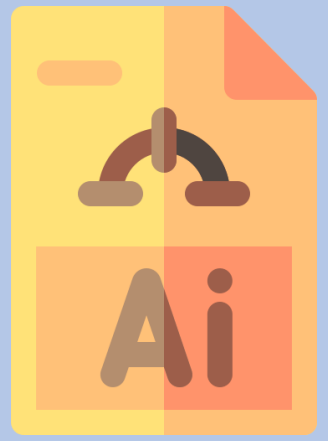
PinPlace: CNN based location image search And its adaptation to social network

TEAM H Week 12



CNN Build

Modify dataset and complete CNN model

CHE SEUNG YUN

Front end

Sign up & login pages

JEONG CHAEWON, LEE JI SEOP

CNN Model build > Week 9

CNN is selected

➢ **We tried modified dataset but…**

- We cannot get better result than last dataset
- We tried modifying Namsan Seoul tower data but we can get lower accuracy and lower performance on confusion matrix
- So, we choose last dataset and model..

Confusion matrix

➢ Model spec

- ResNet50 model is adopted.
- Total image data : 25,450
- Training & validation data: 17,815
- Input Size : 128 * 128
- Train set, Validation set, Test set : 5:2:3
- Classes : 10
- Batch size : 32 epoch : 80
- Optimizer : Nadam

"Our selected model"

conv5_block3_2_conv (Conv2D)	(None, 4, 4, 512)	2359296	conv5_block3_2_pad[0][0]
conv5_block3_2_bn (BatchNormali	(None, 4, 4, 512)	2048	conv5_block3_2_conv[0][0]
conv5_block3_2_relu (Activation	(None, 4, 4, 512)	0	conv5_block3_2_bn[0][0]
conv5_block3_3_conv (Conv2D)	(None, 4, 4, 2048)	1050624	conv5_block3_2_relu[0][0]
conv5_block3_out (Add)	(None, 4, 4, 2048)	0	conv5_block2_out[0][0] conv5_block3_3_conv[0][0]
post_bn (BatchNormalization)	(None, 4, 4, 2048)	8192	conv5_block3_out[0][0]
post_relu (Activation)	(None, 4, 4, 2048)	0	post_bn[0][0]
avg_pool (GlobalAveragePooling2	(None, 2048)	0	post_relu[0][0]
predictions (Dense)	(None, 10)	20490	avg_pool[0][0]

Total params: 23,585,290
Trainable params: 23,539,850
Non-trainable params: 45,440

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3)
```

```
history = model.fit(X_train, y_train, batch_size=32, epochs=80, validation_split=0.2)
```

```
model = ResNet50V2(include_top=True, weights=None, input_shape=(128,128,3), classes=10)
model.compile(loss='categorical_crossentropy', optimizer='Nadam', metrics=['accuracy'])
```

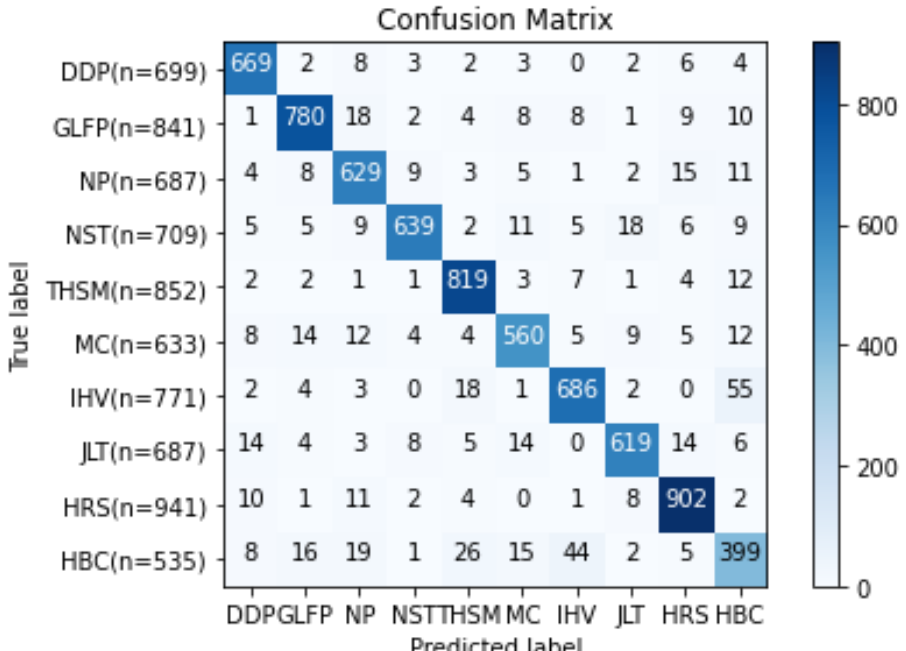
CNN Model build > Week 9

Result of Select model

- Accuracy of model is 91.12%

