



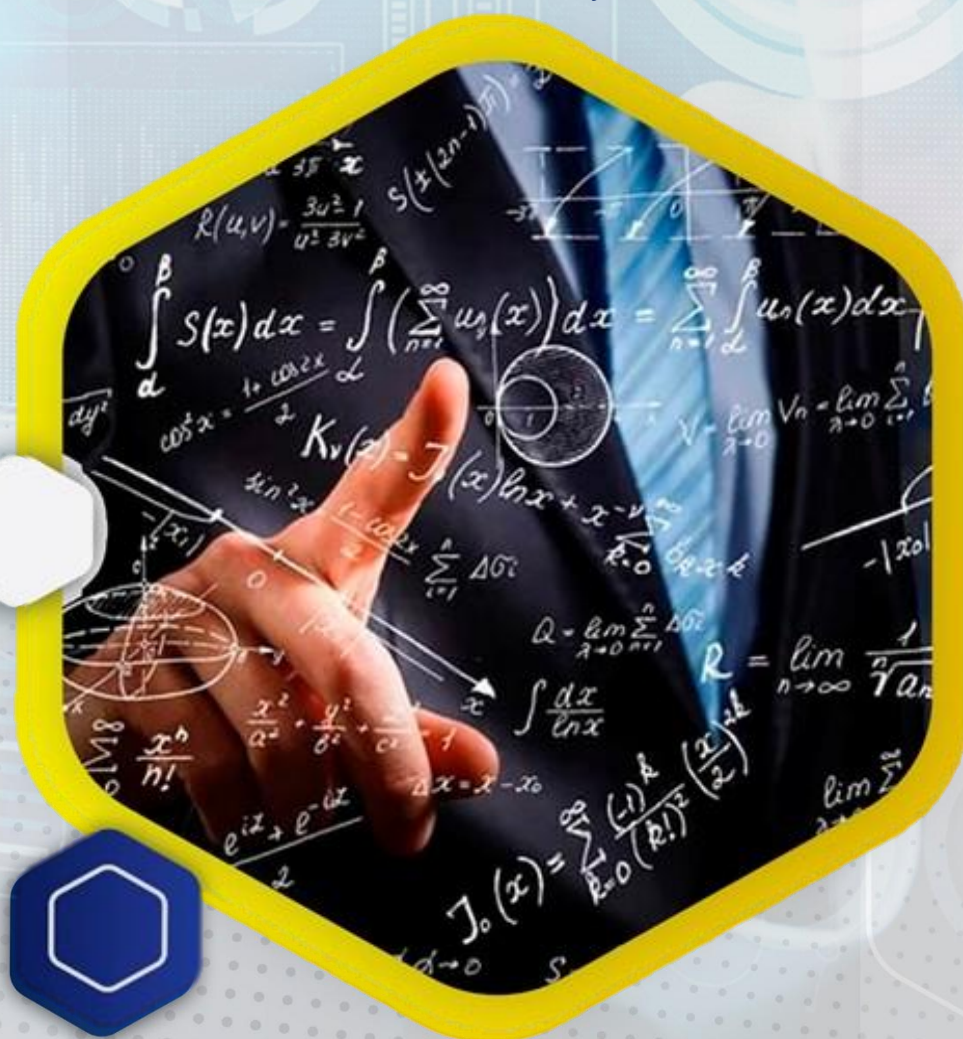
O'ZBEKISTON RESPUBLIKASI
OLIY TA'LIM, FAN VA INNOVATSIYALAR
VAZIRLIGI



BUXORO
DAVLAT
UNIVERSITETI
1930

"FIZIKA, MATEMATIKA VA SUN'IY INTELLEKT TEXNOLOGIYALARINING DOLZARB MUAMMOLARI"

XALQARO ILMIY-NAZARIY ANJUMAN MATERILLARI



BUXORO-2025



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UNIVERSITETI**

CURRENT PROBLEMS OF PHYSICS, MATHEMATICS AND ARTIFICIAL INTELLIGENCE TECHNOLOGIES

**INTERNATIONAL SCIENTIFIC AND THEORETICAL
CONFERENCE**

(May 16-17, 2025)

Bukhara-2025

UDC: 530+51+004.8

LBC: 22.1 + 22.16 + 32.81

A92

ISBN: 978-6206-800-31-9

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[5]. G.S.Turdieva Bulutli platformalardan foydalanishda xavfsizlik muammolari: Xavflar va tahdidlar // Inter education & global study. 2024. №4.

PYTHON DASTURLASH TILIDA INNOVATSION LOYIHALAR YARATISH.

