

## 2. PDF File Extraction

**Task:** Extract text from PDF and handle edge cases.

**Explanation:**

The goal is to retrieve text from a PDF while addressing challenges like:

- Scanned images instead of text.
- Multi-column layouts.
- Encoding issues.
- Handling empty or malformed pages.
- **Tools:** Libraries like PyPDF2, pdfplumber, or OCR tools like Tesseract for scanned PDFs.
- **Sample Code Snippet:**

```
python
```

Copy code

```
import PyPDF2
```

```
from pdfplumber import open as pdf_open
```

```
def extract_text(file_path):
```

```
    with pdf_open(file_path) as pdf:
```

```
        text = ""
```

```
        for page in pdf.pages:
```

```
            text += page.extract_text()
```

```
    return text
```