REPORT OF INFO 300 TERM PROJECT

Team Members:

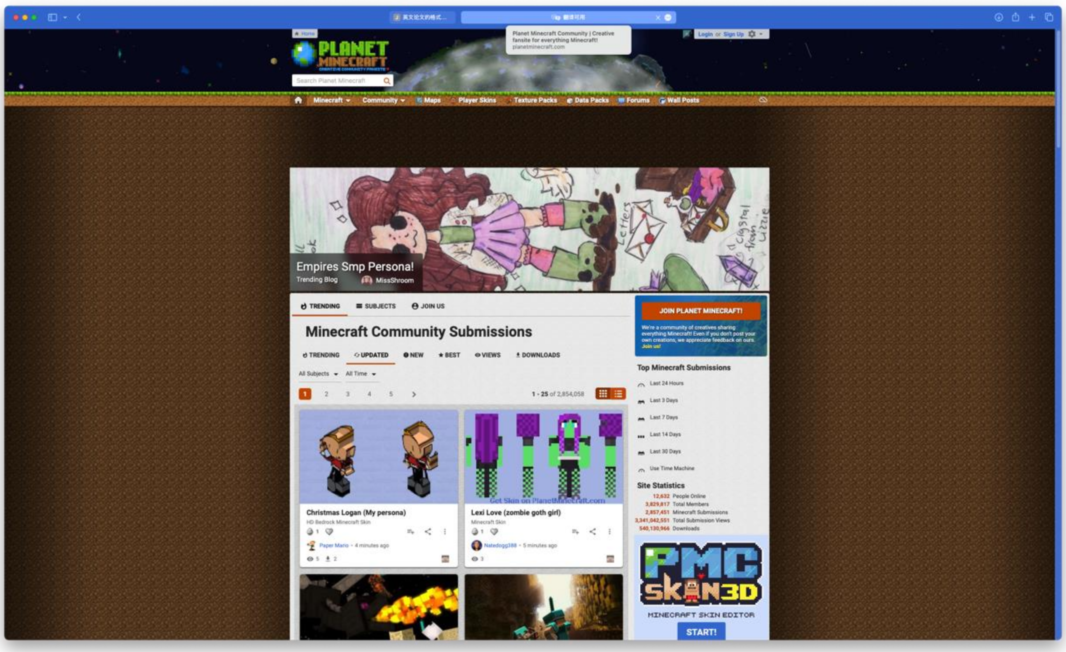
Name	Email	Student ID
Wenbo Liu	wbliu20@lzu.edu.cn	320200931121
Xuda Han	hanxd20@lzu.edu.cn	320200945781
Chengkai Lin	linchk@lzu.edu.cn	320200945841
Yifei Guo	guoyf@lzu.edu.cn	320200930901

Step 1. Prepare a Test Collection:

- This part is completed by Chengkai Lin.

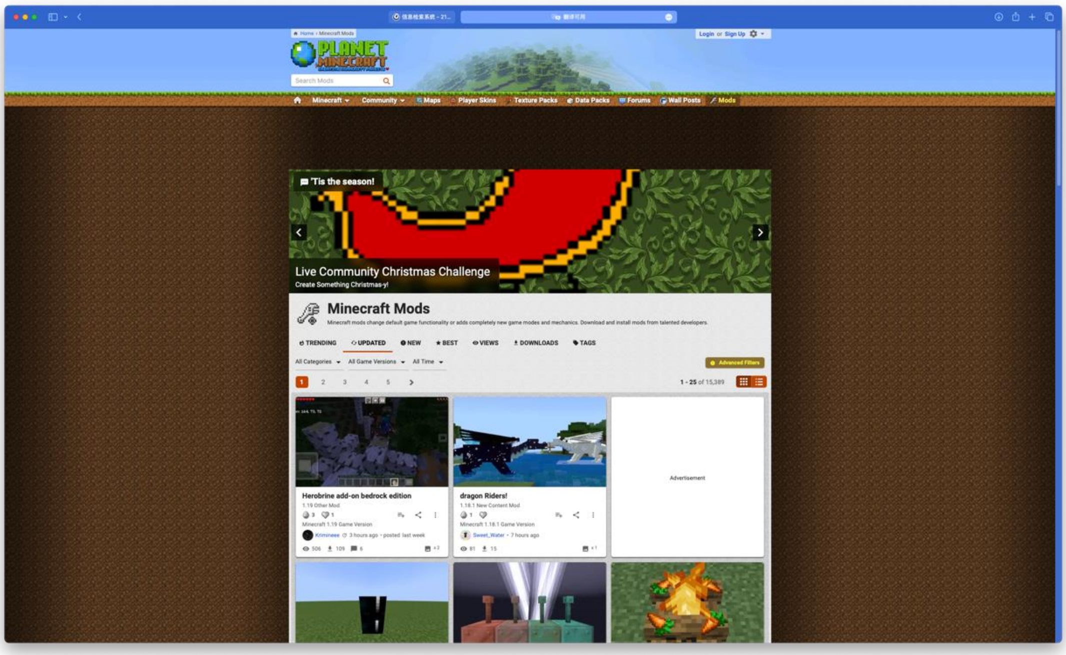
Minecraft is a sandbox video game developed by Mojang Studios. In Minecraft, players explore a blocky, procedurally generated 3D world with virtually infinite terrain and may discover and extract raw materials, craft tools and items, and build structures, earthworks, and simple machines. Depending on their chosen game mode, players can fight hostile mobs, as well as cooperate with or compete against other players in the same world. Game modes include a survival mode (in which players must acquire resources to build in the world and maintain health) and a creative mode (where players have unlimited resources and access to flight). There is also a wide variety of user-generated content, such as modifications, servers, skins, texture packs, and custom maps, which add new game mechanics and possibilities. That user-generated content is what we're interested in.

We can easily get a variety of user-generated content from the Minecraft community which is supported by gamers from all over the world. The image (P-1.1) below shows one of the Minecraft communities.



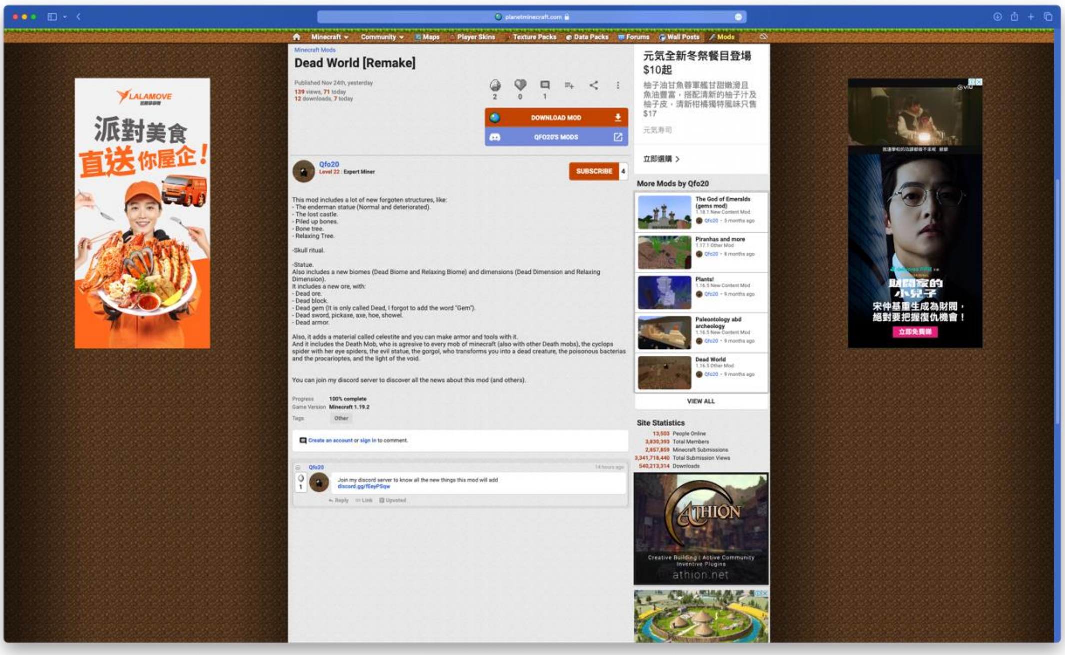
P-1. 1

What we want to crawl are game mods uploaded on the community. The image (P-1.2) behind shows one mods page.



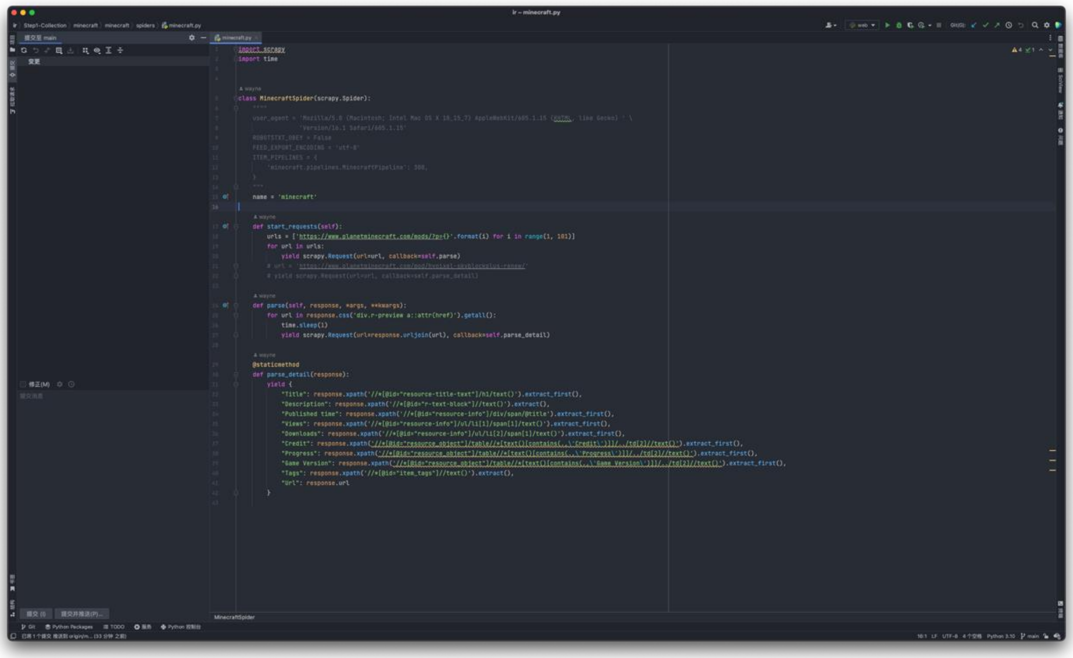
P-1. 2

Through the analysis of the web pages, we find that different mods pages have similar URLs. For example, URL of the first mods page is https://www.planetminecraft.com/mods/?p=1, and the second's is https://www.planetminecraft.com/mods/?p=2. Only the value of p varies in different URLs. Because of this, we can crawl all mods pages by changing the value of p. After getting all the mods pages, we need to further analyze the pages to get the address of each mod. We extract the URLs from the pages through CSS. The final step is to extract the data contained in each mod page. As you can see from the image (P-1.3), each mod page contains information such as title, description, published time, views, downloads, credit, progress, game version, tags, and URL. We extract the data from the page through XPath.



