlatish uchun qulay. Ular odatda ma'lumotlarni olish yoki resurslarni yangilash kabi amallarni bajarish uchun HTTP so'rovlaridan foydalanadilar.

**3. Pythonda API lardan foydalanish**

Python API bilan ishlashni osonlashtiradigan boy kutubxonalar ekotizimiga ega. Python-da HTTP so'rovlarini amalga oshirish uchun eng mashhur kutubxonalardan biri so'rovlar bo'lib, API so'nggi nuqtasiga GET, POST, PUT, DELETE so'rovlarini yuborish uchun oddiy interfeysni ta'minlaydi.

So'rovlar kutubxonasidan foydalanib, GET so'rovini qanday qilish mumkinligiga misol

:

```
import requests
response = requests.get('https://api.example.com/data')
print(response.json())
```

Ushbu misolda biz `https://api.example.com/data` manziliga GET so'rovini yubormoqdamiz va API tomonidan qaytarilgan JSON javobini chop etmoqdamiz.

#### 4. API bilan autentifikatsiya qilish

Ko'pgina APIlar resurslariga kirishdan oldin autentifikatsiyani talab qiladi. Bu odatda so'rov sarlavhalarida API kaliti yoki kirish tokenini taqdim etish orqali amalga oshiriladi. Quyida so'rovlar kutubxonasi yordamida API yordamida autentifikatsiyani qanday o'tkazishingiz mumkinligiga misol keltirilgan:

```
import requests
headers = {
'Authorization': 'Bearer YOUR_ACCESS_TOKEN'
}
response = requests.get('https://api.example.com/protected/resource', headers=headers)
print(response.json())
```

Ushbu misolda biz API so'nggi nuqtasi bilan autentifikatsiya qilish uchun avtorizatsiya sarlavhasida kirish tokenini o'tkazmoqdamiz.

#### 5. Javoblarni boshqarish

API so'nggi nuqtasiga so'rov yuborganingizdan so'ng, siz Python kodingizda tahlil qilishingiz va boshqarishingiz mumkin bo'lgan ma'lumotlarni o'z ichiga olgan javob olasiz. So'rovlar kutubxonasi tomonidan qaytarilgan javob obyektida `status_kodi`, sarlavhalar va JSON javoblarini tahlil qilish uchun `json()` usuli kabi bir nechta atributlarga ega.

#### 6. Xulosa

Ushbu maqolada biz so'rovlar kutubxonasi yordamida Python-da API-lardan qanday foydalanishni o'rganib chiqdik. API'lar qanday ishlashini tushunish va ular bilan Python kodida samarali ishlash imkoniyatiga ega bo'lish orqali ishlab chiquvchilar turli tashqi xizmatlar va resurslar bilan integratsiyalashgan kuchli ilovalar yaratishlari mumkin.

API-lar dasturiy ta'minot tizimlarining bir-biri bilan o'zaro ta'sirida inqilob qildi va innovatsion ilovalar yaratish uchun yangi imkoniyatlar ochdi. Python'da API'lar bilan ishlashni o'zlashtirib, ishlab chiquvchilar zamonaviy foydalanuvchilarning ehtiyojlariga javob beradigan mustahkam va samarali ilovalar yaratish uchun ushbu kuchli asboblarga to'plamidan foydalanishlari mumkin.

Umuman olganda, Python'da API'lardan foydalanish tashqi xizmatlar va ma'lumotlar manbalari bilan uzluksiz bog'langan dinamik va funksiyalarga boy ilovalar yaratmoqchi bo'lgan har qanday dasturchi uchun qimmatli mahoratdir.

