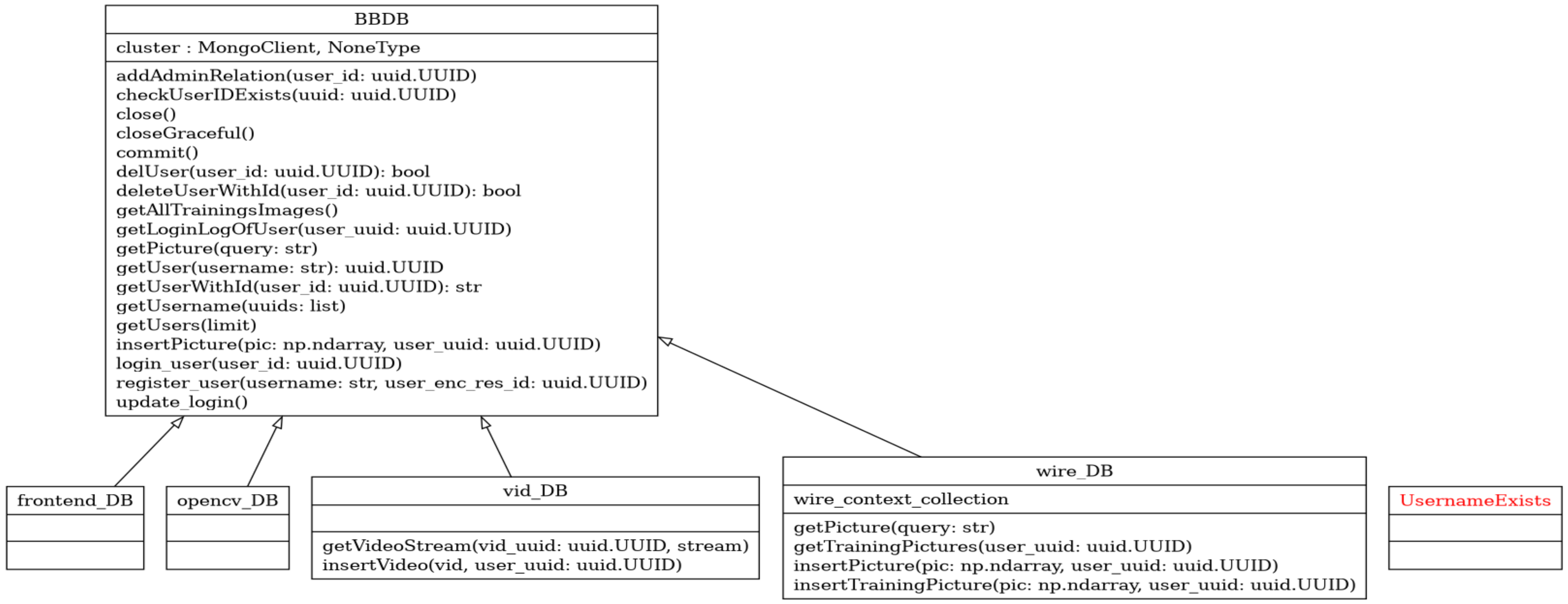
Presentation Big Brother - 2. Milestone

Database

Database API Overview


BBDB
cluster : MongoClient, NoneType
addAdminRelation(user_id: uuid.UUID)
checkUserIDExists(uuid: uuid.UUID)
close()
closeGraceful()
commit()
delUser(user_id: uuid.UUID): bool
deleteUserWithId(user_id: uuid.UUID): bool
getAllTrainingsImages()
getLoginLogOfUser(user_uuid: uuid.UUID)
getPicture(query: str)
getUser(username: str): uuid.UUID
getUserWithId(user_id: uuid.UUID): str
getUsername(uuids: list)
getUsers(limit)
insertPicture(pic: np.ndarray, user_uuid: uuid.UUID)
login_user(user_id: uuid.UUID)
register_user(username: str, user_enc_res_id: uuid.UUID)
update_login()
frontend_DB
opencv_DB
vid_DB
getVideoStream(vid_uuid: uuid.UUID, stream)
insertVideo(vid, user_uuid: uuid.UUID)
wire_DB
wire_context_collection
getPicture(query: str)
getTrainingPictures(user_uuid: uuid.UUID)
insertPicture(pic: np.ndarray, user_uuid: uuid.UUID)
insertTrainingPicture(pic: np.ndarray, user_uuid: uuid.UUID)
UsernameExists

