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Chapter 1

Namespace Index

1.1 Package List

Here are the packages with brief descriptions (if available):

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Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

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Chapter 3

Namespace Documentation

3.1 country_identifier Namespace Reference

Functions

- get_country_from_text (text)

3.1.1 Function Documentation

3.1.1.1 get_country_from_text()

```
get_country_from_text (
              text )
```

```
Get the country name and the number of digits in the national identification number from the provided text.

This function checks the provided text against predefined patterns, keywords, or other identifiers
for each country's national identification number. It returns the country name and the number of digits
in the national identification number if a match is found.

:param text: The text to be analyzed.
:type text: str
:return: A tuple containing the country name and the number of digits in the national identification number.
         If no match is found, it returns 'Unknown' and None.
:rtype: tuple[str, int] or tuple[str, None]
```

3.2 folder_parser Namespace Reference

Functions

- analyze_folder (folder_path)

3.2.1 Function Documentation

3.2.1.1 analyze_folder()

```
analyze_folder (
              folder_path )
```

```
Analyze the contents of a folder and extract filenames of images.

This function scans the specified folder for image files with common extensions (.jpg, .jpeg, .png, .bmp).
It then returns a list of filenames of images found in the folder.

:param folder_path: Path to the folder containing images.
:type folder_path: str
:return: A list of filenames of images found in the folder.
:rtype: list[str]

:raises OSError: If the specified folder does not exist or cannot be accessed.
```

3.3 integration_test Namespace Reference

Functions

- create_test_images ()
- test_analyze_folder (create_test_images)
- test_extract_text_from_images (create_test_images)
- test_get_country_from_text ()
- test_save_to_csv ()

3.3.1 Function Documentation

3.3.1.1 create_test_images()

```
create_test_images ( )
```

```
Fixture function to create temporary test images.

This function creates temporary test images in a temporary directory.

Returns:
    list: List of paths to the created test images.
```

3.3.1.2 test_analyze_folder()

```
test_analyze_folder (
              create_test_images )
```

```
Test the analyze_folder function.

This test function checks if the analyze_folder function correctly analyzes a folder
and returns a list of paths to the files within that folder.

Args:
    create_test_images: Fixture providing the paths to the temporary test images.

Returns:
    None

Raises:
    AssertionError: If the function does not return the expected result.
```

3.3.1.3 test_extract_text_from_images()

```
test_extract_text_from_images (
              create_test_images )
```

```
Test the extract_text_from_images function.

This test function checks if the extract_text_from_images function correctly extracts text
from a list of image files.

Args:
    create_test_images: Fixture providing the paths to the temporary test images.

Returns:
    None

Raises:
    AssertionError: If the function does not return the expected result.
```

3.3.1.4 test_get_country_from_text()

```
test_get_country_from_text ( )
```

```
Test the get_country_from_text function.

This test function checks if the get_country_from_text function correctly identifies the country
mentioned in a given text.

Returns:
    None

Raises:
    AssertionError: If the function does not return the expected result.
```

3.3.1.5 test_save_to_csv()

```
test_save_to_csv ( )
```

```
Test the save_to_csv function.

This test function checks if the save_to_csv function correctly saves data to a CSV file.

Returns:
    None

Raises:
    AssertionError: If the function does not save the data correctly.
```

3.4 main Namespace Reference

Functions

- main ()

3.4.1 Function Documentation

3.4.1.1 main()

```
main ( )
```

Main function to process images, extract text, identify countries, and save results to a CSV file.

This function performs the following steps:
1. Analyzes a folder containing images.
2. Extracts text from images using OCR.
3. Identifies the country from the extracted text.
4. Prints information about each image, including the registration number and country.
5. Saves the output data to a CSV file.

3.5 save_to_csv Namespace Reference

Functions

- save_to_csv (data, filename)

3.5.1 Function Documentation

3.5.1.1 save_to_csv()

```
save_to_csv (
              data,
              filename )
```

Save data to a CSV file.

This function takes a list of dictionaries containing data and saves it to a CSV file.

:param data: Data to be saved to the CSV file.
:type data: list[dict]
:param filename: Path to the output CSV file.
:type filename: str

3.6 test_extract_text_from_images Namespace Reference

Functions

- test_extract_text_from_images ()

3.6.1 Function Documentation

3.6.1.1 test_extract_text_from_images()

```
test_extract_text_from_images ( )
```

```
Test the extract_text_from_images function.

This test function checks if the extract_text_from_images function
correctly processes a list of image paths and returns the expected results.

Returns:
    None

Raises:
    AssertionError: If the function does not return the expected result.
```

3.7 test_folder_parser Namespace Reference

Functions

- create_test_files (tmpdir)
- test_analyze_folder (create_test_files)

3.7.1 Function Documentation

3.7.1.1 create_test_files()

```
create_test_files (
              tmpdir )
```

```
Fixture function to create test files in a temporary directory.

This function creates test files with various extensions in a temporary directory
for use in testing the analyze_folder function.

Args:
    tmpdir: Pytest built-in fixture providing a temporary directory.

Returns:
    str: Path to the created temporary directory.
```