P-1. 3

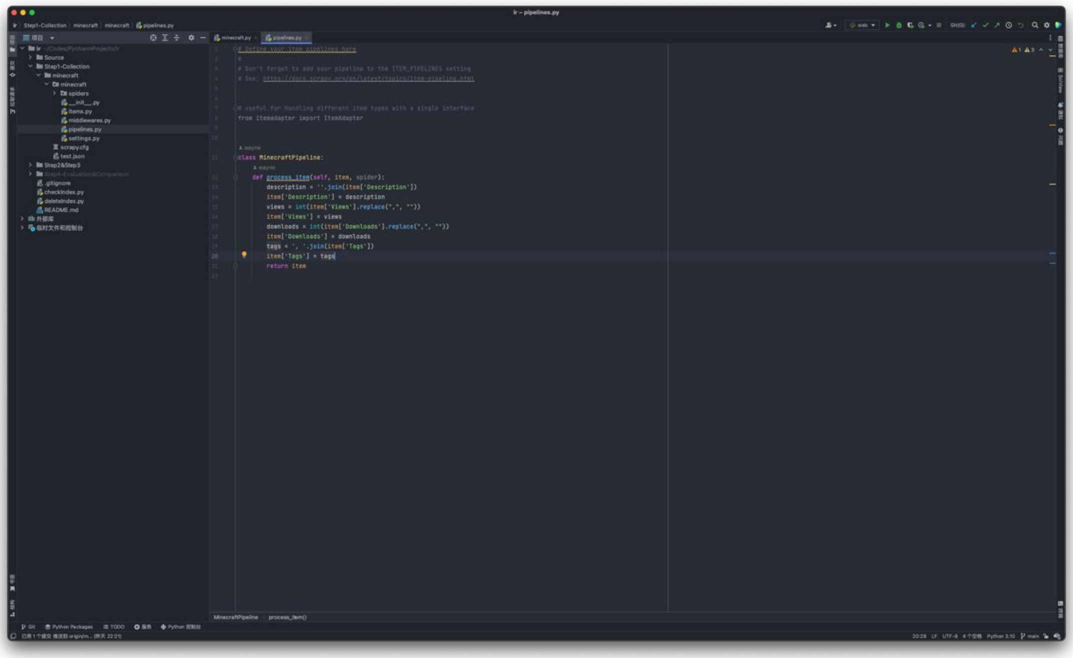
The image (P-1.4) below shows our spider script (**minecraft.py**). The function 'start_request' crawls the first 100 pages containing mod addresses and sends them to the parser 'parse' to crawl each mod page. After that, each mod page is handed over to the parser 'parse_detail' to parse the detailed data of each mod.



```python
import scrapy
import time


class MinecraftSpider(scrapy.Spider):
    """
    user_agent = 'Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/605.1.15 (KHTML, like Gecko) ' \
                 'Version/16.1 Safari/605.1.15'
    ROBOTSTXT_OBEY = False
    FEED_EXPORT_ENCODING = 'utf-8'
    ITEM_PIPELINES = {
        'minecraft.pipelines.MinecraftPipeline': 300,
    }
    """
    name = 'minecraft'

    def start_requests(self):
        urls = ['https://www.planetminecraft.com/mods/?p={}'.format(i) for i in range(1, 101)]
        for url in urls:
            yield scrapy.Request(url=url, callback=self.parse)
        # url = 'https://www.planetminecraft.com/mod/hypixel-skyblockplus-renew/'
        # yield scrapy.Request(url=url, callback=self.parse_detail)

    def parse(self, response, *args, **kwargs):
        for url in response.css('div.r-preview a::attr(href)').getall():
            time.sleep(1)
            yield scrapy.Request(url=response.urljoin(url), callback=self.parse_detail)

    @staticmethod
    def parse_detail(response):
        yield {
            "Title": response.xpath('//*[@id="resource-title-text"]/h1/text()').extract_first(),
            "Description": response.xpath('//*[@id="r-text-block"]//text()').extract(),
            "Published time": response.xpath('//*[@id="resource-info"]/div/span/@title').extract_first(),
            "Views": response.xpath('//*[@id="resource-info"]/ul/li[1]/span[1]/text()').extract_first(),
            "Downloads": response.xpath('//*[@id="resource-info"]/ul/li[2]/span[1]/text()').extract_first(),
            "Credit": response.xpath('//*[@id="resource_object"]/table//*[text()[contains(.,\'Credit\')]]/../td[2]//text()').extract_first(),
            "Progress": response.xpath('//*[@id="resource_object"]/table//*[text()[contains(.,\'Progress\')]]/../td[2]//text()').extract_first(),
            "Game Version": response.xpath('//*[@id="resource_object"]/table//*[text()[contains(.,\'Game Version\')]]/../td[2]//text()').extract_first(),
            "Tags": response.xpath('//*[@id="item_tags"]//text()').extract(),
            "Url": response.url
        }
```

P-1. 4

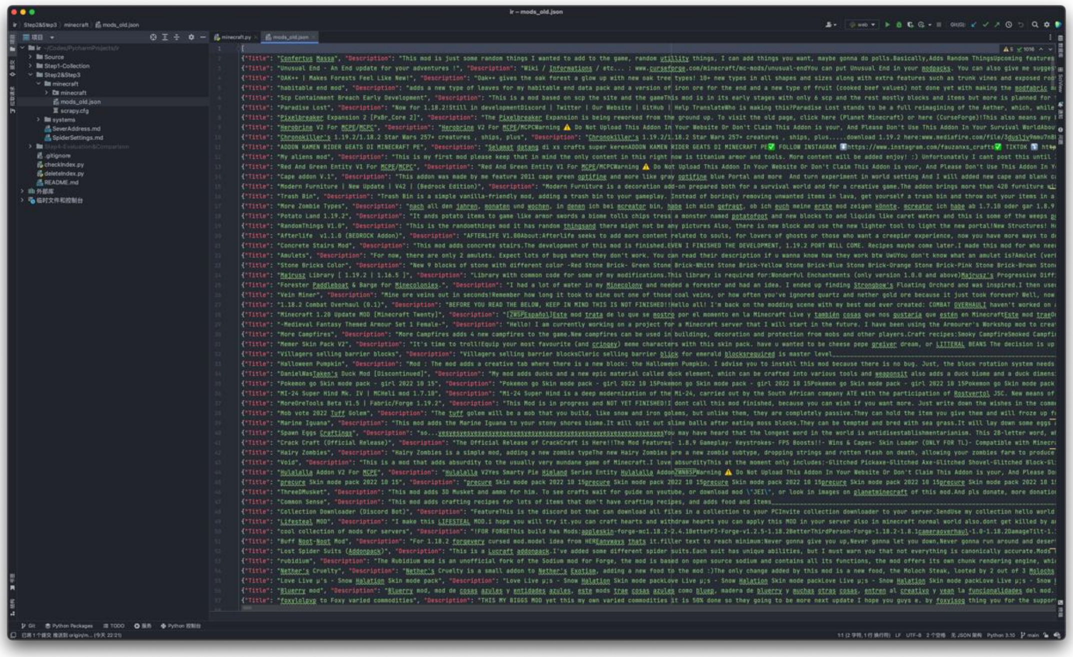
After obtaining the data, we also need to clean the data, such as data type conversion, string concatenation and so on. This is all set up in the **pipeline.py**.



```python
# Define your item pipelines here
#
# Don't forget to add your pipeline to the ITEM_PIPELINES setting
# See: https://docs.scrapy.org/en/latest/topics/item-pipeline.html


# useful for handling different item types with a single interface
from itemadapter import ItemAdapter


class MinecraftPipeline:
    def process_item(self, item, spider):
        description = ''.join(item['Description'])
        item['Description'] = description
        views = int(item['Views'].replace(",", ""))
        item['Views'] = views
        downloads = int(item['Downloads'].replace(",", ""))
        item['Downloads'] = downloads
        tags = ', '.join(item['Tags'])
        item['Tags'] = tags
        return item
```