Python'da API'lar bilan ishlashni boshlash uchun avvalo ular ortidagi asosiy tushunchalarni tushunishingiz kerak. API turli xil dasturiy ilovalar o'rtasida vositachi bo'lib, ularga ma'lumotlar va funkcionallikni uzluksiz almashish imkonini beradi. API larning har xil turlari mavjud, biroq keng tarqalgan turlaridan biri Representational State Transfer (REST) API bo'lib, u resurslarni so'rash va boshqarish uchun GET va POST kabi standart HTTP usullaridan foydalanadi.

urllib kabi kutubxonalar yordamida amalga oshirish juda oson . Ushbu kutubxonalar sizga HTTP so'rovlarini API so'nggi nuqtasiga yuborish va serverdan javoblarni qabul qilish imkonini beradi. API dan javob olganingizdan so'ng, kerakli ma'lumotlarni olish uchun JSON yoki XML tahlilchilari kabi vositalar yordamida ma'lumotlarni tahlil qilishingiz mumkin.

**Xulosa :**

Xulosa qilib aytganda, Python-da API-lardan foydalanish tashqi xizmatlar va ma'lumotlar manbalari bilan uzluksiz integratsiyani ta'minlash orqali dasturiy ta'minot loyihalaringiz uchun yangi imkoniyatlarni ochishi mumkin. Ushbu qo'llanmada bayon etilgan tamoyillarga amal qilib, API so'rovlarini bajarish va Python'da javoblar bilan ishlashni mashq qilish orqali siz keng ko'lamli veb-xizmatlar bilan o'zaro aloqada bo'ladigan kuchli ilovalar yaratish uchun yaxshi jihozlangan bo'lasiz. Esda tutingki, API bilan ishlash ilovangiz va tashqi xizmatlar o'rtasida uzluksiz aloqani ta'minlash uchun tafsilotlarga e'tibor qaratish va xatolarni izchil boshqarish amaliyotini talab qiladi. Sabr-toqat va amaliyot bilan siz Python-da API-lardan foydalanish san'atini egallashingiz va rivojlanish ko'nikmalaringizni keyingi bosqichga olib chiqishingiz mumkin.

**ADABIYOTLAR RO'YXATI:**

1. Qobilovna, A. M. (2024). SOCIAL PSYCHOLOGICAL DETERMINANTS OF FORMATION OF COMMUNICATIVE COMPETENCE. *MASTERS*, 2(5), 62-68.
2. Qobilovna, A. M. (2024). SOCIAL PSYCHOLOGICAL DETERMINANTS OF FORMATION OF COMMUNICATIVE COMPETENCE IN PRIMARY SCHOOL TEACHERS. *MASTERS*, 2(5), 69-75.
3. Qobilovna, A. M. (2024). СОЦИАЛЬНО-ПСИХОЛОГИЧЕСКИЕ ДЕТЕРМИНАНТЫ ФОРМИРОВАНИЯ КОММУНИКАТИВНОЙ КОМПЕТЕНТНОСТИ УЧИТЕЛЕЙ НАЧАЛЬНЫХ КЛАССОВ. *WORLD OF SCIENCE*, 7(5), 347-354.
4. Qobilovna, A. M. (2024). КОММУНИКАТИВНЫЕ КОМПЕТЕНТНОСТИ УЧИТЕЛЕЙ НАЧАЛЬНЫХ ШКОЛ. *WORLD OF SCIENCE*, 7(5), 362-370.
5. Qobilovna, A. M. (2024). СОЦИАЛЬНО-ПСИХОЛОГИЧЕСКИЕ ДЕТЕРМИНАНТЫ ФОРМИРОВАНИЯ КОММУНИКАТИВНОЙ КОМПЕТЕНТНОСТИ. *WORLD OF SCIENCE*, 7(5), 340-346.
6. Qobilovna, A. M. (2024). BOSHLANGANCHI SINF O 'QITUVCHILARINING KOMMUNIKATIV KOMPETENTSIYALARI. *MASTERS*, 2(5), 83-90.
7. Qobilovna, A. M. (2024). ФОРМИРОВАНИЕ КОММУНИКАТИВНОЙ КОМПЕТЕНТНОСТИ В СОЦИАЛЬНОЙ ПСИХОЛОГИИ. *MASTERS*, 2(5), 76-82.

