Information Retrieval

1. Introduction

This is the third homework of HCI done by 2052844 Cao Xiaoci. The project aims to finish an image search engine.

Environment

compiler: python 3.11

packages: Flask PyQt5 numpy tensorflow Flask-HTTPAuth scipy imageio matplotlib sklearn

editor: Pycharm

programming language: html(css, javascript), python

File tree

```
├──database
│  ├──dataset
│  └──tags
├──imagenet
├──images
├──static
│  ├──images
│  └──result
├──templates
├──uploads
└──__pycache__
```

overall layout

2. Requirments

Formulation

It contains an input box to upload an image
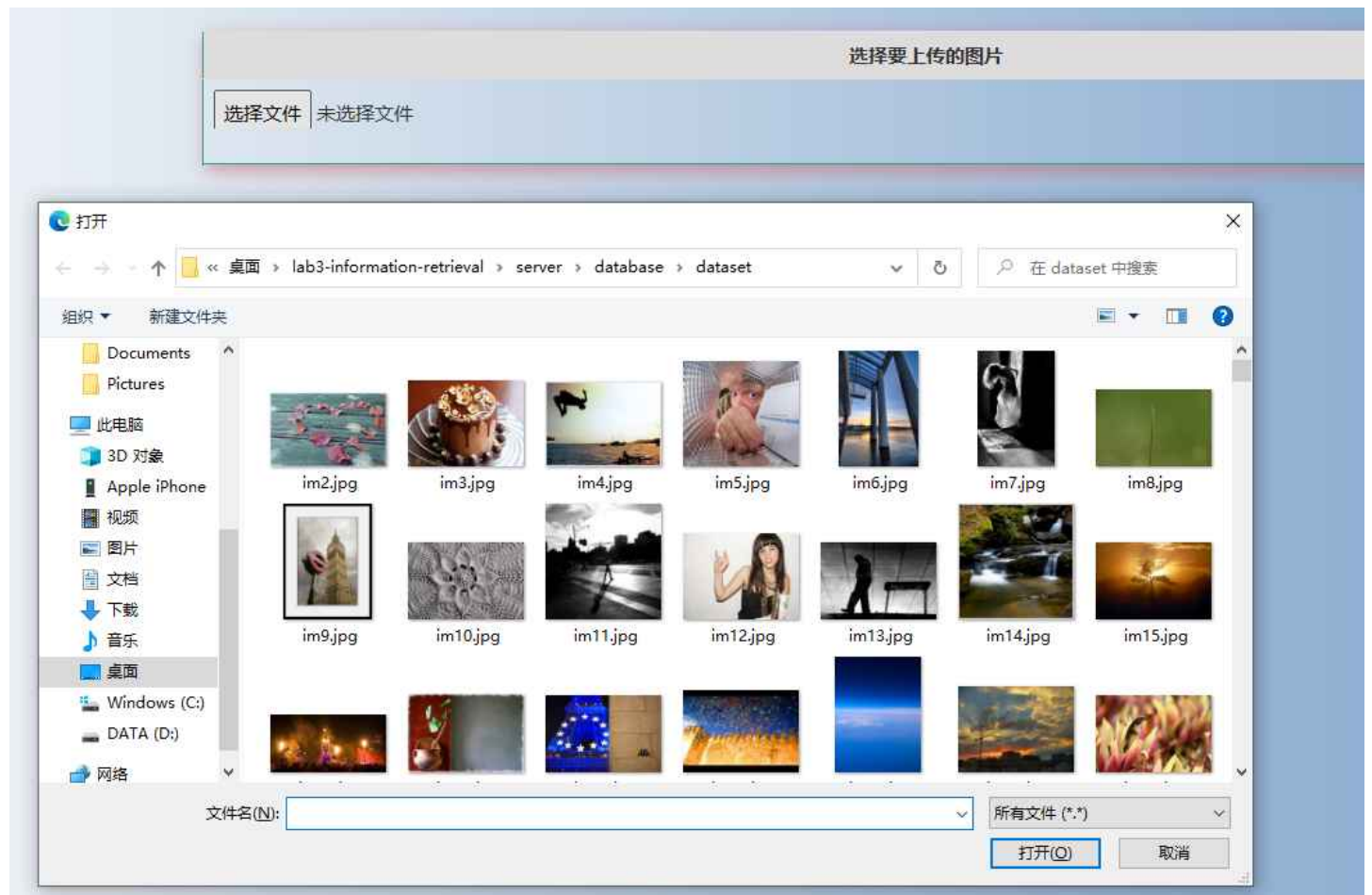
As can be seen from the picture, we can click "Choose File" to upload the image