Example code: login

```python
db = wire_DB()
user_id = db.register_user("user", None)

# login start
timestamp = db.login_user(user_id)
db.getTrainingPictures(user_id)

# user gives us picture
user_input_pic = ...

# authenticate picture

# updating login
pic_uuid = db.insertTrainingPicture(
    np.asarray(user_input_pic, dtype=np.float64),
    user_id)
db.update_login(user_uuid=user_id,
                time=timestamp,
                inserted_pic_uuid=pic_uuid)
```

Example code: inserting videos

```
db = vid_DB()
source = "some/path/to/file"
user_id = db.register_user("user", None)

stream_insert = open(source, "rb+")
vid_uuid = self.db.insertVideo(stream_insert, user_id)
stream_insert.close()

stream_out = open(compare, "wb+")
self.db.getVideoStream(vid_uuid, stream_out)
stream_out.close()
```

TODOs

- Fixing problems that arise when having users that access the database concurrently
- Implement further tests
- Implement requests regarding features (mainly: vid_DB)
- **Group size:** Only 1-2 people work in database group (more people will work in the logic group)

Frontend

(Frontend) 2. Milestone Done

Design:

- new design of the homepage

Routes:

- added missing routes
  ✉e.g. sign up and sign in with photo

- Bug fixes with backend and logic Team

(Frontend) TODO

Design:

- Small refinements to the website

Routes:

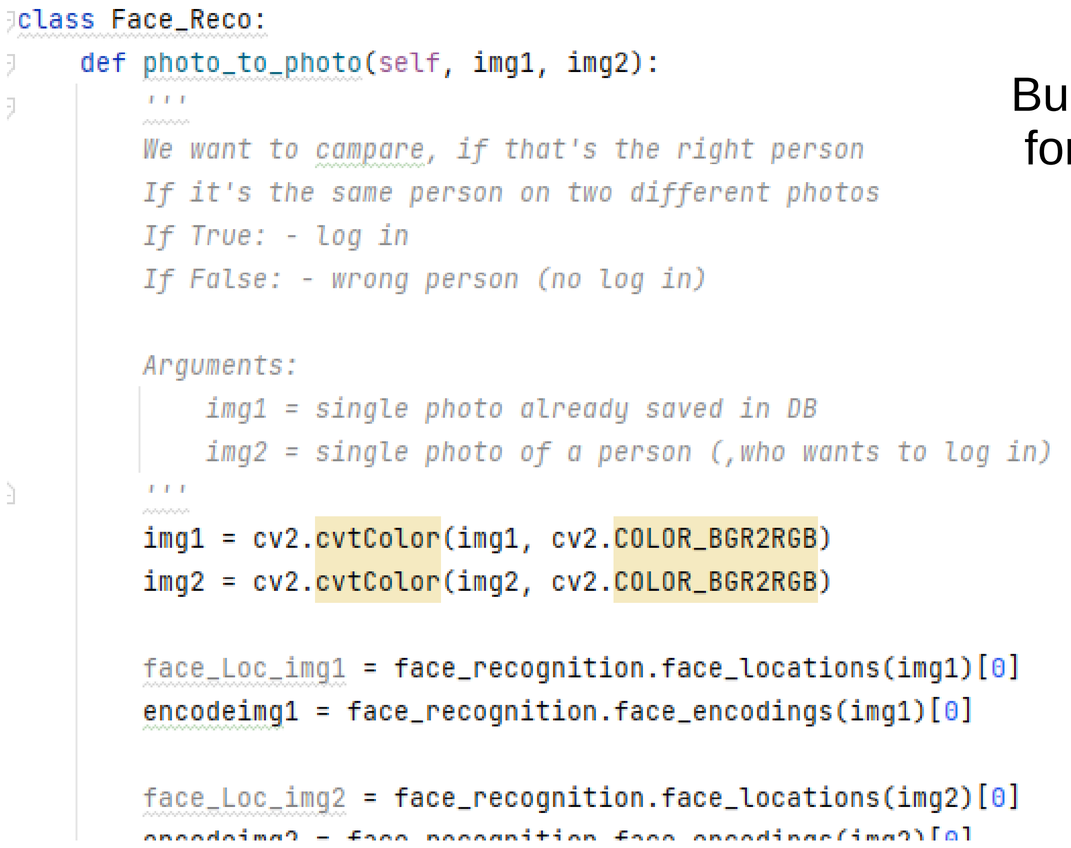
- Fix remaining interface issues e.g. login with camera
- Adding new routes e.g. Face Regocnition
-