8. Qobilovna, A. M. (2024). FORMATION OF COMMUNICATIVE COMPETENCE IN SOCIAL PSYCHOLOGY. *WORLD OF SCIENCE*, 7(5), 355-361.
9. Qobilovna, A. M. (2024). COMMUNICATIVE COMPETENCIES OF PRIMARY SCHOOL TEACHERS. *PSIXOLOGIYA VA SOTSIOLOGIYA ILMIY JURNALI*, 2(4), 89-96.
10. Qobilovna, A. M. (2024). BOSHLANG'ICH MAKTAB O'QITUVCHILARIDA KOMMUNIKATIV KOMPETENTSIYANI SHAKLLANTIRISHNING IJTIMOY PSIXOLOGIK OMILLARI. *PSIXOLOGIYA VA SOTSIOLOGIYA ILMIY JURNALI*, 2(4), 75-81.
11. Qobilovna, A. M. (2024). IJTIMOY PSIXOLOGIYA FANIDAN KOMMUNIKATIV KOMPETENSIYANI SHAKLLANTIRISH. *PSIXOLOGIYA VA SOTSIOLOGIYA ILMIY JURNALI*, 2(4), 82-88.
12. Qobilovna, A. M. (2024). KOMMUNIKATIV KOMPETENSIYATNI SHAKLLANTIRISHNING IJTIMOY PSIXOLOGIK ANTRORLARI. *PSIXOLOGIYA VA SOTSIOLOGIYA ILMIY JURNALI*, 2(4), 68-74.
13. Qobilovna, A. M. (2024). INVESTIGATING THE ISSUE OF COMMUNICATIVE AND ORGANIZATIONAL SKILLS IN PSYCHOLOGY. *PEDAGOG*, 7(5), 601-609.
14. Атавуллаева, М. К. (2023). ПСИХОЛОГИЧЕСКИЕ ДЕТЕРМИНАНТЫ ФОРМИРОВАНИЯ СОЦИАЛЬНО-ПСИХОЛОГИЧЕСКОЙ КОМПЕТЕНТНОСТИ УЧИТЕЛЕЙ НАЧАЛЬНЫХ КЛАССОВ. *European research*, (3 (81)), 39-41.
15. Атавуллаева, М. (2024). ПРОЯВЛЕНИЕ АСПЕКТОВ КОММУНИКАТИВНОЙ КВАЛИФИКАЦИИ В ХОДЕ ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ. *Журнал академических исследований нового Узбекистана*, 1(1), 14-18.
16. Атавуллаева, М. К. (2023). РОЛЬ И ЗНАЧЕНИЕ СОЦИАЛЬНОГО ИНТЕЛЛЕКТА УЧИТЕЛЯ НАЧАЛЬНЫХ КЛАССОВ В ЭФФЕКТИВНОСТИ ОБУЧЕНИЯ. *European research*, (3 (81)), 41-43.
17. Qobilovna, A. M. (2024). MANIFESTATION OF FACTORS OF COMMUNICATIVE COMPETENCE IN THE PROCESS OF PROFESSIONAL ACTIVITY. *International Journal of Pedagogics*, 4(01), 66-73.
18. Qobilovna, A. M. (2023). PROGRAM FOR THE DEVELOPMENT OF PRIMARY SCHOOL TEACHERS' COMMUNICATIVE COMPETENCE FACTORS. *International Journal of Pedagogics*, 3(12), 169-175.
19. Qobilovna, A. M. (2023). PROGRAM FOR THE DEVELOPMENT OF FACTORS OF COMMUNICATIVE COMPETENCE OF PRIMARY SCHOOL TEACHERS. *International Journal of Pedagogics*, 3(11), 131-137.
20. Qobilovna, A. M. (2022). BOSHLANG 'ICH SINF O 'QITUVCHILARIDA KOMMUNIKATIV KOMPITENTLIK SHAKLLANISHNING IJTIMOY-PSIXOLOGIK DETERMINANTLARI. *Central Asian Research Journal for Interdisciplinary Studies (CARJIS)*, (Special Issue 1), 102-105.