Formulation

Users can preview the query image in the searching window

After we finish clicking on Select File, we can see that a preview of the picture we need to find appears.
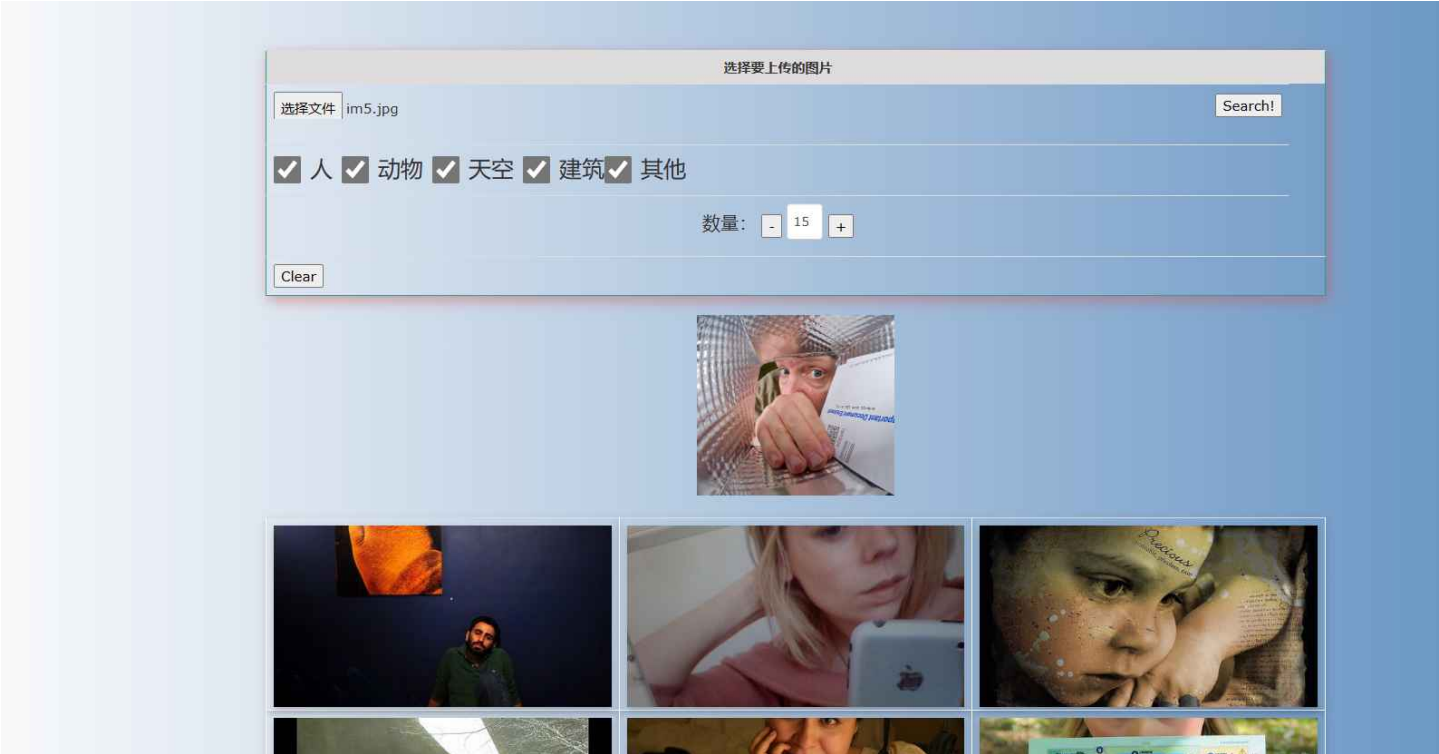

