

# “Little guard against epidemic”

## 1. Creation background and requirements

In 2020, a sudden epidemic has disrupted our lives. During the anti epidemic period, every move of all the people embodies the Chinese spirit of working together to overcome difficulties. China's status as a great power is obvious to all. During the isolation period, looking at those workers on the front line of anti epidemic, we also want to contribute to them, So we aimed at an important but tedious and laborious control in the epidemic: visitor registration. We wanted to use the pepper robot to complete this work, and also realized the function of introducing our school to visitors(Figure 1)



Figure 1

## 2. Outline design

The main functions are: "hello", "goodbye", "thank you", "visitor registration", "Introduction to the school" ( Figure 2)

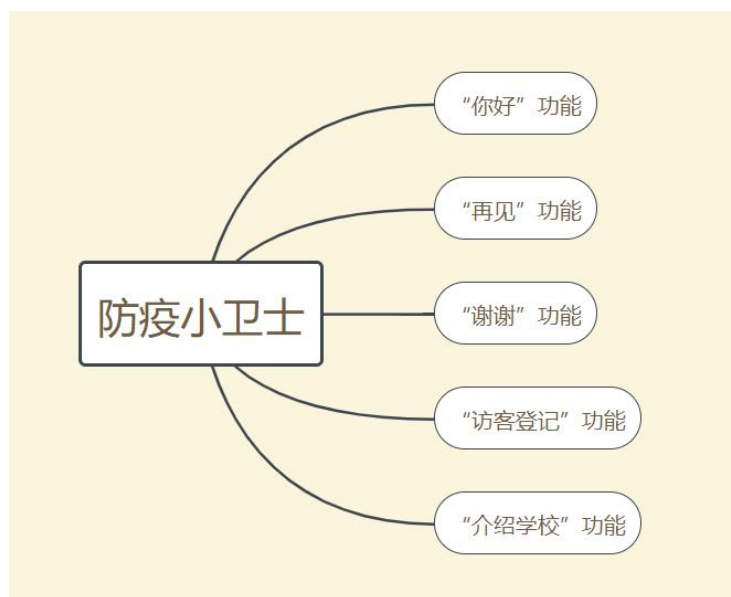


Figure 2

### 3. Detailed design

#### 3.1 visitor registration

Mainly uses Baidu AI's ID card recognition. Figure 3 is the implementation idea, figure 4 is the main implementation process, and figure 5 is the main code. (Refer to Baidu AI official document: <https://ai.baidu.com/ai-doc/IMAGERECOGNITION/Kk3bcxbxj>)