P-1. 5

The image below shows the data (**mods_old.json**) we got from the crawl. There are 950 pieces of data here.



```
[
{"Title": "Confertus Massa", "Description": "This mod is just some random things I wanted to add to the game, random utillity things, I can add things you want, maybe gonna do polls.Basically,Adds Random ThingsUpcoming features
{"Title": "Unusual End - An End update for your adventures !", "Description": "Wiki / Informations / etc... : www.curseforge.com/minecraft/mc-mods/unusual-endYou can put Unusual End in your modpacks. You can also give me sugges
{"Title": "OAK++ | Makes Forests Feel Like New!", "Description": "Oak++ gives the oak forest a glow up with new oak tree types! 10+ new types in all shapes and sizes along with extra features such as trunk vines and exposed roo
{"Title": "habitable end mod", "Description": "adds a new type of leaves for my habitable end data pack and a version of iron ore for the end and a new type of fruit (cooked beef values) not done yet with making the modfabric m
{"Title": "Scp Containment Breach Early Development", "Description": "This is a mod based on scp the site and the gameThis mod is in its early stages with only 6 scp and the rest mostly blocks and items but more is planned for
{"Title": "Paradise Lost", "Description": "Now for 1.18.2!Still in developmentDiscord | Twitter | Our Website | GitHub | Help TranslateWho is making this?Paradise Lost stands to be a full reimagining of the Aether, which, while
{"Title": "Pixelbreaker Expansion 2 [PxBr_Core 2]", "Description": "The Pixelbreaker Expansion is being reworked from the ground up. To visit the old page, click here (Planet Minecraft) or here (CurseForge)!This also means any
{"Title": "Herobrine V2 For MCPE/MCPC", "Description": "Herobrine V2 For MCPE/MCPCWarning ⚠ Do Not Upload This Addon In Your Website Or Don't Claim This Addon is your, And Please Don't Use This Addon In Your Survival WorldAbou
{"Title": "Chronokiller's 1.19.2/1.18.2 Star Wars 257+ creatures , ships, plus", "Description": "Chronokiller's 1.19.2/1.18.2 Star Wars 257+ creatures , ships, plus.....download 1.19.2 here:www.mediafire.com/file/3dusljy9mmu7n8
{"Title": "ADDON KAMEN RIDER GEATS DI MINECRAFT PE", "Description": "Selamat datang di xs crafts super kerenADDON KAMEN RIDER GEATS DI MINECRAFT PE✅ FOLLOW INSTAGRAM ⬇️https://www.instagram.com/fauzanxs_crafts✅ TIKTOK ⬇️ htt
{"Title": "My aliens mod", "Description": "This is my first mod please keep that in mind the only content in this right now is titanium armor and tools. More content will be added enjoy! :) Unfortunately I cant post this until
{"Title": "Red And Green Entity V1 For MCPE/MCPC", "Description": "Red And Green Entity V1 For MCPE/MCPCWarning ⚠ Do Not Upload This Addon In Your Website Or Don't Claim This Addon is your, And Please Don't Use This Addon In Y
{"Title": "Cape addon V.1", "Description": "This addon was made by me feature 2011 cape green optifine and more like gray optifine blue Portal and more  And turn experiment in world setting And I will added new cape and blank c
{"Title": "Modern Furniture | New Update | V42 | (Bedrock Edition)", "Description": "Modern Furniture is a decoration add-on prepared both for a survival world and for a creative game.The addon brings more than 420 furniture wi
{"Title": "Trash Bin", "Description": "Trash Bin is a simple vanilla-friendly mod, adding a trash bin to your gameplay. Instead of boringly removing unwanted items in lava, get yourself a trash bin and throw out your items in a
{"Title": "More Zombie Types", "Description": "nach all den jahren, monaten und wochen, in denen ich bei mcreator bin, habe ich mich gefragt, ob ich euch meine erste mod zeigen könnte. mcreator ich habe ab 1.7.10 oder gar 1.8.9
{"Title": "Potato Land 1.19.2", "Description": "It ands potato items to game like armor swords a biome tolls chips tress a monster named potatofoot and new blocks to and liquids like caret waters and this is some of the weeps p
{"Title": "RandomThings V1.0", "Description": "This is the randomthings mod it has random thingsand there might not be any pictures Also, there is new block and use the new lighter tool to light the new portal!New Structures! H
{"Title": "Afterlife  v1.1.0 (BEDROCK Addon)", "Description": "AFTERLIFE V1.00About:Afterlife seeks to add more content related to souls, for lovers of ghosts or those who want a creepier experience, now you have more ways to d
{"Title": "Concrete Stairs Mod", "Description": "This mod adds concrete stairs.The development of this mod is finished.EVEN I FINISHED THE DEVELOPMENT, 1.19.2 PORT WILL COME. Recipes maybe come later.I made this mod for who nee
{"Title": "Amulets", "Description": "For now, there are only 2 amulets. Expect lots of bugs where they don't work. You can read their description if u wanna know how they work btw UwUYou don't know what an amulet is?Amulet (ver
{"Title": "Stone Bricks Color", "Description": "New 9 blocks of stone with different color -Red Stone Brick- Green Stone Brick-White Stone Brick-Yellow Stone Brick-Blue Stone Brick-Orange Stone Brick-Pink Stone Brick-Brown Ston
{"Title": "Majrusz Library [ 1.19.2 | 1.16.5 ]", "Description": "Library with common code for some of my modifications.This library is required for:Wonderful Enchantments (only version 1.0.0 and above)Majrusz's Progressive Diff
{"Title": "Forester Paddleboat & Barge for Minecolonies.", "Description": "I had a lot of water in my Minecolony and needed a forester and had an idea. I ended up finding Strongbow's Floating Orchard and was inspired.I then use
{"Title": "Vein Miner", "Description": "Mine ore veins out in seconds!Remember how long it took to mine out one of those coal veins, or how often you've ignored quartz and nether gold ore because it just took forever? Well, now
{"Title": "1.18.2 Combat Overhaul (0.1)", "Description": "BEFORE YOU READ THE BELOW, KEEP IN MIND THIS IS NOT FINISHED!!Hello all! I'm back on the modding scene with my best mod ever created: COMBAT OVERHAULI haven't worked on
{"Title": "Minecraft 1.20 Update MOD [Minecraft Twenty]", "Description": "[ZWSPEspañol]Este mod trata de lo que se mostro por el momento en la Minecraft Live y también cosas que nos gustaria que estén en MinecraftEste mod trae
{"Title": "-Medieval Fantasy Themed Armour Set 1 Female-", "Description": "Hello! I am currently working on a project for a Minecraft server that I will start in the future. I have been using the Armourer's Workshop mod to crea
{"Title": "More Campfires", "Description": "More Campfires adds 4 new campfires to the game.New campfires can be used in buildings, decoration and protection from mobs and other players.Craft recipes:Smoky CampfireSmoked Campfi
{"Title": "Memer Skin Pack V2", "Description": "It's time to troll!Equip your most favourite (and cringey) meme characters with this skin pack. have u wanted to be cheese pepe greiver dream, or LITTERAL BEANS The decision is up
{"Title": "Villagers selling barrier blocks", "Description": "Villagers selling barrier blocksCleric selling barrier blick for emerald blocksrequired is master level
{"Title": "Halloween Pumpkin", "Description": "Mod : The mod adds a creative tab where there is a new block: the Halloween Pumpkin. I advise you to install this mod because there is no bug. Just, the block rotation system needs
{"Title": "DanielWasTaken's Duck Mod [Discontinued]", "Description": "My mod adds ducks and a new epic material called duck element, which can be crafted into various tools and weaponsit also adds a duck biome and a duck dimens
{"Title": "Pokemon go Skin mode pack - girl 2022 10 15", "Description": "Pokemon go Skin mode pack - girl 2022 10 15Pokemon go Skin mode pack - girl 2022 10 15Pokemon go Skin mode pack - girl 2022 10 15Pokemon go Skin mode pack
{"Title": "MI-24 Super Hind Mk. IV | MCHeli mod 1.7.10", "Description": "Mi-24 Super Hind is a deep modernization of the Mi-24, carried out by the South African company ATE with the participation of Rostvertol JSC. New means of
{"Title": "MoreOreTools Beta V1.5 | Fabric/Forge 1.19.2", "Description": "This Mod is in progress and NOT YET FINISHED!I dont call this mod finished, because you can wish if you want more. Just write down the wishes in the comm
{"Title": "Mob vote 2022 Tuff Golem", "Description": "The tuff golem will be a mob that you build, like snow and iron golems, but unlike them, they are completely passive.They can hold the item you give them and will froze up f
{"Title": "Marine Iguana", "Description": "This mod adds the Marine Iguana to your stony shores biome.It will spit out slime balls after eating moss blocks.They can be tempted and bred with sea grass.It will lay down some eggs
{"Title": "Spawn Eggs Craftings", "Description": "so...yesyesyesyesyesyesyesyesyesyesyesyesyesyesyesyesyesyesyesyesyesYou may have heard that the longest word in the world is antidisestablishmentarianism. This 28-letter word, w
{"Title": "Crack Craft (Official Release)", "Description": "The Official Release of CrackCraft is Here!!The Mod Features- 1.8.9 Gameplay- Keystrokes- FPS Boosts!!- Wins & Capes- Skin Loader (ONLY FOR TL)- Compatible with Minecr
{"Title": "Hairy Zombies", "Description": "Hairy Zombies is a simple mod, adding a new zombie typeThe new Hairy Zombies are a new zombie subtype, dropping strings and rotten flesh on death, allowing your zombies farm to produce
{"Title": "Void", "Description": "This is a mod that adds absurdity to the usually very mundane game of Minecraft.I love absurdityThis at the moment only includes:-Glitched Pickaxe-Glitched Axe-Glitched Shovel-Glitched Block-Gl
{"Title": "Hulalalla Addon V2 For MCPE", "Description": "Hulalalla V2Yes Smarty Pie Himland Series Entity Hulalalla AddonZWNBSPWarning ⚠ Do Not Upload This Addon In Your Website Or Don't Claim This Addon is your, And Please Do
{"Title": "precure Skin mode pack 2022 10 15", "Description": "precure Skin mode pack 2022 10 15precure Skin mode pack 2022 10 15precure Skin mode pack 2022 10 15precure Skin mode pack 2022 10 15precure Skin mode pack 2022 10 1
{"Title": "ThreeDMusket", "Description": "This mod adds 3D Musket and ammo for him. To see crafts wait for guide on youtube, or download mod \"JEI\", or look in images on planetminecraft of this mod.And pls donate, more donatio
{"Title": "Common Sense", "Description": "This mod adds crafting recipes for lots of items that don't have crafting recipes, and adds food and items
{"Title": "Collection Downloader (Discord Bot)", "Description": "FeatureThis is the discord bot that can download all files in a collection to your PCInvite collection downloader to your server.SendUse my collection hello world
{"Title": "Lifesteal MOD", "Description": "I make this LIFESTEAL MOD.i hope you will try it.you can craft hearts and withdraw hearts you can apply this MOD in your server also in minecraft normal world also.dont get killed by a
{"Title": "cool collection of mods for servers", "Description": "!FOR FORGEThis build has Mods:appleskin-forge-mc1.18.2-2.4.1BetterF3-Forge-v1.2.5-1.18.2BetterThirdPerson-Forge-1.18.2-1.8.1cameraoverhaul-1.0-1.18.2DamageTilt-1.
{"Title": "Buff Noot-Noot Mod", "Description": "For 1.18.2 forgevery cursed mod.model idea from HEREanyways thats it.filler text to reach minimum:Never gonna give you up,Never gonna let you down,Never gonna run around and deser
{"Title": "Lost Spider Suits (Addonpack)", "Description": "This is a Lucraft addonpack.I've added some different spider suits.Each suit has unique abilities, but I must warn you that not everything is canonically accurate.Mods
{"Title": "rubidium", "Description": "The Rubidium mod is an unofficial fork of the Sodium mod for Forge, the mod is based on open source sodium and contains all its functions, the mod offers its own chunk rendering engine, whi
{"Title": "Nether's Cruelty", "Description": "Nether's Cruelty is a small addon to Nether's Exotism, adding a new food to the mod :)The only change added by this mod is a new food, the Moloch Steak, looted by 2 out of 3 Molochs
{"Title": "Love Live μ's - Snow Halation Skin mode pack", "Description": "Love Live μ;s - Snow Halation Skin mode packLove Live μ;s - Snow Halation Skin mode packLove Live μ;s - Snow Halation Skin mode packLove Live μ;s - Snow
{"Title": "Bluerry mod", "Description": "Bluerry mod, mod de cosas azules y entidades azules, este mods trae cosas azules como blueo, madera de bluerry y muchas otras cosas, entren al creativo y vean la funcionalidades del mod.
{"Title": "foxylolpvp to Foxy varied commodities", "Description": "THIS MY BIGGS MOD yet this my own varied commodities it is 50% done so they going to be more next update I hope you guys e. by foxyisog thing you for the suppor
```

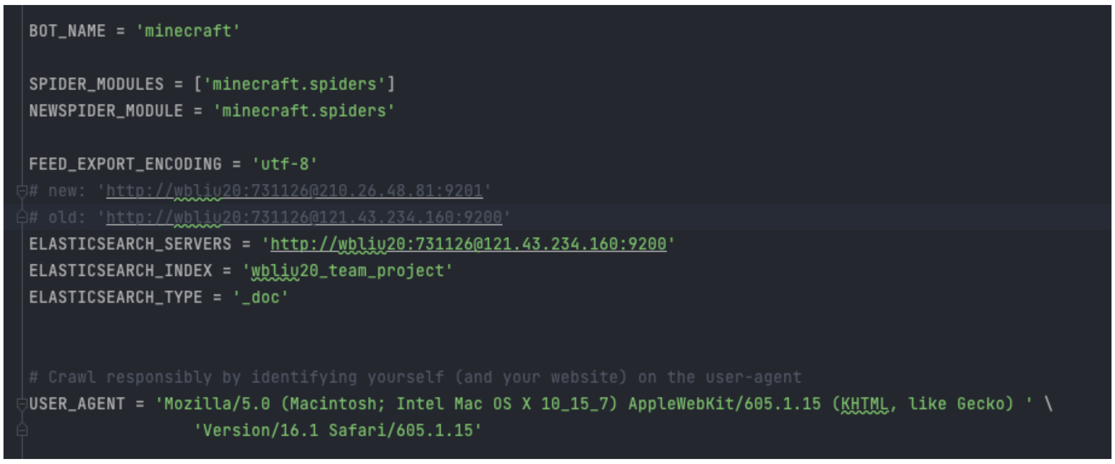
P-1. 6

Step 2. Implement a Baseline IR System:

- This part is completed by Wenbo Liu and Xuda Han.
  i. Wenbo Liu - Search Interface
  ii. Xuda Han – Web Page

Index the test collection using the default setting of Elasticsearch

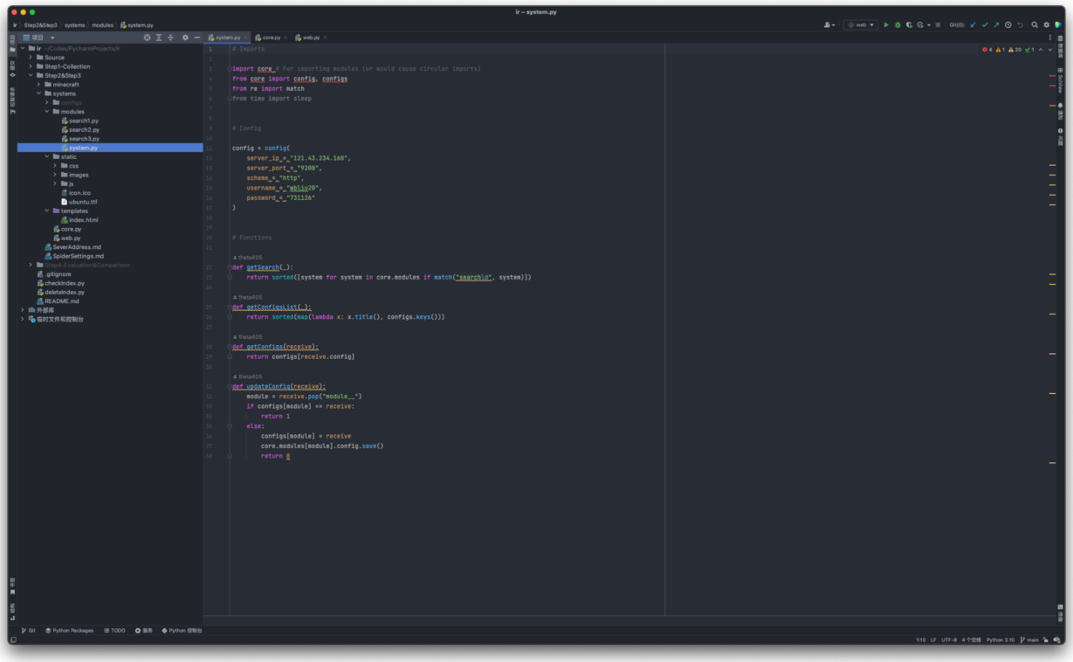
To implement the baseline information retrieval system, we should upload the collections to Elasticsearch and index them firstly. Using the properties of scrapy, we can upload our data to Elasticsearch while crawling. To do this, we need to add the server address, index name, username, password and Elasticsearch pipeline to the file **setting.py** (P-2.1).


```
BOT_NAME = 'minecraft'

SPIDER_MODULES = ['minecraft.spiders']
NEWSPIDER_MODULE = 'minecraft.spiders'

FEED_EXPORT_ENCODING = 'utf-8'
# new: 'http://wbliu20:731126@210.26.48.81:9201'
# old: 'http://wbliu20:731126@121.43.234.160:9200'
ELASTICSEARCH_SERVERS = 'http://wbliu20:731126@121.43.234.160:9200'
ELASTICSEARCH_INDEX = 'wbliu20_team_project'
ELASTICSEARCH_TYPE = '_doc'


# Crawl responsibly by identifying yourself (and your website) on the user-agent
USER_AGENT = 'Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/605.1.15 (KHTML, like Gecko) ' \
             'Version/16.1 Safari/605.1.15'
```