Once we've selected the images we want to search for, the selected images will be shown below for preview

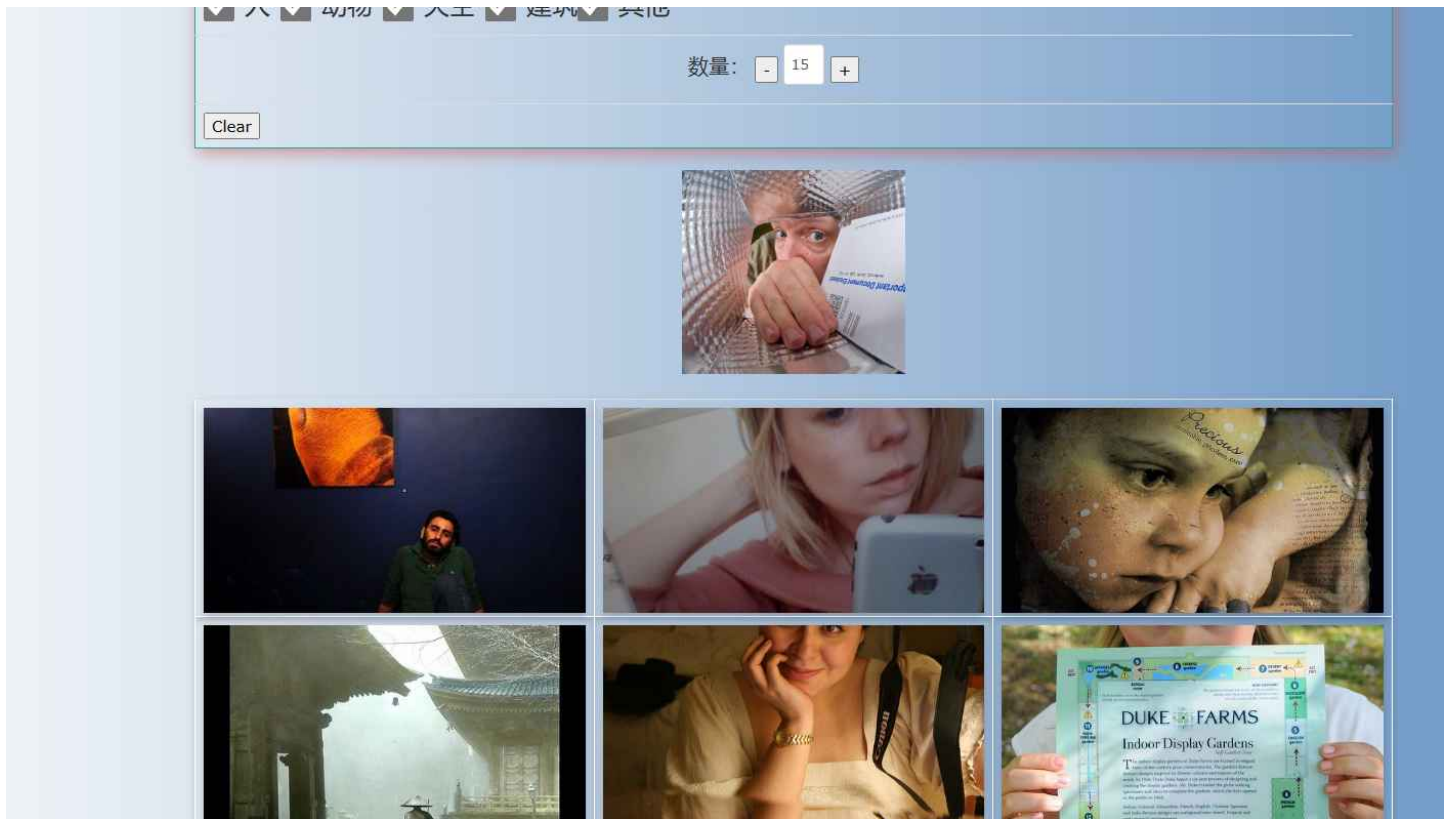## Initiation

It has a search button

We can click on Search in the upper right corner.