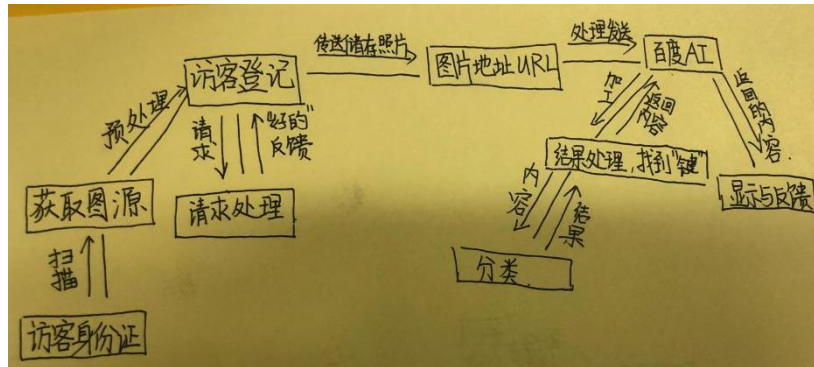


Figure 3

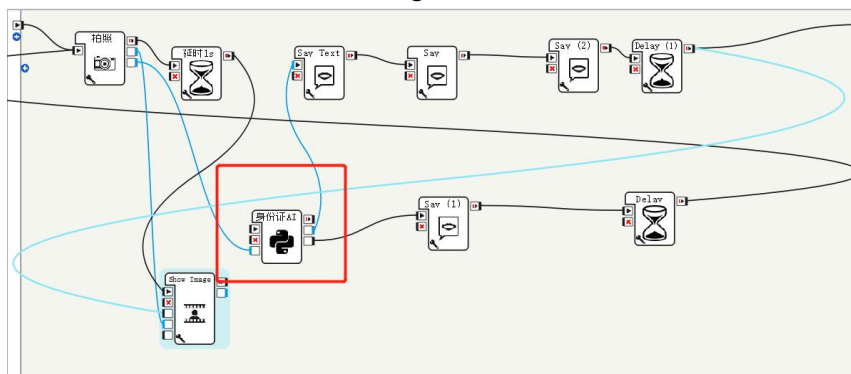


Figure 4

```
def fetch_token(self,p):
    url = p
    self.logger.info(url)
    if url == 'exit':
        result_str='error'
        return result_str
    host = 'https://aip.baidubce.com/oauth/2.0/token?
grant_type=client_credentials&client_id=LFNQ5e5ldrjDT47WGmaThz8&client_secret=gmbzza8VBNiGxSv3OgTjH3rse
17w4d8s'
    response2 = requests.get(host)
    if response2:
        print(response2.json())
        access_token = response2.json()['access_token']
        #print(access_token)
        #身份证识别
        request_url = "https://aip.baidubce.com/rest/2.0/ocr/v1/idcard"
        # 二进制方式打开图片文件
        f = open(url, 'rb')
        #self.logger.info(f)
        img = base64.b64encode(f.read())
        self.logger.info(789)
        params = {"id_card_side":"front","image":img}
        request_url = request_url + "?access_token=" + access_token
        headers = {'content-type': 'application/x-www-form-urlencoded'}
        response = requests.post(request_url, data=params, headers=headers)

    if response:
        infom = response.json()
        #self.logger.info(response)
        juc = infom['image_status']
        #self.logger.info(juc)
```

Figure 5

### 3.2 introduction to schools

Figure 6 shows the implementation idea, and Figure 7 shows the main implementation process.

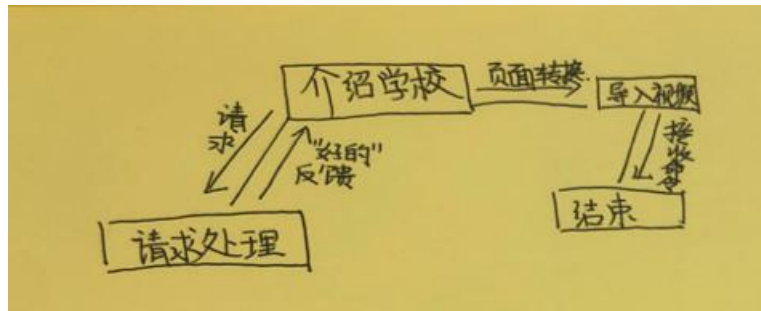


Figure 6

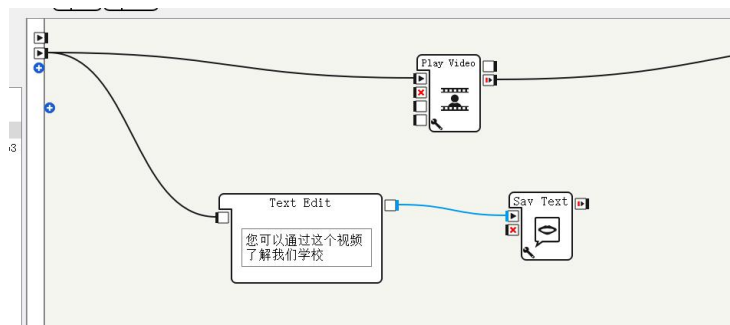


Figure 7

### 3.3 "Hello, goodbye, thank you" function

Figure 8 shows the "thank you" function. The robot makes a kiss while speaking.

