

2025.05.27.(수)

NS3 Code Generator

: LLM 기반의 네트워크 시뮬레이션 코드 자동 생성

202101109 박수화
202102722 최희원

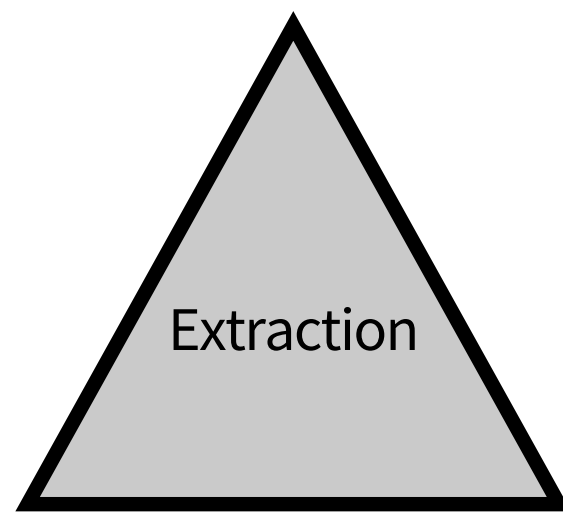
목차

- 1 RAG DB 구축 흐름**
- 2 Data Crawling (stackoverflow)**
- 3 Data Crawling (github)**

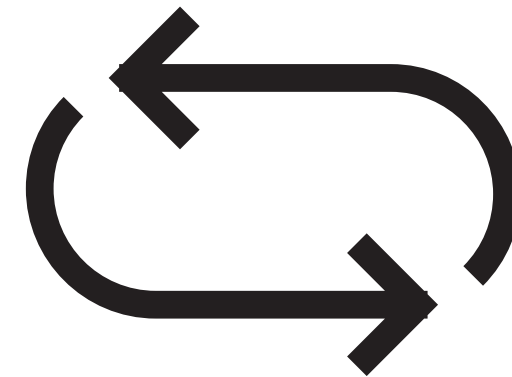
RAG DB 구축 흐름



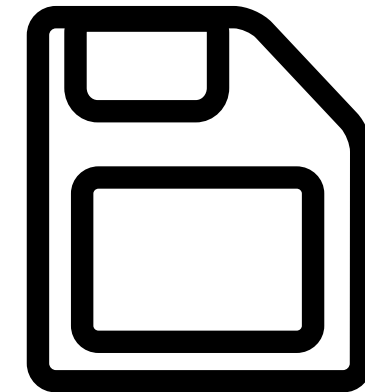
수집



추출




변환



저장

Data Crawling (stackoverflow)

NS-3 태그 기반 Stack Overflow Q&A 데이터 수집




 [About](#) [Products](#) [OverflowAI](#) [Log in](#) [Sign up](#)

[Home](#)
[Questions](#)
[Tags](#)

[Discussions](#) [Labs](#)
[Chat](#)
[Articles](#)
[Users](#)

[Companies](#)

COLLECTIVES +
Communities for your favorite technologies.
[Explore all Collectives](#)

TEAMS
  
Ask questions, find answers and collaborate at work with Stack Overflow for Teams.
[Try Teams for free](#)
[Explore Teams](#)

Tags

A tag is a keyword or label that categorizes your question with other, similar questions. Using the right tags makes it easier for others to find and answer your question.

[Show all tag synonyms](#)

ns-3

439 questions 16 asked this year

amazon-s3

51315 questions 9 asked this week, 38 this month

amazon-s3-select

92 questions 1 asked this year

python-s3fs

89 questions 4 asked this year

knox-amazon-s3-client

87 questions

amazon-s3-access-points

25 questions 2 asked this year

gns3

19 questions 11 asked this year

amazons3client

4 questions 3 asked this year

gatsby-plugin-s3

1 question

- stackoverflow 웹사이트에서 `ns-3` 태그로 분류된 게시물 수집
- 질문-답변 형태의 데이터를 JSON 형식으로 저장

Data Crawling (stackoverflow)

NS-3 태그 기반 Stack Overflow Q&A 데이터 수집

stackoverflow

AboutProductsOverflowAI

Q [ns-3]

Log inSign up

Home

Questions

Tags

DiscussionsLabs

Chat

Articles

Users

Companies

COLLECTIVES+

Communities for your favorite technologies.
Explore all Collectives

TEAMS

Ask questions, find answers and collaborate at work with Stack Overflow for Teams.
Try Teams for free
Explore Teams

[ns-3]

ns-3 (Network Simulator 3) is a event driven simulator to model different types of networks.