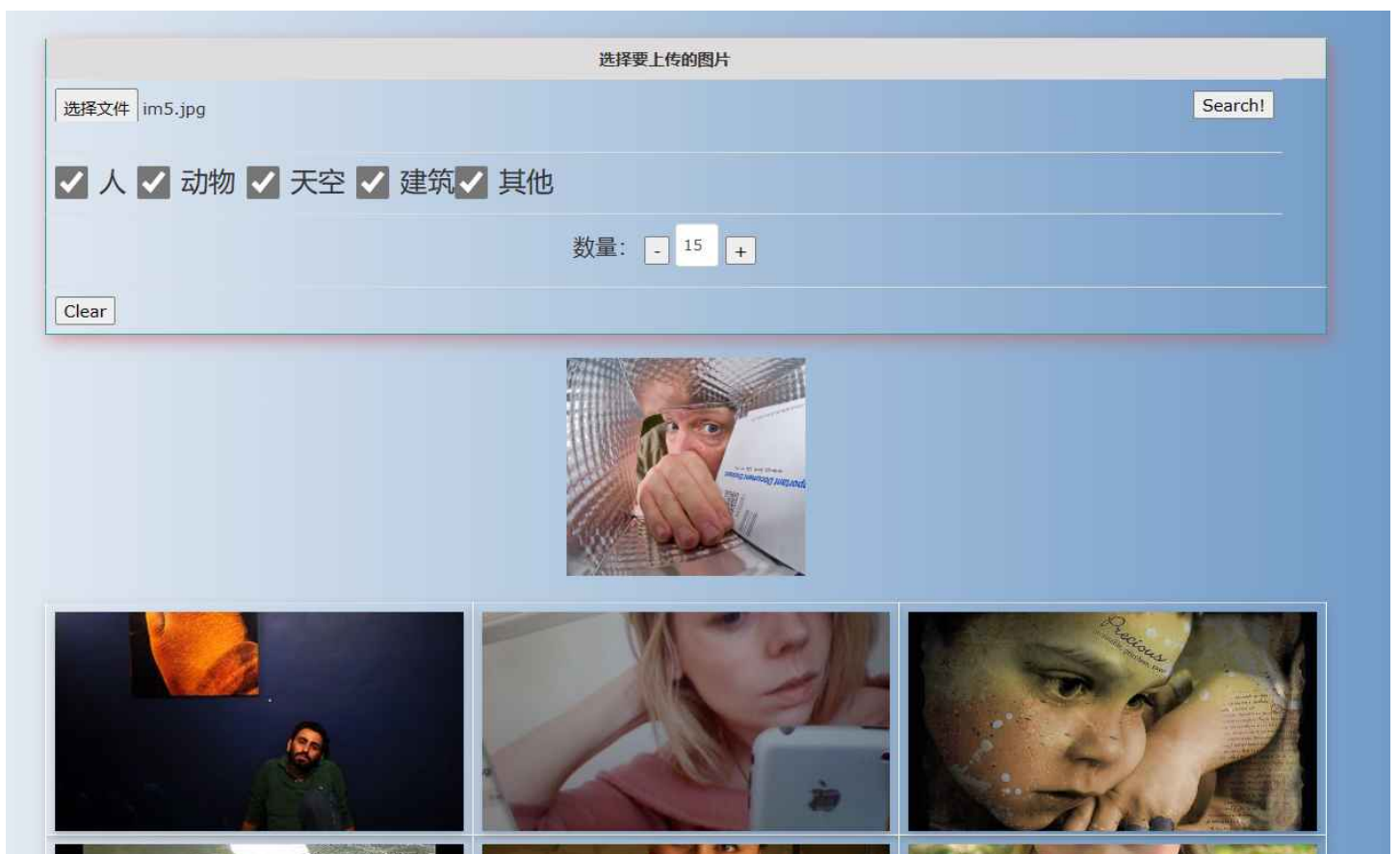After that, click on Search and we can see the results after the search.