21. Qobilovna, A. M. (2023). Communicative Competence As A Factor Of Teacher's Professional Competency. *American Journal Of Social Sciences And Humanity Research*, 3(09), 32-44.
22. Ataulloyeva, M. (2024). COMMUNICATIVE COMPETENCE AS A FACTOR OF PERSONAL AND PROFESSIONAL DEVELOPMENT OF A FUTURE SPECIALIST. *Журнал академических исследований нового Узбекистана*, 1(2), 17-22.
23. Obidovna, D. Z. (2022). GENDER DIFFERENTIATION OF MASCULINE AND FEMININE VERBALIZATION. *European International Journal of Multidisciplinary Research and Management Studies*, 2(05), 59-65.
24. Djalilova, Z. O. (2021). Studies on gender linguistics in the field of Uzbek language. *Academic research in educational sciences*, 2(3), 391-397.
25. Obidovna, D. Z., & Denis, S. (2021). Formulas of speech etiquette in a gender-engineered communication strategy. *Central asian journal of theoretical & applied sciences*, 2(6), 5-11.
26. Obidovna, D. Z. (2021). Comparative Analysis Of Uzbek Men's And Women's Speech Through The Prism Of Gender Linguistics. *Central Asian journal of literature, philosophy and culture*, 2(2), 22-26.
27. Obidovna, D. Z. (2022). Speech Behavior and its Gender Specificity on the Basis of the Main English Language Variants. *Middle European Scientific Bulletin*, 22, 199-205.
28. Obidovna, D. Z. (2021). Gender issues in foreign theoretical linguistics: concerning the history of the issue. *Gender issues*, 7(6).
29. JALILOVA, Z. O. (2021, March). ON THE FORMATION OF THE LANGUAGE OF SCIENTIFIC LITERATURE IN THE HISTORY OF THE ENGLISH LANGUAGE. In *E-Conference Globe* (pp. 18-22).
30. Jalilova, Z. O. (2020). Concerning the issue of terms, having a place with various morphological classes (in view of the example of the terminological arrangement of social action). *Новый день в медицине*, (4), 501-503.
31. Djalilova, Z. O., Juraev, S. S., & Kosimov, S. M. (2021). LATIN AS A PROFESSIONAL LANGUAGE OF MEDICAL WORKERS. *Международный научно-практический электронный журнал «МОЯ ПРОФЕССИОНАЛЬНАЯ КАРЬЕРА»*. Выпуск № 23 (том 1)(апрель, 2021). Дата выхода в свет: 30.04. 2021., 79.
32. Djalilova, Z. O. (2023). A DISCOURSIIVE TURN IN THE THEORY OF LINGUISTIC POLITENESS: TO THE FORMATION OF THE THEORY OF LINGUISTIC IMPOLITENESS. *International Journal Of Literature And Languages*, 3(02), 15-23.
33. Djalilova, Z. (2023). PEDAGOGICAL EDUCATIONAL TECHNOLOGY: ESSENCE, CHARACTERISTICS AND EFFICIENCY. *Академические исследования в современной науке*, 2(23), 29-38.
34. Djalilova, Z. (2023). THE SIGNIFICANCE AND POSITION OF TEACHING METHODS IN PROFESSIONAL TRAINING. *Solution of social problems in management and economy*, 2(10), 31-42.
35. Djalilova, Z. (2023). THE USE OF LATIN TERMINOLOGY IN MEDICAL CASE. *Академические исследования в современной науке*, 2(14), 9-15.

