
Photocrypt

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PHOTOCRYPT

1.1 What is photcrypt?

Photocrypt is a python package provides tools to encrypt and decrypt various image formats.

- Documentation: [<https://photocrypt.readthedocs.io/>](https://photocrypt.readthedocs.io/)
- Github: [<https://github.com/Kullmann/Photocrypt>](https://github.com/Kullmann/Photocrypt)
- PyPI [<https://pypi.org/project/photocrypt/>](https://pypi.org/project/photocrypt/)

1.2 Requirements

Photocrypt requires Python 3.6 version or newer.

1.3 Installation

You can install our pacakage with **pip**:

```
pip install photocrypt
```

This will install dependencies of photocrypt as well.

1.4 What's inside

Photocrypt has five submodules including itself:

- **photocrypt**: operations for image encryption
- **photocrypt.core**: basic classes and operations used within photocrypt.
- **photocrypt.crypto**: ciphers that work on bytes.
- **photocrypt.image**: image classes and operations.
- **photocrypt.utils**: useful classes and operations.

QUICK START

This page will show simple usages of our package.

2.1 Generate Keys

The code below shows how to generate keys:

```
from photocrypt.crypto.RSA import generate_key, save_keypair

# generate key pair
private_key, public_key = generate_key()

# save key pair
save_keypair((private_key, public_key), ("private.pem", "public.pem"))
```

2.2 Encrypt Image

The code below shows how to load public key and encrypt an image:

```
from photocrypt import open_image, encrypt_image
from photocrypt.crypto.RSA import load_key

# open image
image = open_image("samples/tuatara.jpg")

# load public key
public_key = load_key("public.pem")

# encrypt image
image_enc = encrypt_image(image, public_key)

# save image
image_enc.save("samples/tuatara_enc.jpg")
```

2.3 Decrypt Image

The code below shows how to load private key and decrypt an image:

```
from photocrypt import open_image, decrypt_image
from photocrypt.crypto.RSA import load_key

# open image
image = open_image("samples/tuatara_enc.jpg")

# load private key
private_key = load_key("private.pem")

# encrypt image
image_enc = encrypt_image(image, private_key)

# save image
image.save("samples/tuatara_dec.jpg")
```


USER DOCUMENTATION

3.1 `photocrypt.core`

3.1.1 Introduction

The `photocrypt.core` module contains basic classes and operations used within `photocrypt` package.

3.1.2 `photocrypt.core.image`

3.1.3 `photocrypt.core.bdata`

3.1.4 `photocrypt.core.bstream`

3.1.5 `photocrypt.core.cipher`

3.1.6 `photocrypt.core.packer`

3.2 `photocrypt.crypto`

3.2.1 Introduction

The `photocrypt.crypto` module contains ciphers and operations related to cryptography.

3.2.2 `photocrypt.crypto.AES`

3.2.3 `photocrypt.crypto.RSA`

3.3 `photocrypt.image`

3.3.1 Introduction

The `photocrypt.image` module contains image classes that can be used by `photocrypt` operations.

3.3.2 `photocrypt.image.Bitmap`

3.3.3 `photocrypt.image.CryptoBitmap`

3.4 `photocrypt.utils`

3.4.1 Introduction

The `photocrypt.utils` module contains image classes that can be used by photocrypt operations.

3.4.2 `photocrypt.utils.keymgr`

All operations in photocrypt package are organized in sub-modules; each sub-module includes specific class of functionalities.

Package	Description
<i><code>photocrypt.core</code></i>	contains basic classes and operations used within photocrypt package.
<i><code>photocrypt.crypto</code></i>	contains ciphers and operations related to cryptography.
<i><code>photocrypt.image</code></i>	contains image classes that can be used by photocrypt operations.
<i><code>photocrypt.utils</code></i>	conatins useful tools

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