Review

We can see an overview of the search results and the number of images shown at the top

Refinement

Allow changing search parameters (e.g. select certain category/tag) when reviewing results
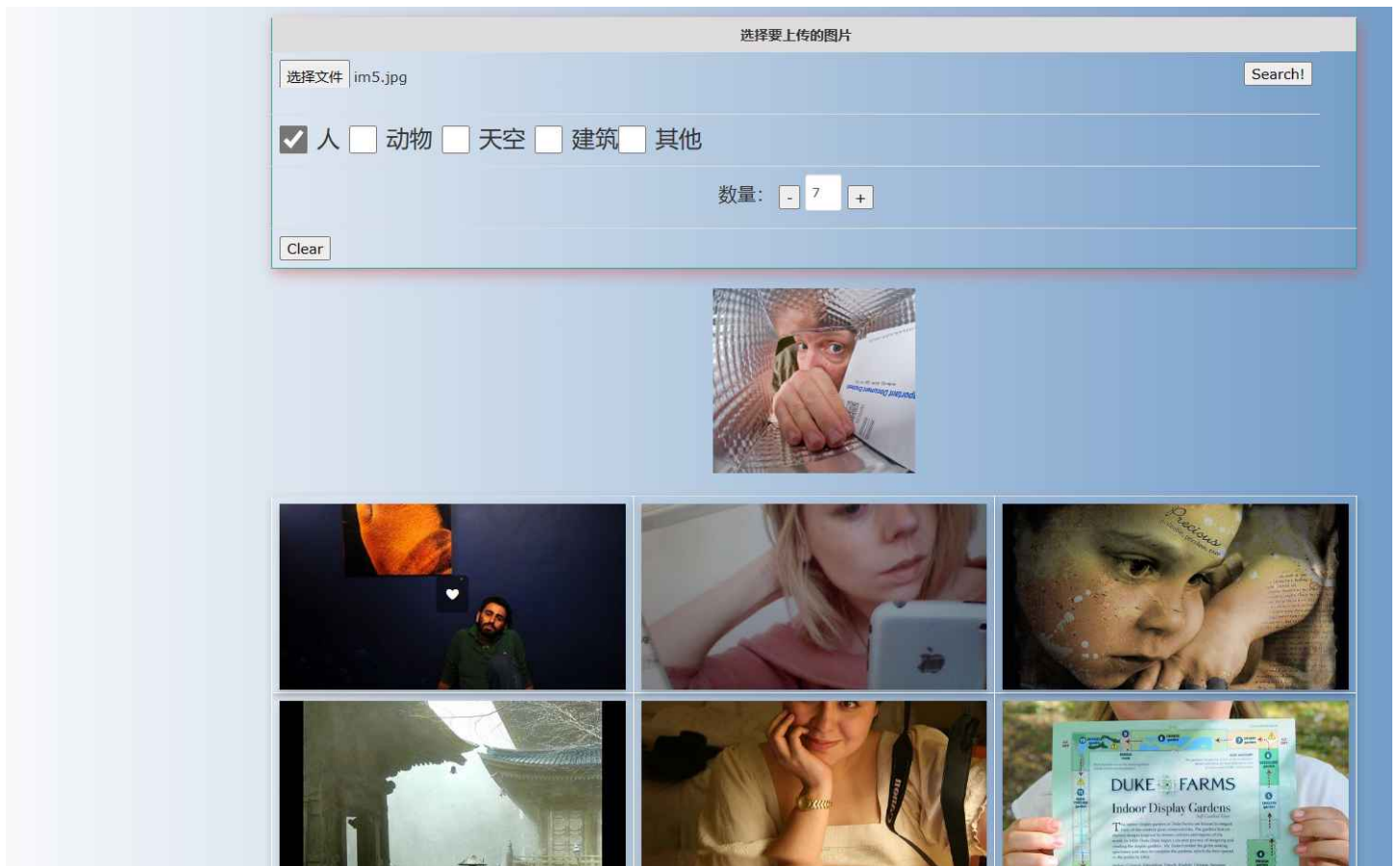

