JUSTDIAL LIMITED

Image Scoring Report

TECHNOLOGY TEAM

☐ INTRODUCTION -

In the digital age, where visual content plays a pivotal role in capturing attention and conveying messages, the need for a systematic and objective evaluation of images has never been more crucial. The Image Scoring Report emerges as a sophisticated tool designed to meet this need, offering a comprehensive assessment framework for digital images. This report leverages advanced algorithms and meta extraction techniques to analyze and score images across multiple dimensions, ensuring that each image's quality, relevance, and appeal are meticulously evaluated.

☐ PURPOSE -

The primary purpose of the Image Scoring Report is to provide a quantifiable measure of an image's overall effectiveness and suitability for specific applications, such as online listings for hotels, restaurants, and other businesses. By evaluating images based on quality, classification, likes, and reports, the scoring system aims to:

- Enhance Visual Content Quality
- Improve Relevance
- Boost Engagement
- Maintain Content Integrity
- Inform Decision-Making

☐ TEAM -

Sr no.	Full Name	Designation
1	Sanjay Singh Nayal	Manager
2	Jayendra Patel	Team Lead
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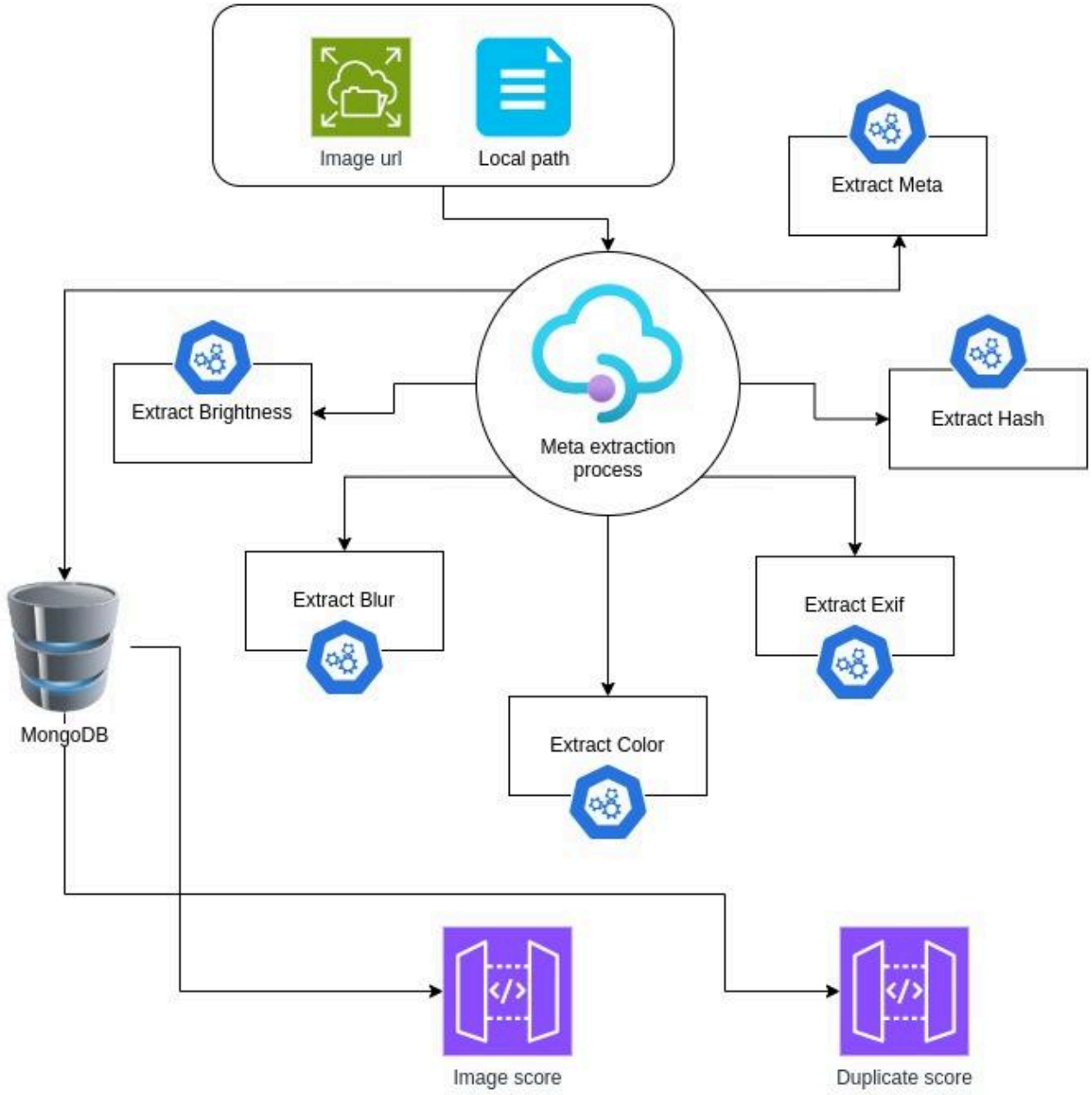
☐ REPORT OVERVIEW



The Image Scoring Report is designed to provide a comprehensive evaluation of digital images based on several critical parameters. It integrates a diverse range of metrics to quantify the quality, appeal, and relevance of an image in specific contexts, such as hotel or restaurant listings. The final score of an image is a cumulative result derived from four

main categories: Quality, Classification, Likes, and Report. This detailed methodology ensures that each image is assessed with precision, contributing to more informed decision-making processes.