```
#모델 정확도 출력
print("정확도 : %.4f" % (model.evaluate(X_test, y_test)[1]))
```

```
230/230 [==============================] - 7s 25ms/step - loss: 0.4801 - accuracy: 0.9112
정확도 : 0.9112
```



- DDP : Dongdaemun Design Plaza
- GLFP : Gyeongui Line Forest Park
- NP : Naksan Park
- NST : Namsan Seoul Tower
- THSM : The Hyundai Seoul Mall
- MC : Myeongdong Cathedral
- IHV : Ikseon Dong Hanok Village
- JLT : Jamsil Lotte Tower
- HRS : Han River Sebitseom
- HBC : Haebangchon

PINPLACE *WEEK 12*

: CNN based location image search & its adaptation to social network

Functions

a. Find place's location (embedded CNN)

b. List up Hot place (w/ Sorting algorithm)

c. Uploading data that users have

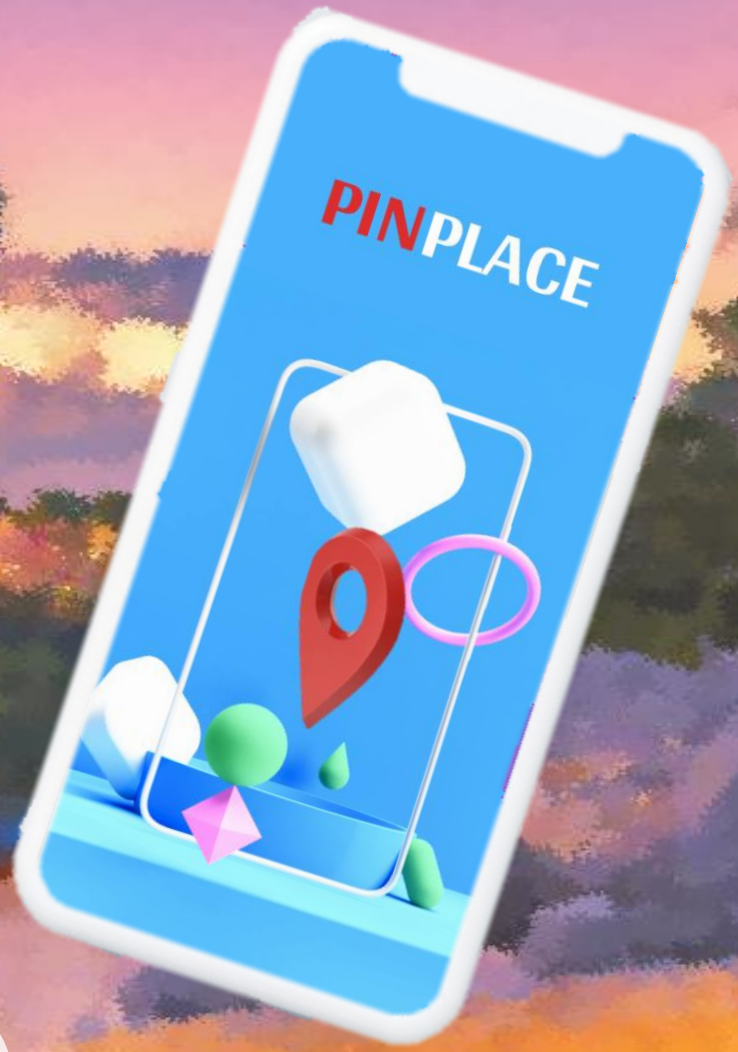
d. SNS (w/ Recommendation algorithm)

Tools

Overleaf colab

Stacks

HTML CSS JS Bootstrap MySQL node TensorFlow.js



Frontend Part >Status

10 Pages

- Cover Page — 10/17 Completed
- Start page — 10/24 Completed