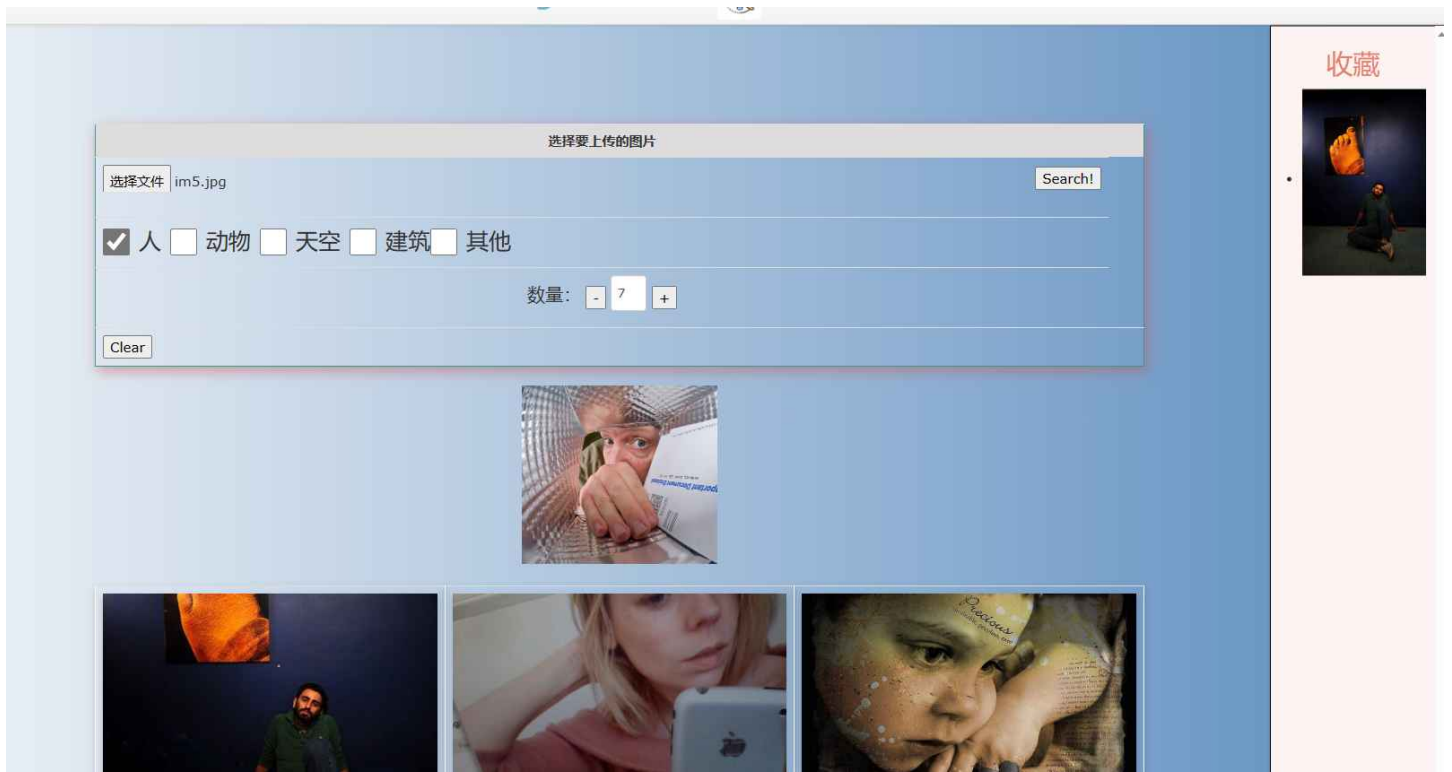We can adjust the number and type of images we search.