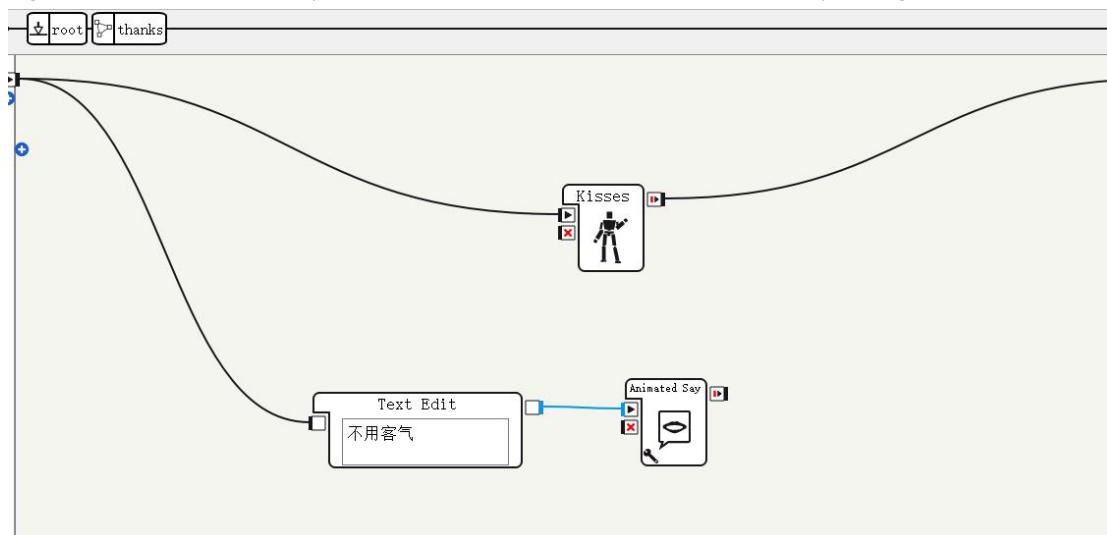


Figure 8

## 4. Project programming (main difficulties)

Visitor registration: get picture source -- get picture address URL -- Baidu AI -- content feedback

At the beginning, we didn't know where the image information was stored, so we went to

the official website to find the corresponding function and function parameters to send the image. After a serious understanding, we tried to adapt the program to solve this problem.



Figure 9 shows the overall design code.

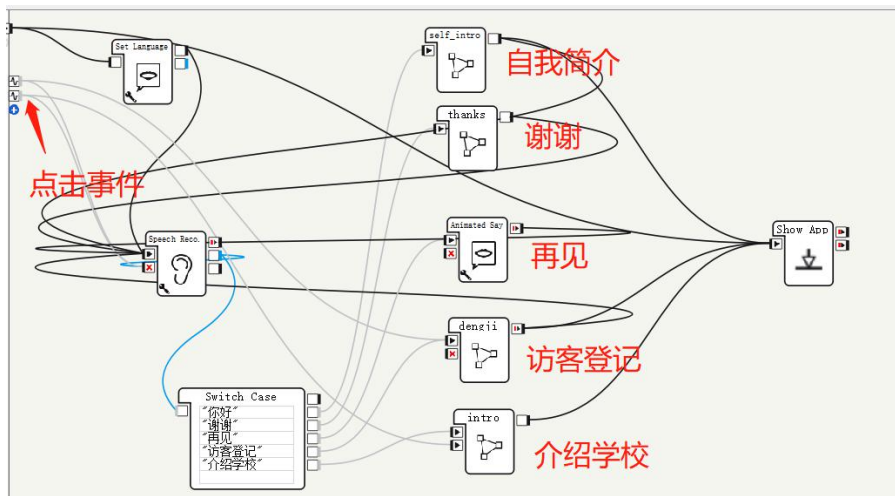


Figure 9

## 5. Future prospects

In the future, we can identify the color of health code by color recognition.

Infrared can also be used to scan the temperature of visitors, if there is a person beyond the normal temperature alarm.

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