3.7.1.2 test_analyze_folder()

```
test_analyze_folder (
              create_test_files )
```

```
Test the analyze_folder function.

This test function checks if the analyze_folder function correctly analyzes a folder
and returns a list of paths to the files within that folder.

Args:
    create_test_files: Fixture providing the path to the temporary directory containing test files.

Returns:
    None

Raises:
    AssertionError: If the function does not return the expected result.
```

3.8 test_get_country_from_text Namespace Reference

Functions

- test_get_country_from_text ()

3.8.1 Function Documentation

3.8.1.1 test_get_country_from_text()

```
test_get_country_from_text ( )
```

```
Test the get_country_from_text function.

This test function checks if the get_country_from_text function
correctly identifies the country and digits from a given text.

Returns:
    None

Raises:
    AssertionError: If the function does not return the expected result.
```

3.9 test_save_to_csv Namespace Reference

Functions

- create_test_data (tmpdir)
- test_save_to_csv (create_test_data)

3.9.1 Function Documentation

3.9.1.1 create_test_data()

```
create_test_data (
              tmpdir )
```

```
Fixture function to create test data and a temporary CSV file path.

This function creates test data in the form of a list of dictionaries
and provides a path to a temporary CSV file for use in testing the save_to_csv function.

Args:
    tmpdir: Pytest built-in fixture providing a temporary directory.

Returns:
    tuple: A tuple containing the test data and the path to the temporary CSV file.
```

3.9.1.2 test_save_to_csv()

```
test_save_to_csv (
              create_test_data )
```

```
Test the save_to_csv function.

This test function checks if the save_to_csv function correctly saves data to a CSV file.

Args:
    create_test_data: Fixture providing the test data and the path to the temporary CSV file.

Returns:
    None

Raises:
    AssertionError: If the function does not save the data correctly.
```

3.10 text_extractor Namespace Reference

Functions

- extract_text_from_images (image_paths)

Variables

- extracted_texts = extract_text_from_images(image_paths)
- list image_paths = ['image1.jpg', 'image2.jpg']

3.10.1 Function Documentation

3.10.1.1 extract_text_from_images()

```
extract_text_from_images (
              image_paths )
```

```
Extract text from images using EasyOCR and Tesseract OCR.

This function extracts text from images using two OCR engines: EasyOCR and Tesseract OCR.
It first uses EasyOCR to perform initial text extraction, supporting both English and Arabic languages.
Then, it utilizes Tesseract OCR for additional text extraction.
The function chooses the extracted text with higher confidence or prioritizes EasyOCR if both are similar.

:param image_paths: List of paths to image files.
:type image_paths: list[str]
:return: List of extracted texts from images.
:rtype: list[str]

:raises Exception: If there is an error during text extraction.
```

3.10.2 Variable Documentation

3.10.2.1 extracted_texts

```
extracted_texts = extract_text_from_images(image_paths)
```

3.10.2.2 image_paths

```
list image_paths = ['image1.jpg', 'image2.jpg']
```

Chapter 4

File Documentation

4.1 /home/wassef/Desktop/Licence_plate_identification/lp_↩ detection/country_identifier.py File Reference

Namespaces

- namespace country_identifier

Functions

- get_country_from_text (text)

4.2 /home/wassef/Desktop/Licence_plate_identification/lp_↩ detection/folder_parser.py File Reference

Namespaces

- namespace folder_parser

Functions

- analyze_folder (folder_path)

4.3 /home/wassef/Desktop/Licence_plate_identification/lp_↩ detection/main.py File Reference

Namespaces

- namespace main

Functions

- main ()

4.4 /home/wassef/Desktop/Licence_plate_identification/lp_↩ detection/save_to_csv.py File Reference

Namespaces

- namespace save_to_csv

Functions

- save_to_csv (data, filename)

4.5 /home/wassef/Desktop/Licence_plate_identification/lp_↩ detection/text_extractor.py File Reference

Namespaces

- namespace text_extractor

Functions

- extract_text_from_images (image_paths)

Variables

- extracted_texts = extract_text_from_images(image_paths)
- list image_paths = ['image1.jpg', 'image2.jpg']

4.6 /home/wassef/Desktop/Licence_plate_↩ identification/tests/integration_test/integration_test.py File Reference

Namespaces

- namespace integration_test

Functions

- create_test_images ()
- test_analyze_folder (create_test_images)
- test_extract_text_from_images (create_test_images)
- test_get_country_from_text ()
- test_save_to_csv ()

4.7 /home/wassef/Desktop/Licence_plate_identification/tests/unit_↩ tests/test_extract_text_from_images.py File Reference

Namespaces

- namespace test_extract_text_from_images

Functions

- test_extract_text_from_images ()

4.8 /home/wassef/Desktop/Licence_plate_identification/tests/unit_↩ tests/test_folder_parser.py File Reference

Namespaces

- namespace test_folder_parser

Functions

- create_test_files (tmpdir)
- test_analyze_folder (create_test_files)

4.9 /home/wassef/Desktop/Licence_plate_identification/tests/unit_↩ tests/test_get_country_from_text.py File Reference

Namespaces

- namespace test_get_country_from_text

Functions

- test_get_country_from_text ()

4.10 /home/wassef/Desktop/Licence_plate_identification/tests/unit_↩ tests/test_save_to_csv.py File Reference

Namespaces

- namespace test_save_to_csv

Functions

- create_test_data (tmpdir)
- test_save_to_csv (create_test_data)