Use

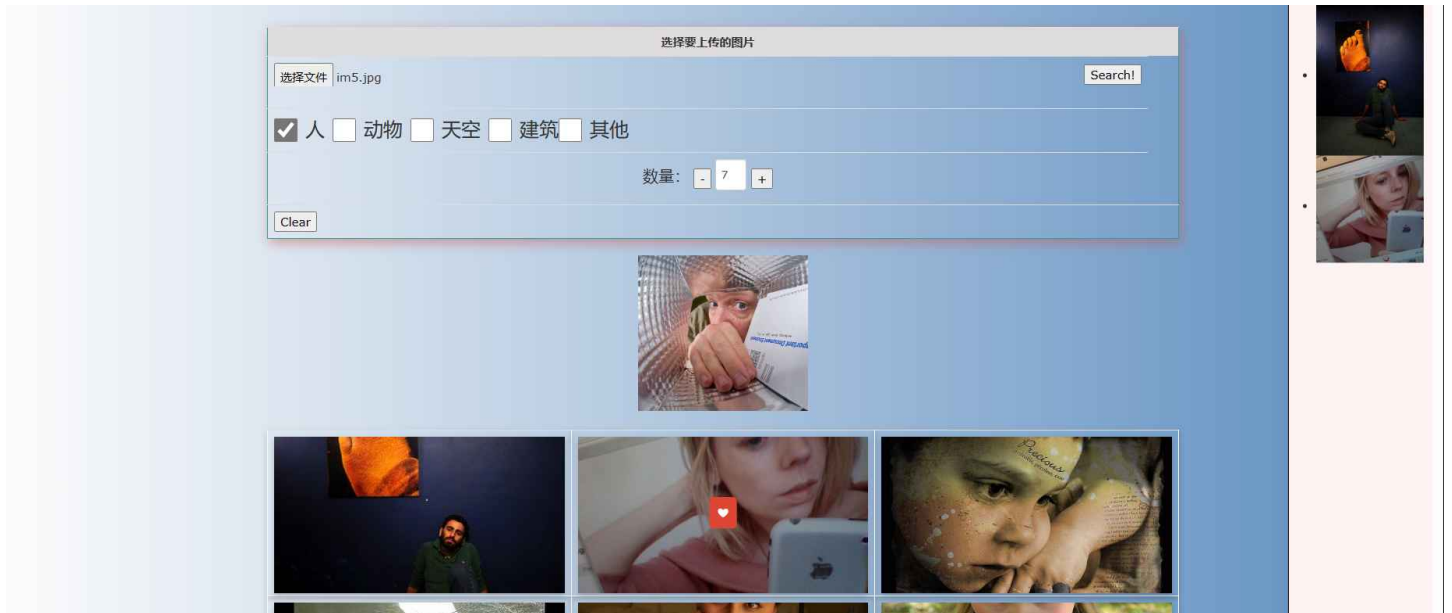Users can take some actions, e.g. add selected images to a favorite list

We can click on the stars on the picture.

The list of favorites on the right will show the picture I just bookmarked.

Other

We can cancel the image as a favorite by clicking on the heart again

选择要上传的图片

选择文件 im5.jpg　　　　　　　　　　　　　　　　　　　　　　　Search!

☑ 人　☐ 动物　☐ 天空　☐ 建筑　☐ 其他

数量：　－　7　＋

Clear

We can also empty the search by clicking clear to initialize the page

Image Search 🌀

选择要上传的图片

选择文件 未选择文件　　　　　　　　　　　　　　　　　　　　　　　Search!