P-2. 1

Use the Elasticsearch Python API to create a search interface

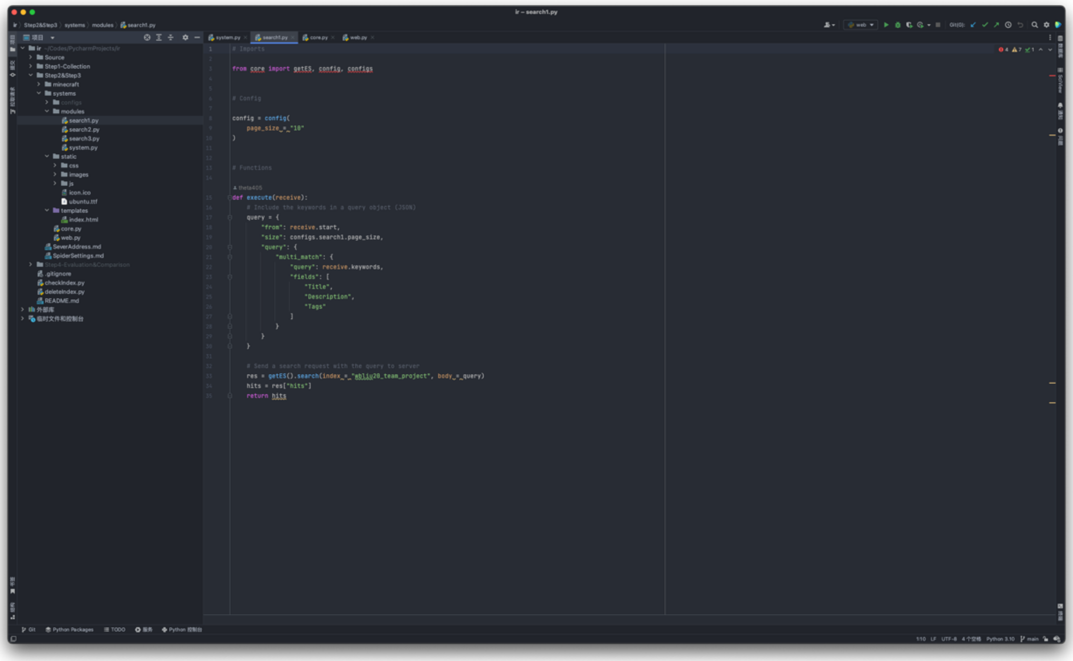
To create a search interface, we use Elasticsearch module (version 7.12.0) of Python. First, define Elasticsearch configuration information in the **system.py** file (P-2.2), such as the server address, index, account, password, etc. Other functions in the file are used to implement the features of the web page, such as system selection, saving the configuration file, updating the configuration file, and so on. We will show the specific features in the web page.



```python
# Imports

import core # For importing modules (or would cause circular imports)
from core import config, configs
from re import match
from time import sleep


# Config

config = config(
    server_ip = "121.43.234.160",
    server_port = "9200",
    scheme = "http",
    username = "wbliu20",
    password = "731126"
)


# Functions

def getSearch(_):
    return sorted([system for system in core.modules if match("search\d", system)])

def getConfigsList(_):
    return sorted(map(lambda x: x.title(), configs.keys()))

def getConfigs(receive):
    return configs[receive.config]

def updateConfig(receive):
    module = receive.pop("module__")
    if configs[module] == receive:
        return 1
    else:
        configs[module] = receive
        core.modules[module].config.save()
        return 0
```

P-2. 2

Secondly, we define the query statement of the baseline information retrieval system and the display range of each result page in **search1.py** (P-2.3). We will match the results using the default similarity algorithm in the title, description and tags fields.

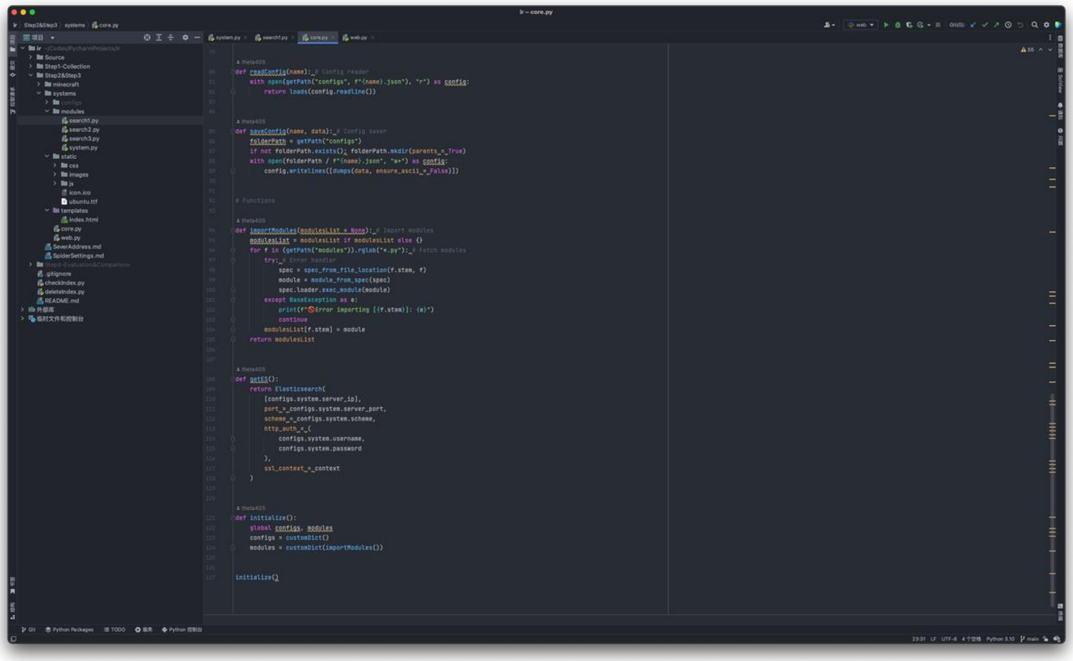


```python
# Imports

from core import getES, config, configs


# Config

config = config(
    page_size = "10"
)


# Functions

def execute(receive):
    # Include the keywords in a query object (JSON)
    query = {
        "from": receive.start,
        "size": configs.search1.page_size,
        "query": {
            "multi_match": {
                "query": receive.keywords,
                "fields": [
                    "Title",
                    "Description",
                    "Tags"
                ]
            }
        }
    }

    # Send a search request with the query to server
    res = getES().search(index = "wbliu20_team_project", body = query)
    hits = res["hits"]
    return hits
```

P-2. 3

The default similarity algorithm of Elasticsearch is BM25.

Finally, we initialize the configuration in **core.py** (P-2.4) and link to the Elasticsearch server.

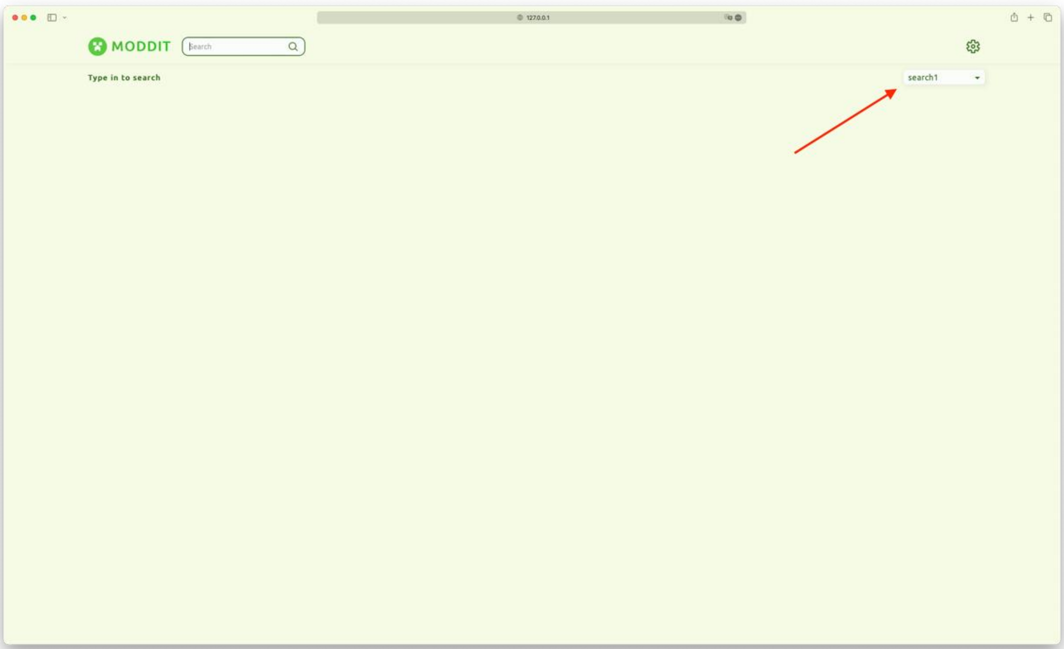


```python
def readConfig(name): # Config reader
    with open(getPath("configs", f"{name}.json"), "r") as config:
        return loads(config.readline())


def saveConfig(name, data): # Config saver
    folderPath = getPath("configs")
    if not folderPath.exists(): folderPath.mkdir(parents = True)
    with open(folderPath / f"{name}.json", "w+") as config:
        config.writelines([dumps(data, ensure_ascii = False)])


# Functions

def importModules(modulesList = None): # Import modules
    modulesList = modulesList if modulesList else {}
    for f in (getPath("modules")).rglob("*.py"): # Fetch modules
        try: # Error handler
            spec = spec_from_file_location(f.stem, f)
            module = module_from_spec(spec)
            spec.loader.exec_module(module)
        except BaseException as e:
            print(f"🚫Error importing [{f.stem}]: {e}")
            continue
        modulesList[f.stem] = module
    return modulesList


def getES():
    return Elasticsearch(
        [configs.system.server_ip],
        port = configs.system.server_port,
        scheme = configs.system.scheme,
        http_auth = (
            configs.system.username,
            configs.system.password
        ),
        ssl_context = context
    )


def initialize():
    global configs, modules
    configs = customDict()
    modules = customDict(importModules())


initialize()
```