- Guide Page — 11/2 Completed
- Login Page — 11/2 Completed
- Find Location Page — 10/31 Completed
- List Up Page — 11/2 Completed
- Upload picture Page — 10/31 Completed
- SNS Page — 11/22 Completed
- My Page — 11/16 completed

All Completed

How to develop?

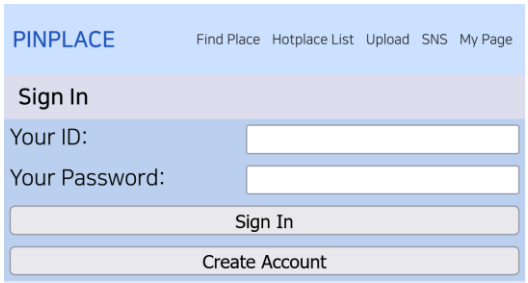
“Responsive Web based Application”

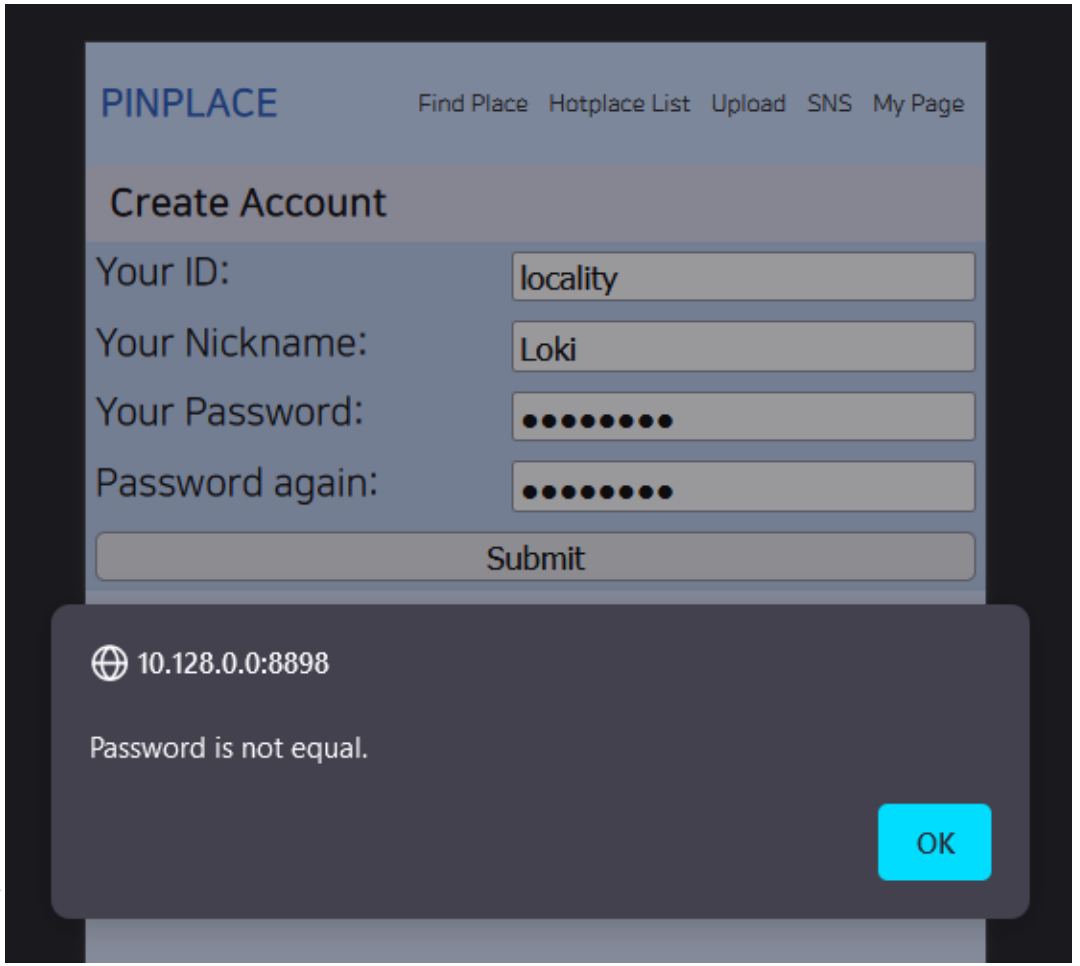
-Programming Language
: HTML,CSS, Javascript

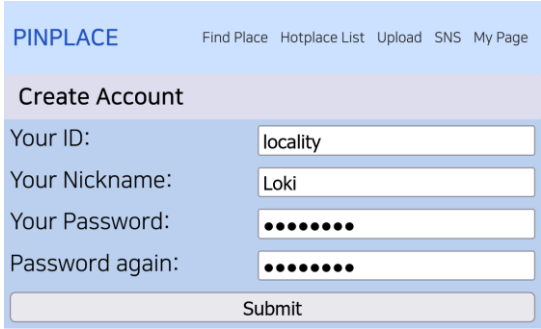
-DEMO UI (The most optimal size)
