

PDF Report – Documentation

- **Overview**

The Incident Report Generator is a comprehensive tool designed to streamline the process of fetching incident data from a PostgreSQL database, dynamically generating an HTML report based on this data, and converting the HTML report into a styled PDF document. particularly useful for organizations to automate their incident reporting process, ensuring consistent, detailed, and easily accessible reports.

- **Design Idea**

Our goal is to create a design that is uniform, consistent, stable, flexible, and aesthetically pleasing. Given the challenges associated with PDF rendering, we explored multiple strategies before determining that a combination of WeasyPrint and Jinja2 for template rendering, along with HTML and CSS for design, and Python with psycopg2 for PostgreSQL database interaction, best fulfills our objectives.

- **Design Approach**

We go along with incorporating tables with rounded corners, vibrant elements, and a clear division of data into sections and subsections, separated by distinct markers for easy reference. We format our PDFs in A4 size, complete with page numbers for straightforward navigation. Aiming for efficiency and data flexibility, our approach ensures that even after testing with over 100 incidents, no document exceeded four pages, highlighting our commitment to concise and effective information presentation.

- **PDF Sections**

- **Section 1 (The Header) which has four sub sections:**

1. Main Title 'Incident Report'

2. Company Logo, which has been retrieved from the database along with its background color, ensuring a consistent and unique design throughout.
 3. Incident ID, which has been Fetched from the database.
 4. Incident Type, which has been Fetched from the database.
- **Section 2 (The Main Details) which has two sub sections:**
 1. Reported By, It encompasses key information about the user and reflects the dynamic nature of the data retrieved, as well as its integration into the design. The first four attributes are crucial and typically present in most incidents, while the subsequent ones vary according to the group and change based on the specific incident.
 2. Location, this feature retrieves location data in three distinct formats. First, a live Google Maps link is provided for direct use and sharing. Second, a map image is included for PDF previews and records. Finally, the GPS coordinates are given. All of these are seamlessly integrated into the elegant and dynamic design.
 - **Section 3 (The Other Details) which has two sub sections:**
 1. Fields - Sections - data, In this part, field data is retrieved, organized, and then selectively displayed based on content presence, within a table design that ensures consistency, accuracy, and flexibility. Additionally, the handling of field data is designed to accommodate various types of information, not limited to text and numbers, but also media.
 2. Fields – Sub Sections { 'injuries', 'damages', 'witnesses', 'vehicles' } – data , In this segment, data is fetched as fields and then individually presented in separate tables. This approach is employed to create a layout that is flexible, scalable, and robust.
 - **Section 4 (Media) which has 3 types of media:**
 - **The design of this section is highly sensitive and flexible, taking into consideration the quantity and variety of media it can accommodate.**
 - **Each piece of media is given a tailored layout to optimize the visual harmony of the grid. Should you need an image in its true aspect ratio, the 'Download Media' button facilitates downloading the media at its original dimensions, crucial for detailed analysis. In the PDF, media also functions as a preview, offering a glimpse before further investigation.**
 - **This section is equipped to manage images, videos, and audio files, displaying images directly in the preview. For videos and audio, it utilizes the icons you specified in the demo code you provided earlier.**

- **Section 5 (Footer):**

- **The copyright watermark, is carefully designed to avoid overlaying or obstructing the content it precedes.**

- **Notes**

- ✓ **We meticulously tested the code across over 100 varied incidents to ensure that it performs exactly as intended.**
- ✓ **We've implemented error handling mechanisms in our code to ensure the PDF functions smoothly, regardless of data inconsistencies or challenges in accessing certain media for any given incident.**