# CS 340 README

## About the Project/Project Title

*# Project Title: CRUD Python Module for MongoDB*

*## About the Project*

*This project is a Python module that provides Create (C) and Read (R) functionalities (part of CRUD operations) for MongoDB. It serves as a connector between Python applications and MongoDB, facilitating the insertion and retrieval of data.*

## Motivation

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*The motivation behind this project is to simplify the interaction between Python applications and MongoDB by providing an easy-to-use module for basic database operations. This module supports code reusability and can be easily integrated into various Python projects requiring CRUD functionality.*

## Getting Started

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*### Prerequisites*

*- A running MongoDB instance*

*- Python installed on your system*

*- Proper authentication credentials for MongoDB (username: `secure credential `)*

*### Setup*

*1. Clone this repository to your local machine.*

*2. Navigate to the directory containing the CRUD module.*

*3. Ensure MongoDB is running and accessible.*

*### Quick Start*

*- Instantiate the `AnimalShelter` class with appropriate credentials and connection details.*

*- Call the `create` and `read` methods to perform operations on the MongoDB collection.*

## Installation

*### Tools Used*

*- MongoDB: Chosen for its scalability, flexibility, and ease of use with various data formats.*

*- Python: Selected for its simplicity, readability, and extensive library support.*

*- PyMongo: The official Python driver for MongoDB, used to interact with the MongoDB instance.*

*### Installation Steps*

*1. Install MongoDB from the [official website] (https://www.mongodb.com/try/download/community).*

*2. Install Python from the [official website] (https://www.python.org/downloads/).*

*3. Install the PyMongo driver using pip:*

*```shell*

*pip install pymongo*

*```*

## Usage

### Code Example

*### Code Example*

*```python*

*from pymongo import MongoClient*

*class AnimalShelter(object):*

*def \_\_init\_\_(self, username, password, host, port, db, collection):*

*#Initialize connection*

*def create(self, data):*

*#Implement the C-create in CRUD*

*def read(self, query):*

*#Implement the R-Read in CRUD*

*def update(self, query, multi = False):*

*#implement the U-Update in CRUD*

*def delete(self, query, multi = False):*

*#implement the D-Delete in CRUD*

### Tests

*####Test code example:*

*import module\_four*

*import os*

*#####Initiate class with credentials and collection details*

*shelter – module\_four.AnimalShelter(‘username’, ‘password’, ‘hostname’, port, ‘db alias (AAC)’, ‘collection name’)*

*#####Test create method*

*insert\_data = {‘name’: ‘Pet Name’, ‘type’: ‘Animal Type’, ‘age’: ‘Animal age’, ‘breed’: ‘Animal Breed’}*

*insert\_result = shelter.create(insert\_data)*

*print(‘Output: Insert data attempt was successful: {insert\_data}’)*

*#####Test read method*

*query = {‘type’: ‘Entered Animal Type’} #Cat/dog/bird…*

*read\_result = shelter.read(query)*

*print(‘Read results: {read\_result}’)*

### *#####Test update method*

*query = {‘name’: ‘Name in line you want to update.’} #Fluffy, Spot…*

*query\_update = {‘type’: ‘Update type…Cat, Dog…’, ‘age’: ‘Update age’, …}*

*update\_count = shelter.update(query, query\_update, multi = False)*

*print(‘Updated {updated\_count} record(s) successfully.’)*

### *#####Test delete method*

*delete\_query = {‘name’: ‘Name in line you want to delete.’} #Fluffy, Spot…*

*deleted\_count = shelter.delete(delete\_query, multi=False)*

*print(‘Deleted {deleted\_count} record(s) successfully.’)*

### Screenshots

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*A screenshot of a computer code

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## Contact

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