Kamalova Nilufar Ilxomovna

Buxoro davlat universiteti

“Amaliy matematika va dasturlash texnologiyalari”

kafedrası dotsenti, pedagogika fanlari bo'yicha falsafa doktori (PhD)

Ilyosova Mashhura Akmal qizi

Buxoro davlat universiteti 2-bosqich magistranti

Annotatsiya. Maqolada Pythonda innovatsion loyihalar yaratish nazariyasi va klasifikatsiyasi haqida ma'lumot berilgan. Innovatsion loyiha fayllar orasidagi moslikni aniqlovchi dastur misolida keltirilgan.

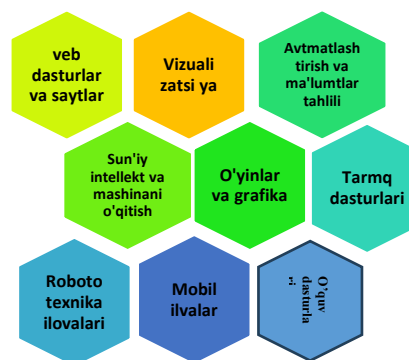
Kalit so'zlar: Python, plagiat, innovatsion loyiha, PyQT, ma'lumotlar tahlili.

Kirish

Bugungi kunda dasturlash tillarini ko'payishi, mehnat bozorida turli tillarga moslashuvchan dasturchilarga bo'lgan talabni oshishiga olib keladi. Bunday kadrlarni tayyorlashda ularning amaliy bilim ko'nikmalarini, kompetensiya darajasiga olib chiqishda qiziqarli innovatsion loyihalar yaratish orqali erishish mumkin. Innvatsion loyihalar dasturchini algritmik fikrlashini va muammoni hal qila olish ko'nikmasini rivojlantiradi. Dasturlash kutubxnalari va texnologiyalar bilan ishlash ko'nikmalarini rivojlantiradi. Dastur xato va kamchiliklarini aniqlash va tez tuzatish tajribasini rivojlantiradi. Loyihalarni boshqarish va innovatsion texnologiyalarni o'rganishga undaydi. Bu borada ko'plab tadqiqotchilar o'rganish olib borgan. Jumladan, Python dasturlash tili va uning kutubxnalarning imkoniyatlarini M. F. Sanner o'zining “Python: dasturlar uchun dasturlash tili integration va rivojlanish” nomli maqolasida yoritgan. Python dasturlash tili yordamida mashinani o'qitish va bunda sticky learning modulidan foydalanish haqida Hao, Jiangang va Tin Kam Ho.lar yozganlar[2]. Python dasturlash tilining imkoniyatlari va boshqa dasturlash tillaridan afzalliklarini Srinath, K. R. bayon etgan. [3]

Metodlar

Pythonda innovatsion loyihalarni quyidagicha klasifikatsiyalash mumkin:



1-rasm. Innovatsion loyihalar klasifikatsiyasi.

Biz asosiy e'tiborni avtomatlashtirish va ma'lumotlar tahliliga qaratdik. Chunki bunday dasturlar vaqt va resurslarni tejaydi, xatolarni kamaytiradi va ko'plab muammolarning innovatsion yechimini, yangi imkoniyatlarni ochib beradi. avtomatlashtirish va ma'lumotlar tahlilini bir nechta word fayllarini o'zaro plagiatga tekshiruvchi dastur misolida qaraymiz.

Dasturni tayyorlash uchun pythonning PyQt5 kabi modulidan foydalandik.

Quyida dastur kodi bilan qisqacha tanishtirib o'tamiz:

```

from ui import Ui_MainWindow
from PyQt5.QtWidgets import QMainWindow, QApplication
from PyQt5 import QtWidgets
from PyQt5.QtCore import Qt
from PyQt5.QtGui import QTextCursor
from PyQt5 import QtGui
import sys
from utils.check_for_plagiat import simple_similarity_ratio, find_common_indices
import os
from difflib import SequenceMatcher
import docx

class MainWindow(QMainWindow, Ui_MainWindow):
    def __init__(self):
        super().__init__()
        self.setupUi(self)
        self.pushButton.clicked.connect(self.check)
        self.pushButton_3.clicked.connect(self.load_doc1)
        self.pushButton_4.clicked.connect(self.load_all_docs)
        self.listWidget.clicked.connect(self.load_doc)
        self.actual_files = {}
        self.doc1 = None
        self.doc2 = None

    def load_doc1(self):
        file_path, _ = QtWidgets.QFileDialog.getOpenFileName(self, "Choose Word File",
        "", "Word Document (*.docx)")
        if file_path:
            self.doc2 = docx.Document(file_path)
            text = "\n".join(paragraph.text.strip() for paragraph in self.doc2.paragraphs)
            self.textEdit_2.setPlainText(text)

    def check(self):
        self.listWidget.clear()
        for file in self.actual_files:
            doc = self.actual_files[file][1]
            text = "\n".join(paragraph.text.strip() for paragraph in doc.paragraphs)
            similarity_ratio = simple_similarity_ratio(self.textEdit_2.toPlainText(), text)
            matching_indices = find_common_indices(self.textEdit_2.toPlainText(), text,
            match_size=5)
            print(matching_indices)
            # based on the matching indices in edit_text2 put hover effect on textEdit
            for index in matching_indices:
                cursor = self.textEdit_2.textCursor()
                cursor.setPosition(index[0], mode=QTextCursor.MoveAnchor)
                cursor.setPosition(index[1], mode=QTextCursor.KeepAnchor)
                format = QtGui.QTextCharFormat()