➔ **FINAL SCORE CALCULATION**

The final score is the sum of scores from four main categories:

- Quality
- Classification
- Likes
- Report

Each category contributes to the overall evaluation, providing a detailed analysis of the image's attributes.

Example Image:

https://images.jdmagicbox.com/comp/bangalore/b6/080pxx80.xx80.150727105605.i6b6/catalogue/nasi-and-mee-koramangala-bangalore-malaysian-restaurants-rd039nmy6r.jpg

pid - 294693913 : 71.82177646606938

- {"classification":5,
- "final_score":71.821776466069,
- "like":0,
- "quality":56.821776466069,
- "quality_detail":

    {

    - "Blur_type":"clear", **[clear/ partial blur/ blur]**
    - "bscore":103.77182301808, **[brightness score]**
    - "clrfln":23.203828092684, **[colorfulness]**
    - "ppi":141, **[pixel per inch]**
    - "shpscr":75.891343832832, **[sharpness score]**
    - "size":1020380

    },

- "report":10,
- "source":30}

❖ QUALITY ASSESMENT-

Quality assessment plays a pivotal role in the scoring system, relying on meta extraction to analyze up to 100 attributes of an image. These attributes are stored in a MongoDB database for detailed analysis. The quality score is based on six attributes:

➔ **Size – Weightage: 20%**

Size is a fundamental aspect of image quality, serving as a direct indicator of an image's resolution and the richness of detail it can convey. Larger images typically offer higher resolution and better megapixel quality, allowing for a more detailed and nuanced visual experience. The size of an image is evaluated using the Extract Meta API, which assesses dimensions to ensure that images are of a sufficient scale to meet quality standards.

➔ **PPI (Pixels Per Inch) – Weightage: 15%**

PPI stands for Pixels Per Inch, a measure of an image's resolution that directly affects its clarity and sharpness. A higher PPI means more pixels are packed into each inch of the image, translating to finer detail and higher overall image quality. The Extract Meta API is utilized to determine an image's PPI, ensuring that only images with adequate resolution contribute positively to the quality score.

➔ **Blur Type – Weightage: 20%**

The clarity of an image is essential for its overall quality. The assessment of blur type involves analyzing the presence and type of blur within an image, including **Laplacian Blur**, **Fourier Transform**, and **Gaussian Blur**. The process involves dividing the image into a grid and evaluating each segment to accurately determine the image's clarity status. This evaluation is conducted through the Extract Blur API, which helps in identifying images as clear, partially blurred, or blurred, without relying on potentially biased classification models.

➔ **Brightness Score – Weightage: 12%**

Brightness is a critical factor in the visual appeal of an image. Even images with high resolution and sharpness can appear dull if they lack proper brightness. To address this, the Extract Brightness API is used to evaluate an image's brightness level, ensuring that the image has a balanced luminosity that enhances its appeal and visibility.

➔ **Colorfulness – Weightage: 20%**

The vibrancy and color diversity of an image significantly impact its attractiveness and the viewer's engagement. Images that are colorful and vibrant are generally more appealing than those with monotonous color schemes. The Extract Meta API assesses the colorfulness of an image, providing a score that reflects its vibrancy and color diversity.

➔ **Sharpness Score – Weightage: 13%**

Sharpness is indicative of how well-defined and crisp an image appears. It is a crucial quality parameter that affects the perceived detail and clarity of an image. The sharpness score is determined through preprocessing techniques, including gradient calculation using the Sobel operator and tenengrad (gradient magnitude) methods. This assessment is facilitated by the Extract Meta API, which helps in quantifying the sharpness of an image to ensure it meets the required standards.

Together, these parameters form a comprehensive framework for assessing the quality of images, ensuring that each image is evaluated on aspects critical to its effectiveness and visual appeal. This detailed approach to quality assessment underscores the commitment to maintaining high standards in image selection and utilization.

The total score from these attributes is then scaled down to 60 for the final calculation.

❖ CLASSIFICATION-

This category scores an image based on its relevance to specific classifications, such as hotels or restaurants. Each classification has a predetermined score, contributing to the image's overall evaluation.

❖ LIKES-

The number of likes an image receives plays a significant role in its scoring, reflecting its popularity and appeal to viewers. Depending on the number of likes on a particular image the score is given

❖ REPORT-

The presence or absence of reports against an image indicates its appropriateness. An image without any reports is considered good, while any reports against it negatively impact its score. In an image

- No report (Good) (10)

- even one single report (Bad) (-90)

❖ SOURCE-

While the source of an image is noted, it currently does not influence the final score. This parameter may be considered in future iterations of the scoring system.

We have calculated the parameters and kept it ready for use.

❖ CONCLUSION-

The Image Scoring Report offers a robust framework for evaluating digital images across various parameters, ensuring that each image's quality, relevance, and appeal are accurately assessed. This meticulous approach allows for more strategic decisions in content selection and utilization, enhancing the visual representation of businesses and services.