Users:

- ´Allow access to functionalities by multiple users

Logic

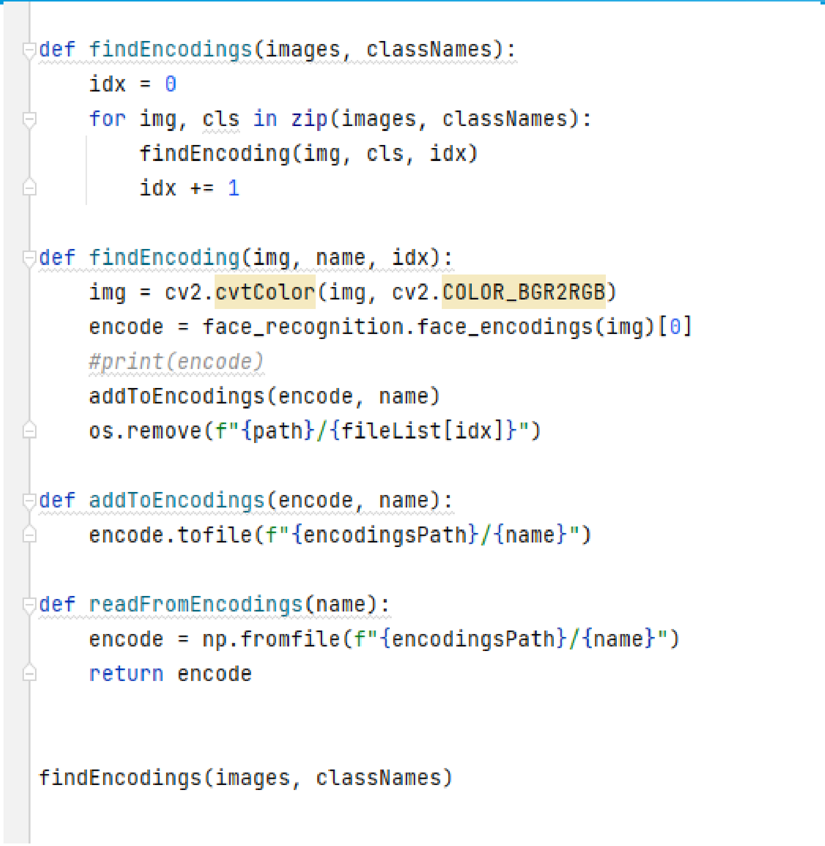
Logik (Face Recog)



```
class Face_Reco:
    def photo_to_photo(self, img1, img2):
        '''
        We want to campare, if that's the right person
        If it's the same person on two different photos
        If True: - log in
        If False: - wrong person (no log in)

        Arguments:
            img1 = single photo already saved in DB
            img2 = single photo of a person (,who wants to log in)
        '''
        img1 = cv2.cvtColor(img1, cv2.COLOR_BGR2RGB)
        img2 = cv2.cvtColor(img2, cv2.COLOR_BGR2RGB)

        face_Loc_img1 = face_recognition.face_locations(img1)[0]
        encodeimg1 = face_recognition.face_encodings(img1)[0]

        face_Loc_img2 = face_recognition.face_locations(img2)[0]
        encodeimg2 = face_recognition.face_encodings(img2)[0]
```

Building of a class interface
for front-end to use

Logik (Face Recog)



```
def findEncodings(images, classNames):
    idx = 0
    for img, cls in zip(images, classNames):
        findEncoding(img, cls, idx)
        idx += 1

def findEncoding(img, name, idx):
    img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
    encode = face_recognition.face_encodings(img)[0]
    #print(encode)
    addToEncodings(encode, name)
    os.remove(f"{path}/{fileList[idx]}")

def addToEncodings(encode, name):
    encode.tofile(f"{encodingsPath}/{name}")

def readFromEncodings(name):
    encode = np.fromfile(f"{encodingsPath}/{name}")
    return encode


findEncodings(images, classNames)
```

Creating a script to encode faces once instead every time the program is running

Questions?