```



```

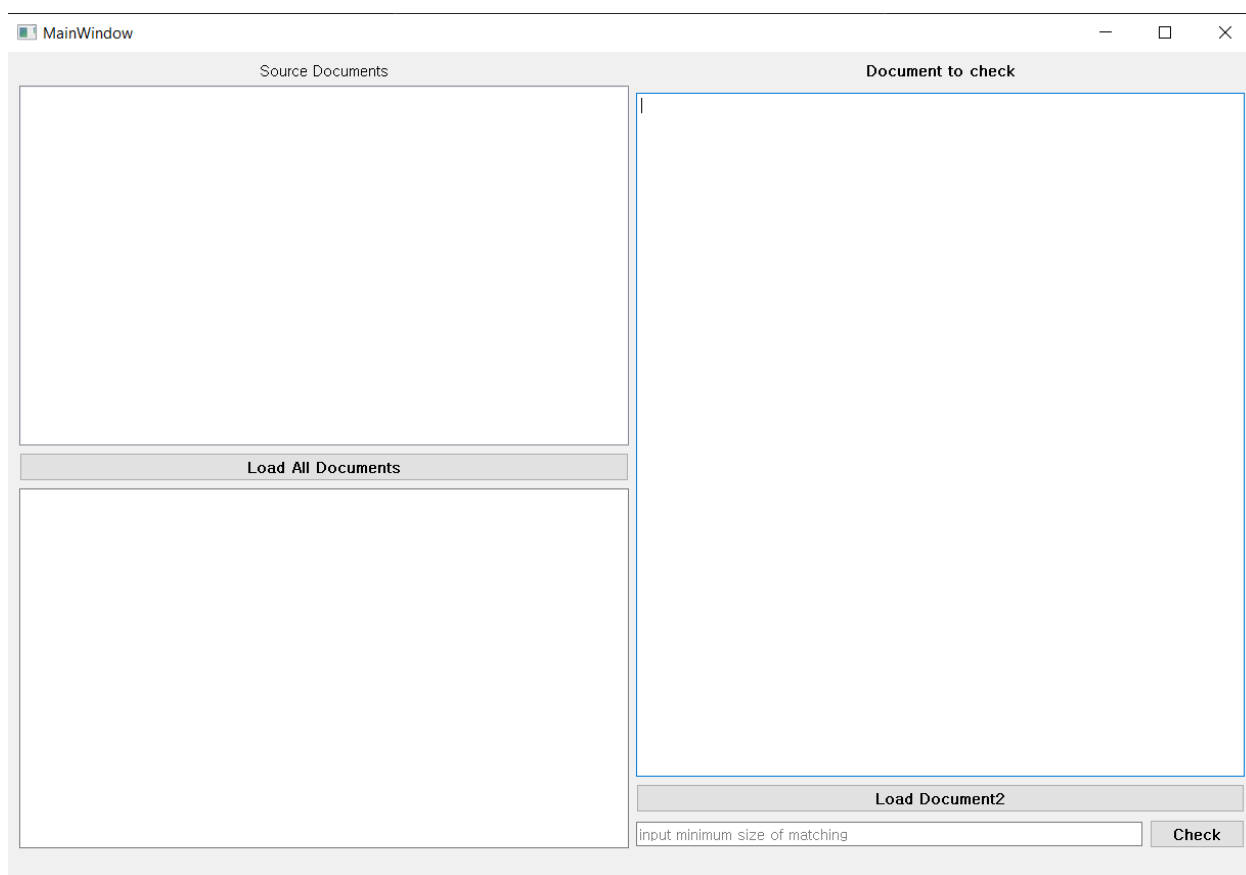
        format.setBackground(QtGui.QColor("yellow"))
        cursor.mergeCharFormat(format)
        self.textEdit_2.setTextCursor(cursor)
        self.listWidget.addItem(f"{self.actual_files[file][0]} - {similarity_ratio:.2f}%")
    def load_all_docs(self):
        files_ = QtWidgets.QFileDialog.getOpenFileNames(self, "Choose word
document", "", "Word document (*.docx)")
        if files:
            self.actual_files = { idx:(file,docx.Document(file)) for idx,file in
enumerate(files)}
            self.listWidget.clear()
            for file in files:
                self.listWidget.addItem(file)
        else:
            QtWidgets.QMessageBox.critical(self, "Error", "Choose at least one file")
    def load_doc(self):
        if self.listWidget.currentItem():
            file_index = self.listWidget.currentRow()
            if file_index != -1:
                doc = self.actual_files[file_index][1]
                text = "\n".join(paragraph.text.strip() for paragraph in doc.paragraphs)
                self.textEdit.setPlainText(text)
            else:
                QtWidgets.QMessageBox.critical(self, "Error", "Choose all documents")
if __name__ == "__main__":
    app = QApplication(sys.argv)
    window = MainWindow()
    window.show()
    sys.exit(app.exec_())