Sign up to watch this tag and see more personalized content

Watch tagGo to Wiki

435 questions

NewestActiveBountiedUnansweredMore

Filter

0 votes

re-naming string argument of Ssid for one network is changing results in ns-3

0 answers

24 views

This question is about ns-3 simulator. I have a simple Wifi network with AP and I am varying the number of STAs. No mobility yet. AP and STAs are distributed according to RowFirst in Grid...

wifi ns-3 ssid

Ella Robinson 1 asked Feb 25 at 16:08

0 votes

RPL library in NS-3

0 answers

41 views

I want to use RPL protocol in NS-3 simulator. I found 3 entries, but none of them answered it. 12 years ago, 2) question for NS2, 3) generic question about IoT. The gitlub entry for NS3 which I ...

ns-3 rpl

George Violettas 381 asked Feb 5 at 10:13

0 votes

I am trying to run sample simulation of tracemetrics, But not able to run program stop at this stage

0 answers

27 views

user@user-VMware-Virtual-Platform:~/tracemetrics-1.4.0\$ java -jar tracemetrics.jar Exception in thread "AWT-EventQueue-1" java.lang.NoClassDefFoundError: org/jdesktop/beansbinding/Prope...

java simulation ns-3

Tahir 39 asked Feb 3 at 15:25

0 votes

EDCA on ns3 simulator

0 answers

14 views

I am looking for some example code to simulate EDCA on ns-3. How do we use EdcaParameterSet edcaParams and "load" it to STAs on MAC layer? ns-3 documents has :: in functions which are ...

simulator ns-3

Ella 1 asked Jan 28 at 18:45

0 votes

De-AggregateObject and Change the aggregated object from a Class in ns-3 implemented in ns-3.28

0 answers

0 views

The Overflow Blog

WBIT #8: Typescript for gut biomes

"The future is agents": Building a platform for RAG agents

Featured on Meta

Two New Chat Rooms Experiment Geared Towards New Users

How Can We Bring More Fun to the Stack Ecosystem? Community Ideas Welcome!

How can I revert the style/layout changes to comments?

Policy: Generative AI (e.g., ChatGPT) is banned

2025 Moderator Election Q&A – Question Collection

Microsoft Azure

비즈니스 요구 사항에 맞춰 실시간으로 확장하세요.

언제든지 취소도 가능합니다.

Azure 체험하기

Report this ad

Related Tags

c++ × 156

network-programming × 66

simulation × 40

Data Crawling (stackoverflow)

Crawling 방법

- stackoverflow 웹사이트에서 `ns-3` 태그로 분류된 게시물 수집
- 질문-답변 형태의 데이터를 JSON 형식으로 저장
- 질문 페이지에는 여러 개의 답변이 달릴 수 있기 때문에, 질문자가 직접 채택한 답변이 있으면, 답변을 우선적으로 수집
 - 질문자가 답변을 채택하지 않았을 때는, Stack Overflow에서 사용자들이 투표하여 가장 많은 득표(추천)를 얻은 답변을 선정
 - 답변이 없는 경우 제외

Data Crawling (stackoverflow)

Crawling 방법

```
1  import time
2  import json
3  import cloudscraper
4  from bs4 import BeautifulSoup
5  import re
6
7  # Configuration
8  BASE_URL = 'https://stackoverflow.com'
9  TAG = 'ns-3'
10 DELAY = 1 # Delay between requests (seconds)
11 MAX_PAGES = 30 # Number of pages to crawl (15 posts per page)
12 OUTPUT_FILE = 'ns3_qa.json'
13
14 scraper = cloudscraper.create_scraper()
15 HEADERS = {
16     'accept': 'text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp',
17     'accept-language': 'ko-KR,ko;q=0.9,en-US;q=0.8,en;q=0.7',
18     'cache-control': 'no-cache',
19     'pragma': 'no-cache',
20     'sec-ch-ua': '"Chromium";v="136", "Google Chrome";v="136", "Not.A/Brand";v="99"',
21     'sec-ch-ua-mobile': '?0',
22     'sec-ch-ua-platform': '"macOS"',
23     'sec-fetch-dest': 'document',
24     'sec-fetch-mode': 'navigate',
25     'sec-fetch-site': 'none',
26     'sec-fetch-user': '?1',
27     'upgrade-insecure-requests': '1',
28     'user-agent': 'Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML',
29     'cookie': 'prov=17412cb4-95bb-42a0-b540-b9eb92e3817f; __cflb=02DiuFA7zZL3enAQJD3AX8Zzv',
30 }
```

```
32 # Helpers
33 def slugify(title: str) -> str:
34     """Convert title to URL slug."""
35     slug = title.lower()
36     slug = re.sub(r"^[a-z0-9\s-]", "", slug)
37     slug = re.sub(r"[\s-]+", "-", slug).strip('-')
38     return slug
39
40
41 def get_question_links(page: int) -> list:
42     """Fetch question URLs from the tagged listing page."""
43     url = f"{BASE_URL}/questions/tagged/{TAG}?tab=newest&page={page}"
44     resp = scraper.get(url, headers=HEADERS)
45     resp.raise_for_status()
46     soup = BeautifulSoup(resp.text, 'html.parser')
47
48     links = []
49     for summary in soup.select('div.s-post-summary'):
50         a = summary.select_one('h3.s-post-summary--content-title a.s-link')
51         if a and a.get('href'):
52             links.append(BASE_URL + a['href'])
53     return links
```