36. Джалилова, З. (2023). The notion of illocution in the theory of speech acts by John Austin. *Современные тенденции при обучении иностранному языку в XXI веке, 1(1)*.
37. Obidovna, D. Z. (2023). ADAPTING TEACHING METHODS TO MODERN EDUCATIONAL TRENDS: PEDAGOGICAL ASPECT. *International Journal of Pedagogics, 3(10)*, 72-77.
38. Djalilova, Z. (2023). LANGUAGE LEARNING STRATEGIES AND THEIR IMPLICATION FOR TEACHING ENGLISH. *Центральноазиатский журнал образования и инноваций, 2(11)*, 18-22.
39. Obidovna, D. Z., & Sulaimonovich, D. S. (2023). Influence of the Mode of Work and Recreation of the Student's Health. *INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES, 2(3)*, 3-5.
40. Obidovna, D. Z., & Sulaymonovich, D. S. (2023). Forming a Healthy Lifestyle for Students on the Example of the Volleyball Section in Universities. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION, 3(3)*, 22-25.
41. Obidovna, D. Z., & Sulaymonovich, D. S. (2022). Physical activity and its impact on human health and longevity. *Достижения науки и образования, (2 (82))*, 120-126.
42. Obidovna, D. Z., & Sulaymonovich, D. S. (2022). THE CONCEPT OF "HEALTHY LIFESTYLE" IN PSYCHOLOGICAL RESEARCH. *ResearchJet Journal of Analysis and Inventions, 3(06)*, 53-64.
43. Jo'rayev, S., & Djalilova, Z. (2022). NEUROLOGICAL STATUS OF CHILDREN WITH INTRAUTERINE DEVELOPMENTAL DELAY. *International Bulletin of Medical Sciences and Clinical Research, 2(9)*, 34-37.
44. Djalilova, Z. (2023). ADVANCING PEDAGOGICAL APPROACHES: LEVERAGING ARTIFICIAL INTELLIGENCE TECHNOLOGIES TO ENHANCE THE INTEGRATION OF ENGLISH AND LATIN LANGUAGE INSTRUCTIONAL METHODS. *International Bulletin of Medical Sciences and Clinical Research, 3(12)*, 54-60.
45. Djalilova, Z. (2023). ADVANCING CRITICAL THINKING PROFICIENCY THROUGH OPTIMIZED PEDAGOGICAL APPROACHES. *International Bulletin of Medical Sciences and Clinical Research, 3(12)*, 61-67.
46. Djalilova, Z. (2023). IMPROVING METHODOLOGIES FOR INTEGRATIVE ENGLISH AND LATIN LANGUAGE TEACHING USING ARTIFICIAL INTELLIGENCE TECHNOLOGIES. *Центральноазиатский журнал образования и инноваций, 2(12 Part 2)*, 29-34.
47. Djalilova, Z. (2023). ELEVATING CRITICAL THINKING WITH EFFICIENT TEACHING METHODS (GEARED TOWARDS MEDICAL STUDENTS). *International Bulletin of Medical Sciences and Clinical Research, 3(11)*, 97-102.
48. Obidovna, D. Z. (2023). THE ART OF QUESTIONING: ENHANCING CRITICAL THINKING THROUGH EFFECTIVE PEDAGOGICAL TECHNIQUES. *International Journal Of Literature And Languages, 3(11)*, 54-60.
49. Djalilova, Z. O., Tasheva, N. Z., Nematova, Z. T., & Nasrieva, G. Z. (2023). LEXICO-SEMANTIC PECULIARITIES IN MODERN ENGLISH (ANALYZING ITS

BOTH LANGUAGE VARIANTS: BRITISH AND AMERICAN ENGLISH ONES). *Journal of Advanced Zoology*, 44(S2), 4433-4445.

50. Obidovna, D. Z. (2024). THE PEDAGOGICAL-PSYCHOLOGICAL ASPECTS OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN INTEGRATIVE EDUCATION. *International Journal Of Literature And Languages*, 4(03), 13-19.