```

MainWindow klassi QMainWindow va Ui_MainWindowdan meros olib, GUI elementlarini sozlaydi. self.pushButton.clicked.connect(self.check) orqali “Tekshirish” tugmasi check() funksiyasiga ulanadi. load_doc1() funksiyasi orqali .docx fayl tanlanib, textEdit_2 oynasiga matni chiqariladi. load_all_docs() bir nechta .docx fayllarni tanlab, actual_files lug‘atiga saqlaydi va fayllar ro‘yxatga qo‘shiladi. check() funksiyasi textEdit_2dagi matnni barcha yuklangan fayllar bilan solishtiradi. Har bir fayl uchun simple_similarity_ratio() funksiyasi yordamida o‘xshashlik foizi hisoblanadi. find_common_indices() topilgan mos keluvchi indekslar asosida textEdit_2da sariq fon bilan ajratadi. QTextCursor yordamida indeks oralig‘i tanlanib, QTextCharFormat orqali fon rangi beriladi. load_doc() funksiyasi listWidgetdagi tanlangan hujjatni olib, textEdit oynasida ko‘rsatadi. if __name__ == "__main__" bo‘limida ilova ishga tushiriladi va asosiy oyna (MainWindow) ko‘rsatiladi.

Natija

Dastur interfeysi quyidagicha:



2-rasm. “Check plagiat” dasturining interfeysi.

Bu interfeys dastur tuzuvchisi uchun ham, foydalanuvchi uchun ham qulaylik yaratishga qaratilgan.

Dasturning asosiy tuzilmasi. Dastur oynasi ikkita asosiy ustunga bo‘lingan:

Chap ustun (Source Documents): manba hujjatlarini boshqarish va ko‘rish joyi. Load all Documents tugmasi bosilganda tekshirilishi kerak bo‘lgan fayllar tanlanadi. O‘ng ustun (Document to check): plagiatga tekshiriladigan hujjat joylashadi. Load Document2 tugmasini bosish orqali foydalanuvchiga tekshirilayotgan faylni fayl shaklida yuklash imkonini beradi. Bu fayl o‘ngdagi matn oynasiga avtomatik tushiriladi. “Input minimum size of matching” —bu yerga foydalanuvchi raqam kiritadi, masalan: “3” deb kiritsa, 3 so‘zdan kam bo‘lgan o‘xshash segmentlar hisobga olinmaydi. Bu me‘zon algoritmda threshold (chegaraviy qiymat) sifatida ishlatiladi.

“Check” tugmasi. Ushbu tugma bosilganda:

1. Tekshirilayotgan matn vs manba hujjatlari taqqoslanadi.
2. Plagiat mavjud bo‘lsa, natija chiqariladi.
3. Tekshirish uchun kiritilgan fayl yozuvlari tahlil qilinadi va aynan qaysi qismlari boshqa fayllar bilan bir xil ekanligi alohida rang bilan ajratiladi. Chap yuqori oynada ham o‘zgarishlar bo‘ladi. Ya’ni tanlangan barcha fayllardan so‘ng ekranga tekshirilayotgan matn bilan necha foizda bir xil ekanligi chiqariladi.

Har ikki ustun birgalikda dasturning asosiy qismlarini tashkil qiladi va Horizontal layout orqali yonma-yon joylashtirilgan.

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