P-2. 4

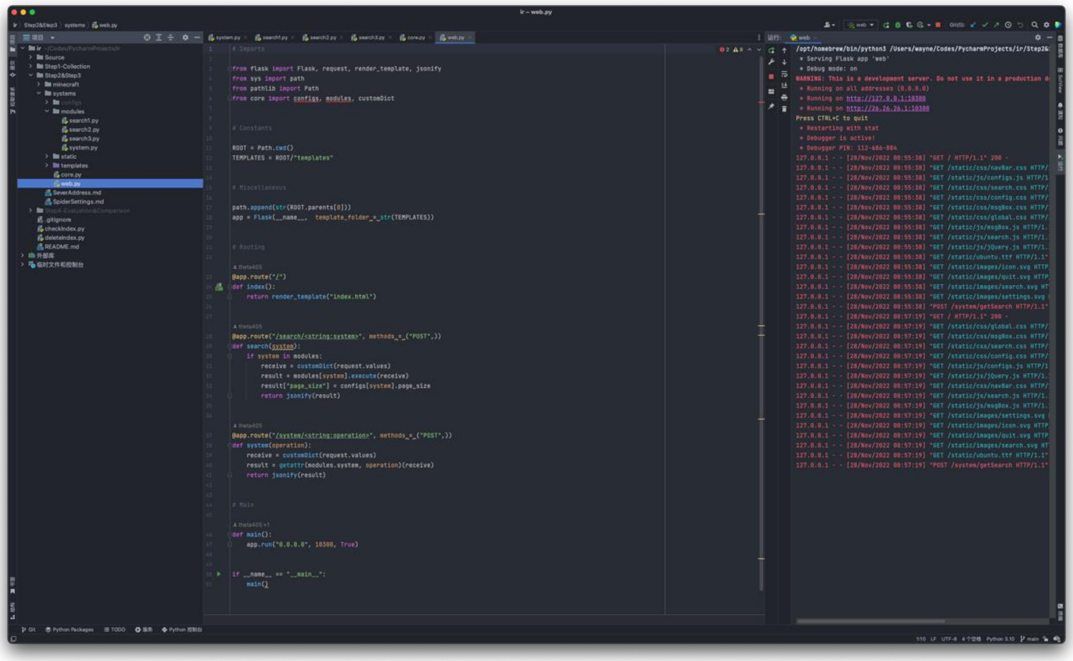
Create a simple web page to allow searching for the test collection

We use jQuery in the front end. At the same time, we have realized the function of switching the retrieval system during system running. After receiving the Elasticsearch returned field, we will paginate and display the returned data. As shown below (P-2.5), we can select different retrieval systems at the top right of the page. Among them, search1 is the baseline information retrieval system, search2 and search3 are the enhanced information retrieval systems.



P-2. 5

Flask connects the web page to the system. After the user has entered the data to be queried into the web page, flask obtains the fields from a web page and sends them to the specified Elasticsearch server through the python Elasticsearch module. Then, the data returned by the server is sent to the web page for parsing. Finally, the webpage will display the required data. In this project, run **web.py** (P-2.6) to start up flask sever.



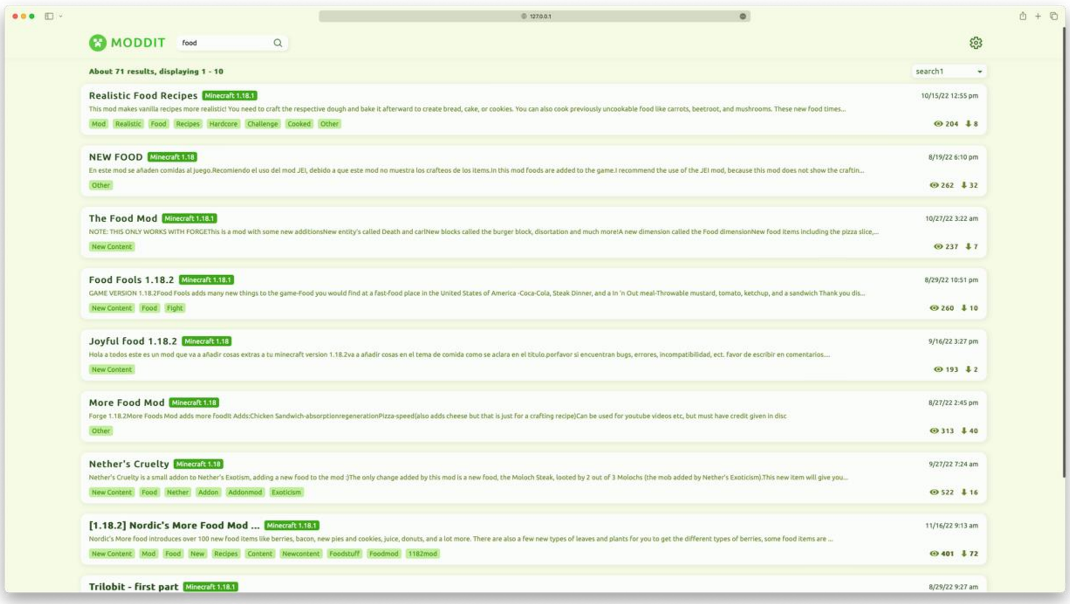
```python
# Imports

from flask import Flask, request, render_template, jsonify
from sys import path
from pathlib import Path
from core import configs, modules, customDict


# Constants

ROOT = Path.cwd()
TEMPLATES = ROOT/"templates"


# Miscellaneous

path.append(str(ROOT.parents[0]))
app = Flask(__name__,  template_folder = str(TEMPLATES))


# Routing

@app.route("/")
def index():
    return render_template("index.html")


@app.route("/search/<string:system>", methods = ("POST",))
def search(system):
    if system in modules:
        receive = customDict(request.values)
        result = modules[system].execute(receive)
        result["page_size"] = configs[system].page_size
        return jsonify(result)


@app.route("/system/<string:operation>", methods = ("POST",))
def system(operation):
    receive = customDict(request.values)
    result = getattr(modules.system, operation)(receive)
    return jsonify(result)


# Main

def main():
    app.run("0.0.0.0", 10300, True)


if __name__ == "__main__":
    main()
```

```
/opt/homebrew/bin/python3 /Users/wayne/Codes/PycharmProjects/ir/Step2&
 * Serving Flask app 'web'
 * Debug mode: on
WARNING: This is a development server. Do not use it in a production d
 * Running on all addresses (0.0.0.0)
 * Running on http://127.0.0.1:10300
 * Running on http://26.26.26.1:10300
Press CTRL+C to quit
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 112-686-884
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/css/navBar.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/js/configs.js HTTP/1
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/css/search.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/css/config.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/css/msgBox.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/css/global.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/js/msgBox.js HTTP/1.
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/js/search.js HTTP/1.
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/js/jQuery.js HTTP/1.
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/ubuntu.ttf HTTP/1.1"
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/images/icon.svg HTTP
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/images/quit.svg HTTP
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/images/search.svg HT
127.0.0.1 - - [28/Nov/2022 00:55:38] "GET /static/images/settings.svg
127.0.0.1 - - [28/Nov/2022 00:55:38] "POST /system/getSearch HTTP/1.1"
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/css/global.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/css/msgBox.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/css/search.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/css/config.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/js/configs.js HTTP/1
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/js/jQuery.js HTTP/1.
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/css/navBar.css HTTP/
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/js/search.js HTTP/1.
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/js/msgBox.js HTTP/1.
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/images/settings.svg
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/images/icon.svg HTTP
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/images/quit.svg HTTP
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/images/search.svg HT
127.0.0.1 - - [28/Nov/2022 00:57:19] "GET /static/ubuntu.ttf HTTP/1.1"
127.0.0.1 - - [28/Nov/2022 00:57:19] "POST /system/getSearch HTTP/1.1"
```

P-2. 6

Test and make sure the interface and search work correctly

To test and make sure the interface and search work correctly, we use the query statement “food” to search food mods of Minecraft community on Elasticsearch sever. Returned results are shown below.



About 71 results, displaying 1 - 10

Realistic Food Recipes Minecraft 1.18.1 — 10/15/22 12:55 pm
This mod makes vanilla recipes more realistic! You need to craft the respective dough and bake it afterward to create bread, cake, or cookies. You can also cook previously uncookable food like carrots, beetroot, and mushrooms. These new food times...
Mod Realistic Food Recipes Hardcore Challenge Cooked Other — 204 8

NEW FOOD Minecraft 1.18 — 8/19/22 6:10 pm
En este mod se añaden comidas al juego.Recomiendo el uso del mod JEI, debido a que este mod no muestra los crafteos de los items.In this mod foods are added to the game.I recommend the use of the JEI mod, because this mod does not show the craftin...
Other — 262 32

The Food Mod Minecraft 1.18.1 — 10/27/22 3:22 am
NOTE: THIS ONLY WORKS WITH FORGEThis is a mod with some new additionsNew entity's called Death and carlNew blocks called the burger block, disortation and much more!A new dimension called the Food dimensionNew food items including the pizza slice,...
New Content — 237 7

Food Fools 1.18.2 Minecraft 1.18.1 — 8/29/22 10:51 pm
GAME VERSION 1.18.2Food Fools adds many new things to the game-Food you would find at a fast-food place in the United States of America -Coca-Cola, Steak Dinner, and a In 'n Out meal-Throwable mustard, tomato, ketchup, and a sandwich Thank you dis...
New Content Food Fight — 260 10

Joyful food 1.18.2 Minecraft 1.18 — 9/16/22 3:27 pm
Hola a todos este es un mod que va a añadir cosas extras a tu minecraft version 1.18.2va a añadir cosas en el tema de comida como se aclara en el titulo.porfavor si encuentran bugs, errores, incompatibilidad, ect. favor de escribir en comentarios....
New Content — 193 2

More Food Mod Minecraft 1.18 — 8/27/22 2:45 pm
Forge 1.18.2More Foods Mod adds more foodIt Adds:Chicken Sandwich-absorptionregenerationPizza-speed(also adds cheese but that is just for a crafting recipe)Can be used for youtube videos etc, but must have credit given in disc
Other — 313 40

Nether's Cruelty Minecraft 1.18 — 9/27/22 7:24 am
Nether's Cruelty is a small addon to Nether's Exotism, adding a new food to the mod :)The only change added by this mod is a new food, the Moloch Steak, looted by 2 out of 3 Molochs (the mob added by Nether's Exoticism).This new item will give you...
New Content Food Nether Addon Addonmod Exoticism — 522 16

[1.18.2] Nordic's More Food Mod ... Minecraft 1.18.1 — 11/16/22 9:13 am
Nordic's More food introduces over 100 new food items like berries, bacon, new pies and cookies, juice, donuts, and a lot more. There are also a few new types of leaves and plants for you to get the different types of berries, some food items are ...
New Content Mod Food New Recipes Content Newcontent Foodstuff Foodmod 1182mod — 401 72

Trilobit - first part Minecraft 1.18.1 — 8/29/22 9:27 am

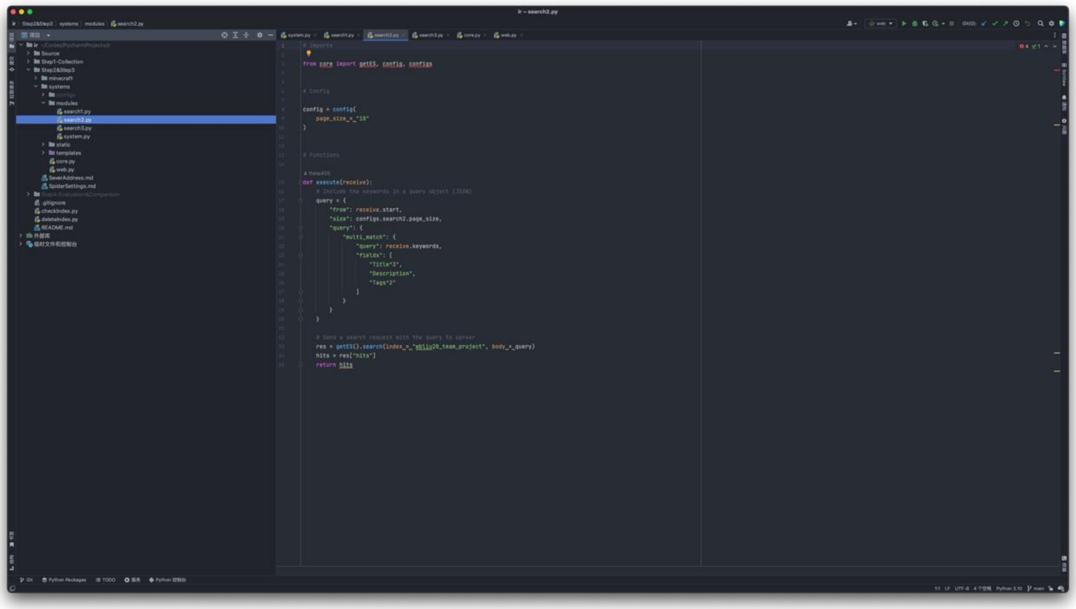
P-2. 7

Step 3. Enhance the Base System:

- This part is completed by Wenbo Liu and Xuda Han.

