RapidFort Assignment Documentation

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Project Overview

The **RapidFort Assignment** is a web application designed to convert Word documents (.docx) to PDF format. This application allows users to:

- Upload a .docx file
- View file metadata (e.g., file size, date of upload)
- Download the file in PDF format

Features

- **Core Features**:
  - Upload .docx files and convert them to PDF.
  - View metadata such as file size, creation date, etc.
  - Download the converted PDF.
- **Bonus Features**:
  - Hosted endpoint to test the service online.
  - Password protection for the generated PDF files.
  - Microservice architecture for modular functionality.

Hosted Links

The application is available online and can be accessed through the following links:

- **Web Application**: http://20.40.55.144:8000
- **API Endpoint**: http://20.40.55.144:8000/api/api/convert

Technical Requirements

The following tools are required to build and deploy the project:

- **Programming Framework**: Django REST Framework & Django
- **Containerization**: Docker
- **CI/CD**: GitHub Actions
- **Orchestration**: Kubernetes for deployment
- **Hosting service**: Microsoft Azure

Setup and Installation

Prerequisites

- **Docker**: Install Docker
- **Git**: Install Git

Installation Steps

1. **Clone the Repository**

git clone <repo-url>

cd <repo-name>

2. **Build Docker Image**

docker build -t rapidfort-docx-to-pdf .

3. **Run the Application with Docker** Run the application using the provided bash script:

./run.sh

4. **Deploy on Kubernetes :**If you want to deploy on a Kubernetes cluster:

kubectl apply -f k8s-deployment.yaml

Usage Guide

1. **Access the Web Application**: Open http://20.40.55.144:8000 in your web browser.
2. **Upload a .docx File**:
    - Click on the "Upload" button and select a .docx file from your device.
    - Once uploaded, the application will display metadata for the file.
3. **View Metadata**: The file metadata, such as file size, upload date, and document properties, will be displayed.
4. **Convert and Download as PDF**:
    - Click on the "Convert to PDF" button.
    - Once the conversion is complete, download the PDF using the download link.

Additional Details

- **Exception Handling**

The application is designed with error handling to manage unexpected issues (e.g., unsupported file types, conversion errors). Exception handling helps ensure a smooth user experience. Also, if the document is empty then nothing will be processed.

- **Dockerization**

The application has been Dockerized for easy deployment and portability. The Docker image can be built and run using the steps in the Installation and Setup section.

- **CI/CD Pipeline**

A CI/CD pipeline is set up using GitHub Actions to automate the Docker image build process. This ensures that any changes pushed to the repository trigger the pipeline to build and test the application.

- **Bash Script**

A run.sh script is included, providing simple instructions to start the Docker container and initialize the application.

- **Kubernetes Deployment**

For production deployment, Kubernetes manifest files are provided to deploy the application on a Kubernetes cluster. This ensures scalability and reliability in managing the application's containerized environment.