51. Джалилова, З., & Эргашева, Ш. (2024). ПСИХОЛОГИЧЕСКИЕ ОСНОВЫ И НАУЧНО-ТЕОРЕТИЧЕСКИЕ ПРИНЦИПЫ ФОРМИРОВАНИЯ ЯЗЫКОВЫХ УСТАНОВОК СТУДЕНТОВ ВЫСШЕГО УЧЕБНОГО ЗАВЕДЕНИЯ. *Журнал академических исследований нового Узбекистана*, 1(2), 116-120.

52. Djalilova, Z. (2024). ADVANCING CRITICAL THINKING PROFICIENCY THROUGH OPTIMIZED PEDAGOGICAL APPROACHES. *Центральноазиатский журнал междисциплинарных исследований и исследований в области управления*, 1(2), 24-29.

53. Djalilova, Z. (2024). ADVANCING PEDAGOGICAL APPROACHES: LEVERAGING ARTIFICIAL INTELLIGENCE TECHNOLOGIES TO ENHANCE THE INTEGRATION OF ENGLISH AND LATIN LANGUAGE INSTRUCTIONAL METHODS. *Центральноазиатский журнал междисциплинарных исследований и исследований в области управления*, 1(2), 19-23.

54. Djalilova, Z. (2024). APPLICATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN HISTORY EDUCATION. *Журнал академических исследований нового Узбекистана*, 1(2), 5-11.

55. Djalilova, Z. (2024). ELEVATING CRITICAL THINKING WITH EFFICIENT TEACHING METHODS (GEARED TOWARDS MEDICAL STUDENTS). *Центральноазиатский журнал междисциплинарных исследований и исследований в области управления*, 1(2), 8-12.

56. Джалилова, З. (2024). МЕТОДЫ РАЗРАБОТКИ ТЕХНОЛОГИЙ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА ДЛЯ ИНТЕГРАТИВНОГО ПРЕПОДАВАНИЯ АНГЛИЙСКОГО ЯЗЫКА СТУДЕНТАМ МЕДИЦИНСКИХ ВУЗОВ. *Журнал академических исследований нового Узбекистана*, 1(1), 19-22.

57. Jalolov, T. S. (2024). ПОРЯДОК СОЗДАНИЯ ПСИХОЛОГИЧЕСКИХ ТЕСТОВЫХ ПРОГРАММ. *PEDAGOG*, 7(6), 145-152.

58. Jalolov, T. S. (2024). BOSHLANG'ICH SINIF O'QUVCHILARIDA MULTIMEDIA TEXNOLOGIYALARI ORQALI IJODIY FIKRLASHNI KUCHAYTIRISH. *BIOLOGIYA VA KIMYO FANLARI ILMIY JURNALI*, 2(5), 64-70.

59. Jalolov, T. S. (2024). PYTHONNING MATEMATIK KUTUBXONALARINI O'RGANISH: KENG QAMROVLI QO'LLANMA. *BIOLOGIYA VA KIMYO FANLARI ILMIY JURNALI*, 2(5), 71-77.

60. Jalolov, T. S. (2024). DASTURLASHDA INGLIZ TILINING AHAMIYATI. *BIOLOGIYA VA KIMYO FANLARI ILMIY JURNALI*, 2(5), 78-84.

61. Jalolov, T. S. (2024). EXPLORING THE MATHEMATICAL LIBRARIES OF PYTHON: A COMPREHENSIVE GUIDE. *WORLD OF SCIENCE*, 7(5), 121-127.

62. Jalolov, T. S. (2024). ENHANCING CREATIVE THINKING IN ELEMENTARY SCHOOL STUDENTS THROUGH MULTIMEDIA TECHNOLOGIES. *WORLD OF SCIENCE*, 7(5), 114-120.

63. Jalolov, T. S. (2024). THE IMPORTANCE OF ENGLISH IN PROGRAMMING. *WORLD OF SCIENCE*, 7(5), 128-134.

64. Жалолов, Т. (2023). Использование математических методов в психологических данных (с использованием программного обеспечения SPSS). *in Library*, 4(4), 359-363.