The default similarity algorithm of Elasticsearch is BM25. We will continue to use BM25 in System 2 and System 3. The difference is that we will change the weights of fields in index and the way of sorting.

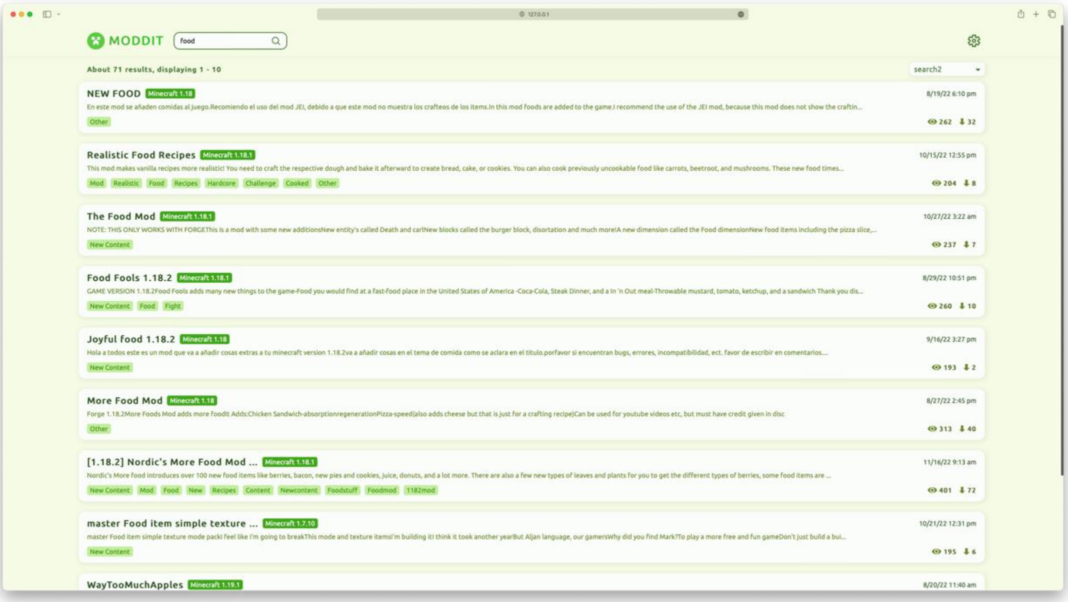
When we query with the default Settings, the boost values for 'title', 'description' and 'tags' are all 1. However, we note that the description is long, and even if it contains the terms of the query, its contents are not necessarily related to it. Therefore, we set different boost values for different fields to give more weight to 'title' and 'tags' in queries. Below is our setup for the second information retrieval system (P-3.1).



```python
# Imports

from core import getES, config, configs


# Config

config = config(
    page_size = "10"
)


# Functions

def execute(receive):
    # Include the keywords in a query object (JSON)
    query = {
        "from": receive.start,
        "size": configs.search2.page_size,
        "query": {
            "multi_match": {
                "query": receive.keywords,
                "fields": [
                    "Title^3",
                    "Description",
                    "Tags^2"
                ]
            }
        }
    }

    # Send a search request with the query to server
    res = getES().search(index = "wbliu20_team_project", body = query)
    hits = res["hits"]
    return hits
```

P-3. 1

Use system 2 to search food mods of Minecraft community on Elasticsearch sever. Returned results are shown below.



About 71 results, displaying 1 - 10

NEW FOOD Minecraft 1.18 — 8/19/22 6:10 pm
En este mod se añaden comidas al juego.Recomiendo el uso del mod JEI, debido a que este mod no muestra los crafteos de los items.In this mod foods are added to the game.I recommend the use of the JEI mod, because this mod does not show the craftin...
Other — 262 32

Realistic Food Recipes Minecraft 1.18.1 — 10/15/22 12:55 pm
This mod makes vanilla recipes more realistic! You need to craft the respective dough and bake it afterward to create bread, cake, or cookies. You can also cook previously uncookable food like carrots, beetroot, and mushrooms. These new food times...
Mod Realistic Food Recipes Hardcore Challenge Cooked Other — 204 8

The Food Mod Minecraft 1.18.1 — 10/27/22 3:22 am
NOTE: THIS ONLY WORKS WITH FORGEThis is a mod with some new additionsNew entity's called Death and carlNew blocks called the burger block, disortation and much more!A new dimension called the Food dimensionNew food items including the pizza slice,...
New Content — 237 7

Food Fools 1.18.2 Minecraft 1.18.1 — 8/29/22 10:51 pm
GAME VERSION 1.18.2Food Fools adds many new things to the game-Food you would find at a fast-food place in the United States of America -Coca-Cola, Steak Dinner, and a In 'n Out meal-Throwable mustard, tomato, ketchup, and a sandwich Thank you dis...
New Content Food Fight — 260 10

Joyful food 1.18.2 Minecraft 1.18 — 9/16/22 3:27 pm
Hola a todos este es un mod que va a añadir cosas extras a tu minecraft version 1.18.2va a añadir cosas en el tema de comida como se aclara en el titulo.porfavor si encuentran bugs, errores, incompatibilidad, ect. favor de escribir en comentarios....
New Content — 193 2

More Food Mod Minecraft 1.18 — 8/27/22 2:45 pm
Forge 1.18.2More Foods Mod adds more foodIt Adds:Chicken Sandwich-absorptionregenerationPizza-speed(also adds cheese but that is just for a crafting recipe)Can be used for youtube videos etc, but must have credit given in disc
Other — 313 40

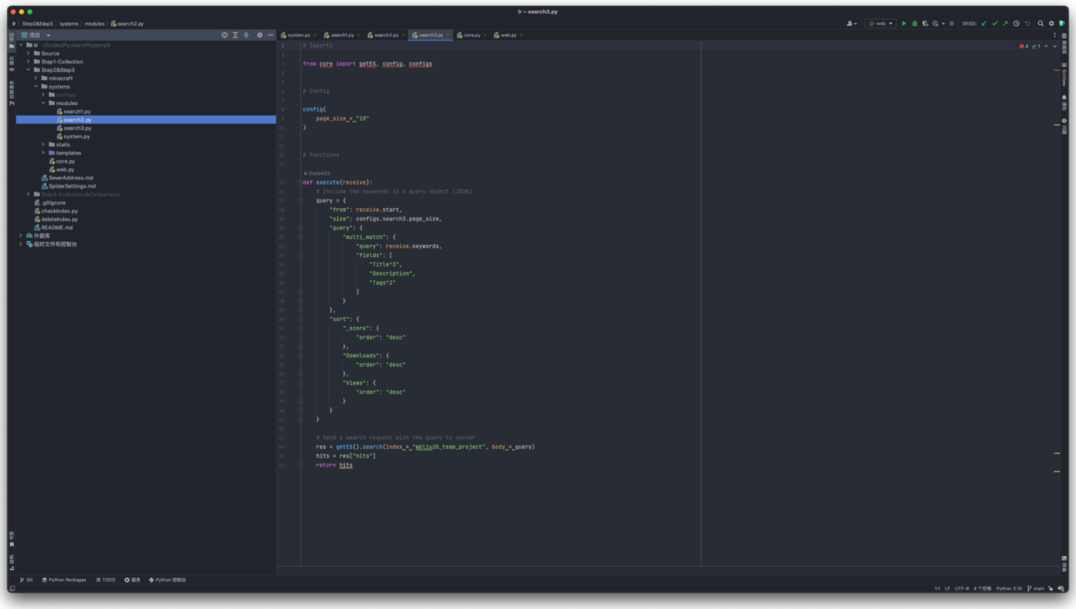
[1.18.2] Nordic's More Food Mod ... Minecraft 1.18.1 — 11/16/22 9:13 am
Nordic's More food introduces over 100 new food items like berries, bacon, new pies and cookies, juice, donuts, and a lot more. There are also a few new types of leaves and plants for you to get the different types of berries, some food items are ...
New Content Mod Food New Recipes Content Newcontent Foodstuff Foodmod 1182mod — 401 72

master Food item simple texture ... Minecraft 1.7.10 — 10/21/22 12:31 pm
master Food item simple texture mode pack! feel like i'm going to breakThis mode and texture itemsI'm building it! think it took another yearBut Aljan language, our gamersWhy did you find Mark?To play a more free and fun gameDon't just build a bui...
New Content — 195 6

WayTooMuchApples Minecraft 1.19.1 — 8/20/22 11:40 am

P-3. 2

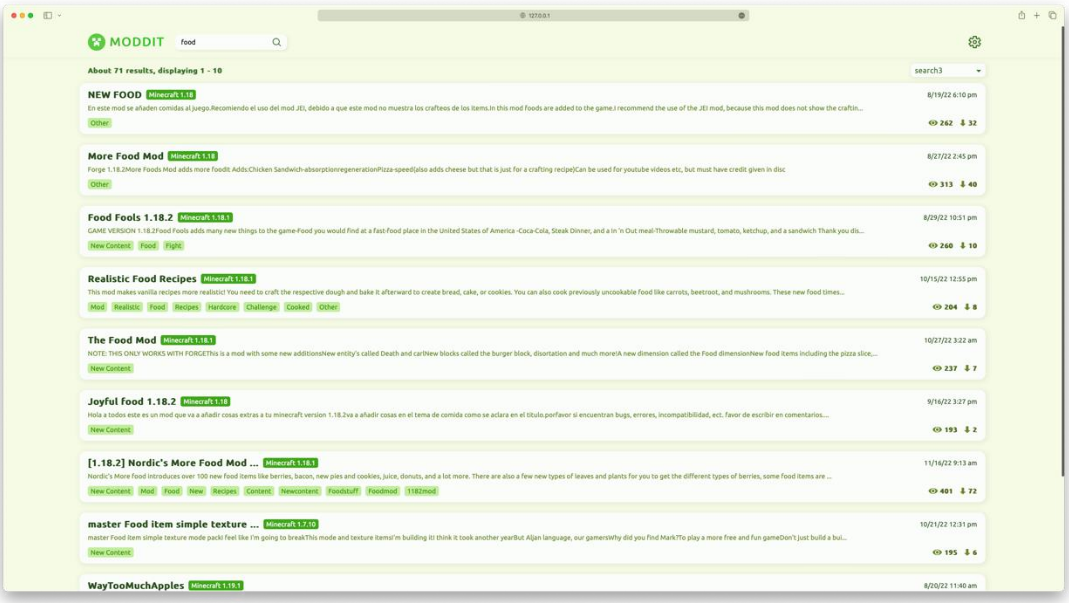
What if two results have the same score? When we came across two results with the same score, we chose to sort the results by downloads first. When the number of downloads was the same, we chose to sort the results by the number of views. Below is our setup for the third information retrieval system (P-3.3).



```python
# Imports

from core import getES, config, configs


# Config

config(
    page_size = "10"
)


# Functions

def execute(receive):
    # Include the keywords in a query object (JSON)
    query = {
        "from": receive.start,
        "size": configs.search3.page_size,
        "query": {
            "multi_match": {
                "query": receive.keywords,
                "fields": [
                    "Title^3",
                    "Description",
                    "Tags^2"
                ]
            }
        },
        "sort": {
            "_score": {
                "order": "desc"
            },
            "Downloads": {
                "order": "desc"
            },
            "Views": {
                "order": "desc"
            }
        }
    }

    # Send a search request with the query to server
    res = getES().search(index = "mbliu20_team_project", body = query)
    hits = res["hits"]
    return hits
```