: Iphone X (375 * 812)

Frontend

Sign up & login page

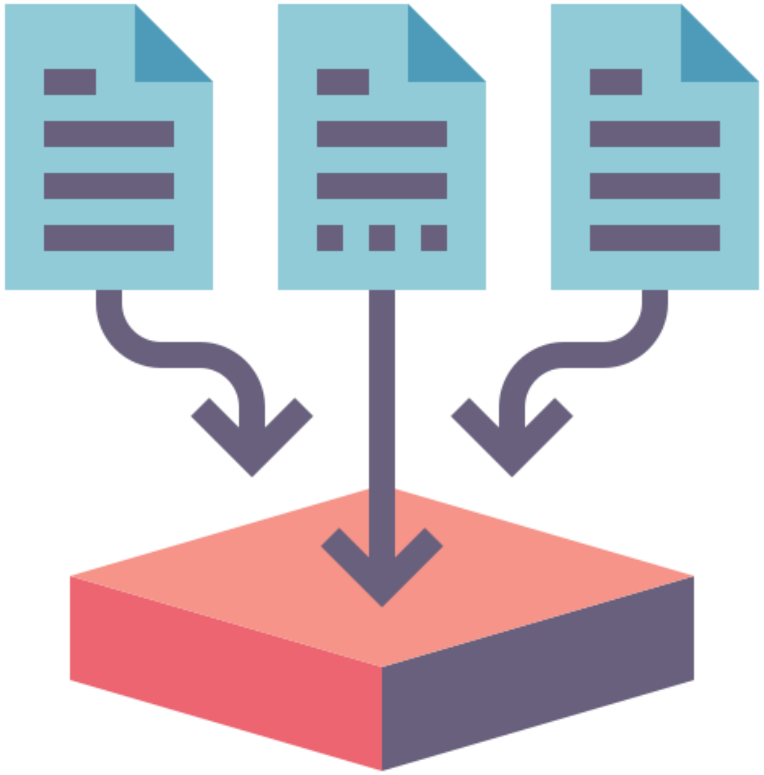






As the professor suggested, we created a page for users to sign up and login.

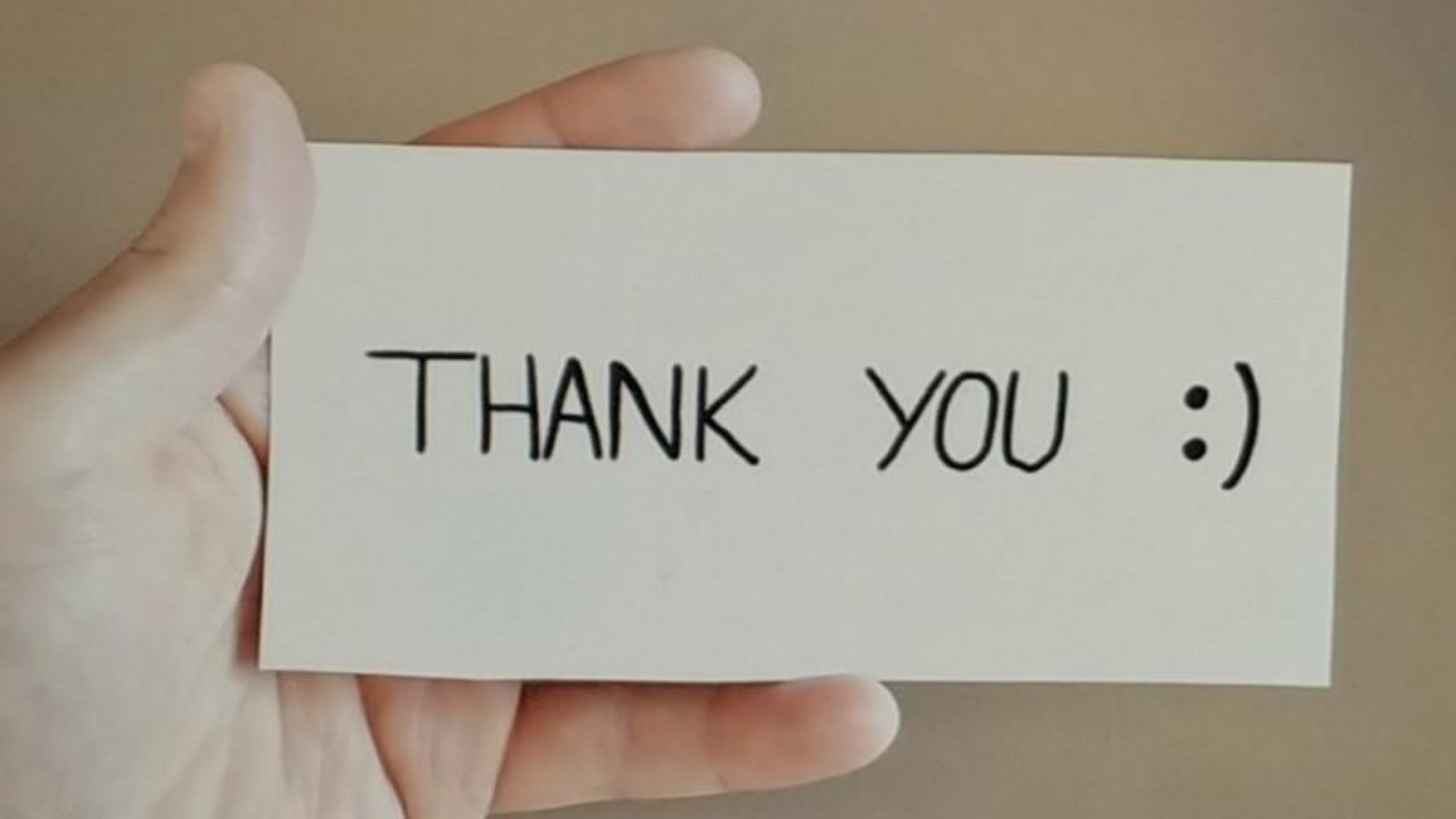
Frontend



We finally put the files together.
&
Connect Backend part (Database)

All> To do

- **To make final outputs**
  - *Write to final report & prepare final presentation*
- **QA Testing & final fix**
- **Connection check**


THANK YOU :)