P-3. 3

Use system 3 to search food mods of Minecraft community on Elasticsearch sever. Returned results are shown below.



food

About 71 results, displaying 1 - 10

search3

NEW FOOD Minecraft 1.18 — 8/19/22 6:10 pm
En este mod se añaden comidas al juego.Recomiendo el uso del mod JEI, debido a que este mod no muestra los crafteos de los items.In this mod foods are added to the game.I recommend the use of the JEI mod, because this mod does not show the craftin...
Other — 262 32

More Food Mod Minecraft 1.18 — 8/27/22 2:45 pm
Forge 1.18.2More Foods Mod adds more foodIt Adds:Chicken Sandwich-absorptionregenerationPizza-speed(also adds cheese but that is just for a crafting recipe)Can be used for youtube videos etc, but must have credit given in disc
Other — 313 40

Food Fools 1.18.2 Minecraft 1.18.1 — 8/29/22 10:51 pm
GAME VERSION 1.18.2Food Fools adds many new things to the game-Food you would find at a fast-food place in the United States of America -Coca-Cola, Steak Dinner, and a In 'n Out meal-Throwable mustard, tomato, ketchup, and a sandwich Thank you dis...
New Content, Food, Fight — 260 10

Realistic Food Recipes Minecraft 1.18.1 — 10/15/22 12:55 pm
This mod makes vanilla recipes more realistic! You need to craft the respective dough and bake it afterward to create bread, cake, or cookies. You can also cook previously uncookable food like carrots, beetroot, and mushrooms. These new food times...
Mod, Realistic, Food, Recipes, Hardcore, Challenge, Cooked, Other — 204 8

The Food Mod Minecraft 1.18.1 — 10/27/22 3:22 am
NOTE: THIS ONLY WORKS WITH FORGEThis is a mod with some new additionsNew entity's called Death and carlNew blocks called the burger block, disortation and much more!A new dimension called the Food dimensionNew food items including the pizza slice,...
New Content — 237 7

Joyful food 1.18.2 Minecraft 1.18 — 9/16/22 3:27 pm
Hola a todos este es un mod que va a añadir cosas extras a tu minecraft version 1.18.2va a añadir cosas en el tema de comida como se aclara en el titulo.porfavor si encuentran bugs, errores, incompatibilidad, ect. favor de escribir en comentarios....
New Content — 193 2

[1.18.2] Nordic's More Food Mod ... Minecraft 1.18.1 — 11/16/22 9:13 am
Nordic's More food introduces over 100 new food items like berries, bacon, new pies and cookies, juice, donuts, and a lot more. There are also a few new types of leaves and plants for you to get the different types of berries, some food items are ...
New Content, Mod, Food, New, Recipes, Content, Newcontent, Foodstuff, Foodmod, 1182mod — 401 72

master Food item simple texture ... Minecraft 1.7.10 — 10/21/22 12:31 pm
master Food item simple texture mode pack! feel like I'm going to breakThis mode and texture items!'m building it! think it took another yearBut Aljan language, our gamersWhy did you find Mark?To play a more free and fun gameDon't just build a bui...
New Content — 195 6

WayTooMuchApples Minecraft 1.19.1 — 8/20/22 11:40 am

P-3. 4

Step 4. Evaluate and Compare the Performances:

- This part is completed by Yifei Guo.

Run 6 different queries and make relevant judgments for the top 10 hits

Query 1: food

Retrieved	System1	System2	System3
Item1	R	R	R
Item2	R	R	R
Item3	R	R	R
Item4	R	R	R
Item5	R	R	R
Item6	R	R	R
Item7	R	R	R
Item8	R	N	N
Item9	N	R	R
Item10	N	R	R

Query 2: sword

Retrieved	System1	System2	System3
Item1	R	R	R
Item2	R	R	R
Item3	R	R	R
Item4	R	R	R
Item5	R	R	R
Item6	R	R	R
Item7	R	R	R
Item8	N	R	R
Item9	R	R	R
Item10	R	R	R

Query 3: pickaxe

Retrieved	System1	System2	System3
Item1	R	R	R
Item2	R	R	R
Item3	R	R	R
Item4	R	R	R
Item5	N	R	R
Item6	N	N	N
Item7	R	N	N
Item8	N	R	R
Item9	R	N	N
Item10	N	N	N

Query 4: gold

Retrieved	System1	System2	System3
Item1	R	R	R
Item2	R	R	R

Item3	R	R	R
Item4	R	R	R
Item5	N	N	N
Item6	N	N	N
Item7	R	R	R
Item8	N	N	N
Item9	N	N	N
Item10	R	N	N

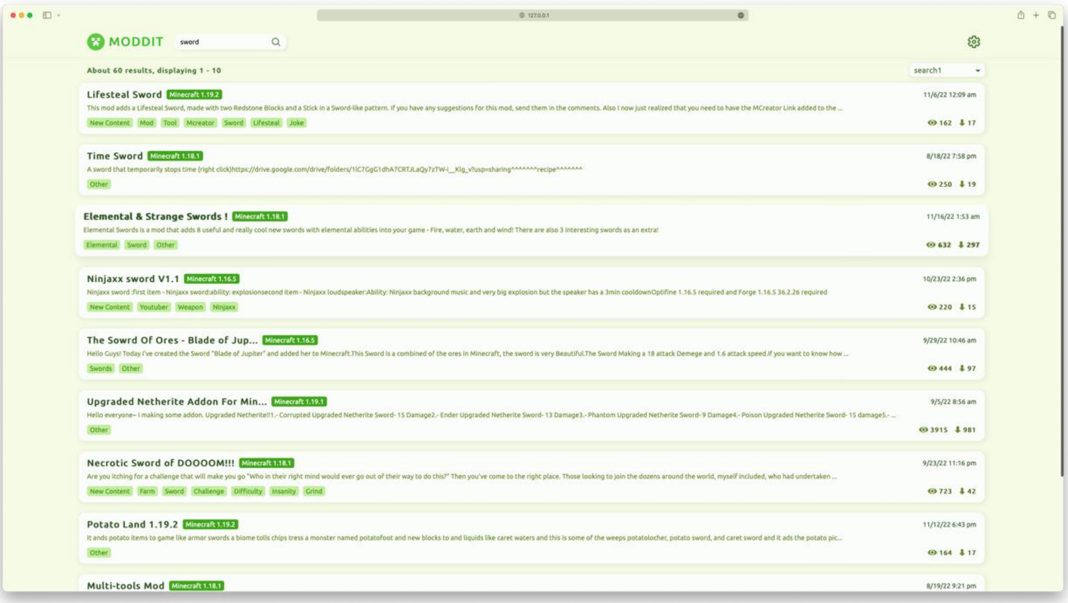
Query 5: potion

Retrieved	System1	System2	System3
Item1	R	R	R
Item2	R	R	R
Item3	R	R	R
Item4	R	R	R
Item5	N	N	N
Item6	R	N	N
Item7	N	R	R
Item8	R	N	N
Item9	N	N	N
Item10	N	R	R

Query 6: dimension

Retrieved	System1	System2	System3
Item1	R	R	R
Item2	R	R	R
Item3	R	R	R
Item4	R	R	R
Item5	N	R	R
Item6	R	R	R
Item7	R	R	R
Item8	R	R	R
Item9	N	R	R
Item10	R	R	R

Screen shots of query results (query: sword)



127.0.0.1

MODDIT sword

About 60 results, displaying 1 - 10 search1

Lifesteal Sword Minecraft 1.19.2 — 11/6/22 12:09 am
This mod adds a Lifesteal Sword, made with two Redstone Blocks and a Stick in a Sword-like pattern. If you have any suggestions for this mod, send them in the comments. Also I now just realized that you need to have the MCreator Link added to the ...
New Content · Mod · Tool · Mcreator · Sword · Lifesteal · Joke — 162 · 17

Time Sword Minecraft 1.18.1 — 8/18/22 7:58 pm
A sword that temporarily stops time (right click)https://drive.google.com/drive/folders/1lC7GgG1dhA7CRTJLaQy7zTW-i__Klg_v?usp=sharing^^^^^^^recipe^^^^^^^
Other — 250 · 19

Elemental & Strange Swords ! Minecraft 1.18.1 — 11/16/22 1:53 am
Elemental Swords is a mod that adds 8 useful and really cool new swords with elemental abilities into your game - Fire, water, earth and wind! There are also 3 interesting swords as an extra!
Elemental · Sword · Other — 632 · 297

Ninjaxx sword V1.1 Minecraft 1.16.5 — 10/23/22 2:36 pm
Ninjaxx sword :first item - Ninjaxx sword:ability: explosionsecond item - Ninjaxx loudspeaker:Ability: Ninjaxx background music and very big explosion but the speaker has a 3min cooldownOptifine 1.16.5 required and Forge 1.16.5 36.2.26 required
New Content · Youtuber · Weapon · Ninjaxx — 220 · 15

The Sowrd Of Ores - Blade of Jup... Minecraft 1.16.5 — 9/29/22 10:46 am
Hello Guys! Today I've created the Sword "Blade of Jupiter" and added her to Minecraft.This Sword is a combined of the ores in Minecraft, the sword is very Beautiful.The Sword Making a 18 attack Demege and 1.6 attack speed.If you want to know how ...
Swords · Other — 444 · 97

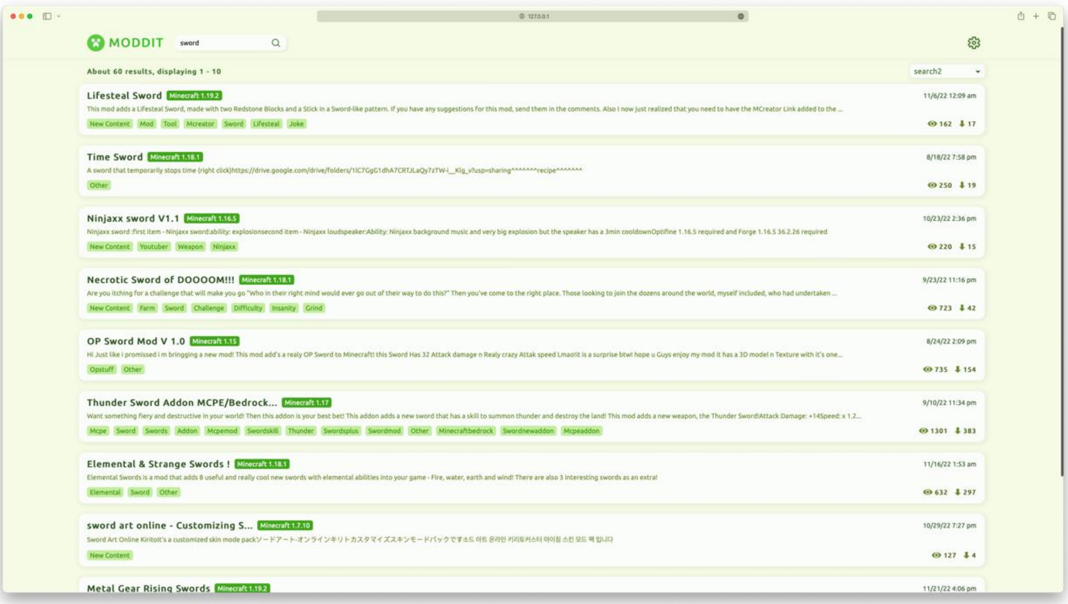
Upgraded Netherite Addon For Min... Minecraft 1.19.1 — 9/5/22 8:56 am
Hello everyone– I making some addon. Upgraded Netherite!!1.- Corrupted Upgraded Netherite Sword- 15 Damage2.- Ender Upgraded Netherite Sword- 13 Damage3.- Phantom Upgraded Netherite Sword- 9 Damage4.- Poison Upgraded Netherite Sword- 15 damage5.- ...
Other — 3915 · 981

Necrotic Sword of DOOOOM!!! Minecraft 1.18.1 — 9/23/22 11:16 pm
Are you itching for a challenge that will make you go "Who in their right mind would ever go out of their way to do this?" Then you've come to the right place. Those looking to join the dozens around the world, myself included, who had undertaken ...
New Content · Farm · Sword · Challenge · Difficulty · Insanity · Grind — 723 · 42

Potato Land 1.19.2 Minecraft 1.19.2 — 11/12/22 6:43 pm
It ands potato items to game like armor swords a biome tolls chips tress a monster named potatofoot and new blocks to and liquids like caret waters and this is some of the weeps potatolocher, potato sword, and caret sword and it ads the potato pic...
Other — 164 · 17

Multi-tools Mod Minecraft 1.18.1 — 8/19/22 9:21 pm

P-4. 1



127.0.0.1

MODDIT sword

About 60 results, displaying 1 - 10 search2

Lifesteal Sword Minecraft 1.19.2 — 11/6/22 12:09 am
This mod adds a Lifesteal Sword, made with two Redstone Blocks and a Stick in a Sword-like pattern. If you have any suggestions for this mod, send them in the comments. Also I now just realized that you need to have the MCreator Link added to the ...
New Content · Mod · Tool · Mcreator · Sword · Lifesteal · Joke — 162 · 17

Time Sword Minecraft 1.18.1 — 8/18/22 7:58 pm
A sword that temporarily stops time (right click)https://drive.google.com/drive/folders/1lC7GgG1dhA7CRTJLaQy7zTW-i__Klg_v?usp=sharing^^^^^^^recipe^^^^^^^
Other — 250 · 19

Ninjaxx sword V1.1 Minecraft 1.16.5 — 10/23/22 2:36 pm
Ninjaxx sword :first item - Ninjaxx sword:ability: explosionsecond item - Ninjaxx loudspeaker:Ability: Ninjaxx background music and very big explosion but the speaker has a 3min cooldownOptifine 1.16.5 required and Forge 1.16.5 36.2.26 required
New Content · Youtuber · Weapon · Ninjaxx — 220 · 15

Necrotic Sword of DOOOOM!!! Minecraft 1.18.1 — 9/23/22 11:16 pm
Are you itching for a challenge that will make you go "Who in their right mind would ever go out of their way to do this?" Then you've come to the right place. Those looking to join the dozens around the world, myself included, who had undertaken ...
New Content · Farm · Sword · Challenge · Difficulty · Insanity · Grind — 723 · 42

OP Sword Mod V 1.0 Minecraft 1.15 — 8/24/22 2:09 pm
Hi Just like i promissed i m bringging a new mod! This mod add's a realy OP Sword to Minecraft! this Sword Has 32 Attack damage n Realy crazy Attak speed Lmao!it is a surprise btw! hope u Guys enjoy my mod it has a 3D model n Texture with it's one...
Opstuff · Other — 735 · 154

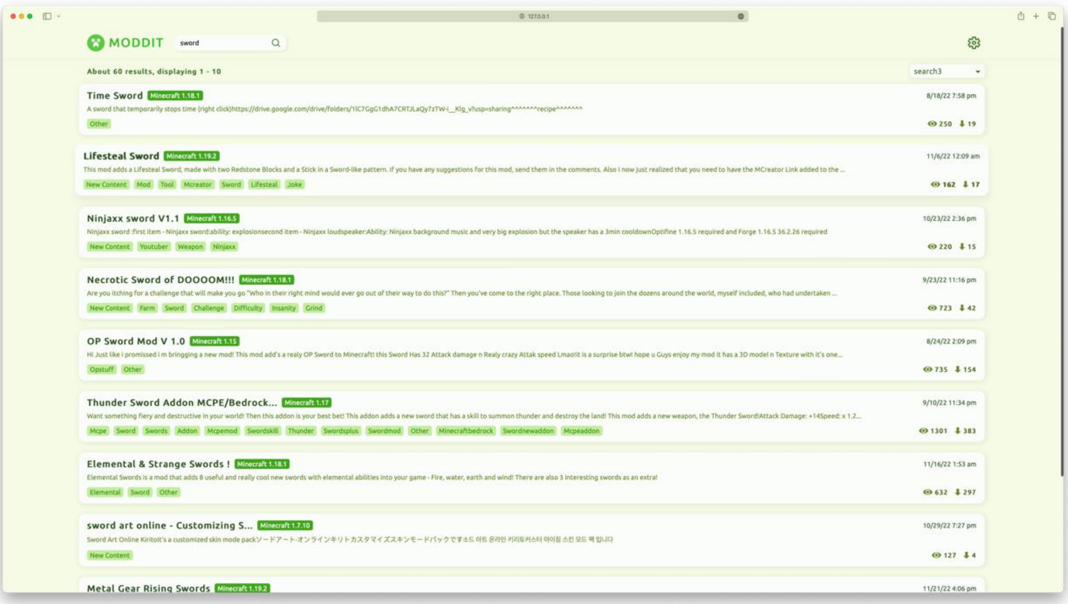
Thunder Sword Addon MCPE/Bedrock... Minecraft 1.17 — 9/10/22 11:34 pm
Want something fiery and destructive in your world! Then this addon is your best bet! This addon adds a new sword that has a skill to summon thunder and destroy the land! This mod adds a new weapon, the Thunder Sword!Attack Damage: +14Speed: x 1.2...
Mcpe · Sword · Swords · Addon · Mcpemod · Swordskill · Thunder · Swordsplus · Swordmod · Other · Minecraftbedrock · Swordnewaddon · Mcpeaddon — 1301 · 383

Elemental & Strange Swords ! Minecraft 1.18.1 — 11/16/22 1:53 am
Elemental Swords is a mod that adds 8 useful and really cool new swords with elemental abilities into your game - Fire, water, earth and wind! There are also 3 interesting swords as an extra!
Elemental · Sword · Other — 632 · 297

sword art online - Customizing S... Minecraft 1.7.10 — 10/29/22 7:27 pm
Sword Art Online KiritoIt's a customized skin mode packソードアート-オンラインキリトカスタマイズスキンモードパックです소드 아트 온라인 키리토커스터 마이징 스킨 모드 팩 입니다
New Content — 127 · 4

Metal Gear Rising Swords Minecraft 1.19.2 — 11/21/22 4:06 pm

P-4. 2



127.0.0.1

MODDIT sword

About 60 results, displaying 1 - 10

search3

Time Sword Minecraft 1.18.1 8/18/22 7:58 pm
A sword that temporarily stops time (right click)https://drive.google.com/drive/folders/1lC7GgG1dhA7CRTJLaQy7zTW-i__Klg_v?usp=sharing^^^^^^^recipe^^^^^^^
Other 250 19

Lifesteal Sword Minecraft 1.19.2 11/6/22 12:09 am
This mod adds a Lifesteal Sword, made with two Redstone Blocks and a Stick in a Sword-like pattern. If you have any suggestions for this mod, send them in the comments. Also I now just realized that you need to have the MCreator Link added to the ...
New Content Mod Tool Mcreator Sword Lifesteal Joke 162 17

Ninjaxx sword V1.1 Minecraft 1.16.5 10/23/22 2:36 pm
Ninjaxx sword :first item - Ninjaxx sword:ability: explosionsecond item - Ninjaxx loudspeaker:Ability: Ninjaxx background music and very big explosion but the speaker has a 3min cooldownOptifine 1.16.5 required and Forge 1.16.5 36.2.26 required
New Content Youtuber Weapon Ninjaxx 220 15

Necrotic Sword of DOOOOM!!! Minecraft 1.18.1 9/23/22 11:16 pm
Are you itching for a challenge that will make you go "Who in their right mind would ever go out of their way to do this?" Then you've come to the right place. Those looking to join the dozens around the world, myself included, who had undertaken ...
New Content Farm Sword Challenge Difficulty Insanity Grind 723 42

OP Sword Mod V 1.0 Minecraft 1.15 8/24/22 2:09 pm
Hi Just like i promissed i m bringging a new mod! This mod add's a realy OP Sword to Minecraft! this Sword Has 32 Attack damage n Realy crazy Attak speed Lmao!it is a surprise btw! hope u Guys enjoy my mod it has a 3D model n Texture with it's one...
Opstuff Other 735 154

Thunder Sword Addon MCPE/Bedrock... Minecraft 1.17 9/10/22 11:34 pm
Want something fiery and destructive in your world! Then this addon is your best bet! This addon adds a new sword that has a skill to summon thunder and destroy the land! This mod adds a new weapon, the Thunder Sword!Attack Damage: +14Speed: x 1.2...
Mcpe Sword Swords Addon Mcpemod Swordskill Thunder Swordsplus Swordmod Other Minecraftbedrock Swordnewaddon Mcpeaddon 1301 383

Elemental & Strange Swords ! Minecraft 1.18.1 11/16/22 1:53 am
Elemental Swords is a mod that adds 8 useful and really cool new swords with elemental abilities into your game - Fire, water, earth and wind! There are also 3 interesting swords as an extra!
Elemental Sword Other 632 297

sword art online - Customizing S... Minecraft 1.7.10 10/29/22 7:27 pm
Sword Art Online KiritoIt's a customized skin mode packソードアート-オンラインキリトカスタマイズスキンモードパックです소드 아트 온라인 키리토커스터 마이징 스킨 모드 팩 입니다
New Content 127 4

Metal Gear Rising Swords Minecraft 1.19.2 11/21/22 4:06 pm

P-4. 3

Compare results across 3 systems

By comparing the query results of the three systems, we can find that the accuracy of system 2 and system 3 is improved compared with system 1, but there seems to be no obvious gap between system 2 and system 3. In the case of the same accuracy, the DCG (Discounted Cumulative Gain) of system 2 and system 3 seems to be higher, that is, when the same number of related documents are returned, related documents rank higher in system 2 and system 3.

Calculate MAP for each of the queries on each system

1) Average precision for each query on each system:

Average Precision	Query 1	Query 2	Query 3	Query 4	Query 5	Query 6
System 1	1.0	0.9765	0.8968	0.8857	0.9306	0.9207
System 2	0.9765	1.0	0.9583	0.9429	0.8857	1.0
System 3	0.9765	1.0	0.9583	0.9429	0.8857	1.0

2) DCG for each query on each system:

DCG	Query 1	Query 2	Query 3	Query 4	Query 5	Query 6
System 1	4.6380	4.9212	3.8026	3.7882	3.8511	4.5084
System 2	4.9212	5.2545	3.8949	3.4871	3.7882	5.2545
System 3	4.9212	5.2545	3.8949	3.4871	3.7882	5.2545

3) MAP for each system:

- System 1: MAP = (1.0+0.9765+0.8968+0.8857+0.9306+0.9207)/6 = 0.93505
- System 2: MAP = (0.9765+1.0+0.9583+0.9429+0.8857+1.0)/6 = 0.9606
- System 3: MAP = (0.9765+1.0+0.9583+0.9429+0.8857+1.0)/6 = 0.9606

Discuss and report the comparison results

It can be seen from the above calculation results that the MAP of system 2 and system 3 is slightly larger than that of system 1. This indicates that systems 2 and 3 have improved performance over systems 1. At the same time, we also calculated the DCG value of each query statement on each system. The results show that in most cases, the DCG values of system 2 and system 3 are greater than those of system 1. This indicates that the relevant documents rank higher in the search results of systems 2 and 3.

What We Have Learned

Through this project, we have a deeper understanding of the information retrieval system.

First, during the development of the project, we learned the structure of a complete information retrieval system, how to use scrapy framework to crawl and clean data and build indexes and store data in elastic search, and how to use flask framework to build simple web pages and establish connections with servers.

Second, when evaluating the performance of different systems, we learned the methods to evaluate the performance of different systems and learned to use these methods to conduct a simple analysis of the system. On top of the MAP calculation, we also calculated the DCG value of each query to measure other performance of the system.

Of course, we think there are still problems with our system. Comparing the query results shows that systems 2 and 3 are always not better than system 1, suggesting that our improvements are not applicable in all cases. This is where we think the system should be improved.