stackoverflow.py

Data Crawling (stackoverflow)

Crawling 방법

stackoverflow.py

```
56 def parse_question(url: str) -> dict:
57     """Parse question page for title, body, and best answer."""
58     resp = scraper.get(url, headers=HEADERS)
59     resp.raise_for_status()
60     soup = BeautifulSoup(resp.text, 'html.parser')
61
62     # Title
63     title_tag = soup.select_one('h1 a.question-hyperlink')
64     title = title_tag.get_text(strip=True) if title_tag else ''
65
66     # Question body
67     q_body = soup.select_one('div.s-prose.js-post-body')
68     question = q_body.get_text("\n", strip=True) if q_body else ''
69
70     # Answer: accepted first, else highest-score
71     answer = ''
72     acc = soup.select_one('div.answer.js-accepted-answer')
73     if acc:
74         body = acc.select_one('div.s-prose.js-post-body')
75         answer = body.get_text("\n", strip=True) if body else ''
76     else:
77         candidates = []
78         for a_div in soup.select('div.answer'):
79             body = a_div.select_one('div.s-prose.js-post-body')
80             text = body.get_text("\n", strip=True) if body else ''
81             score_tag = a_div.select_one('div.js-vote-count')
82             try:
83                 score = int(score_tag.get_text(strip=True))
84             except:
85                 score = 0
86             candidates.append((score, text))
87         if candidates:
88             answer = max(candidates, key=lambda x: x[0])[1]
89
90     return {'url': url, 'title': title, 'question': question, 'answer': answer}
```

```
92 # Main
93 def main():
94     results = []
95     for page in range(1, MAX_PAGES + 1):
96         print(f"[Page {page}] fetching listings...")
97         try:
98             links = get_question_links(page)
99         except Exception as e:
100             print(f"Failed to fetch page {page}: {e}")
101             break
102         if not links:
103             break
104
105         for link in links:
106             print(f" -> parsing {link}")
107             try:
108                 qa = parse_question(link)
109                 # Skip unanswered questions
110                 if not qa['answer'].strip():
111                     print(f"    skipped {link} (no answer)")
112                     continue
113                 results.append(qa)
114             except Exception as e:
115                 print(f"    parse error for {link}: {e}")
116             time.sleep(DELAY)
117
118     # Save to JSON
119     with open(OUTPUT_FILE, 'w', encoding='utf-8') as f:
120         json.dump(results, f, ensure_ascii=False, indent=2)
121     print(f"Saved {len(results)} Q&A entries to {OUTPUT_FILE}")
122
123 if __name__ == '__main__':
124     main()
```


Data Crawling (stackoverflow)

Crawling 결과

ns3_qa.json

```
1  [
2    {
3      "url": "https://stackoverflow.com/questions/79179369/de-aggregateobject-and-change-the-aggregated-object-from-a-class-in-c-impleme",
4      "title": "De-AggregateObject and Change the aggregated object from a Class in c++ implemented in Ns3.38",
5      "question": "I implemented Vehicle Ad-hoc Network in NS3.38 and used default Node class in NS3. also I created Cluster Object that has some",
6      "answer": "I think your goal in this question is clustering nodes and getting each cluster from node object. also each cluster has multi no",
7    },
8    {
9      "url": "https://stackoverflow.com/questions/79146271/importing-opencv-and-tensorflow-lite-into-ns-3-38",
10     "title": "Importing OpenCV and TensorFlow Lite into ns-3.38",
11     "question": "I am currently working on a project that involves using\n0penCV\nand\nTensorFlow Lite\nwithin the\nns-3.38\nsimulation environ",
12     "answer": "You're missing include headers in scratch/EDEN/node.cc.\n#include \"ns3/network-module.h\"\"",
13   },
14   {
15     "url": "https://stackoverflow.com/questions/79090343/missing-system-dependencies-for-ns3",
16     "title": "missing system dependencies for ns3",
17     "question": "I have been setting up ns-3-allinone on my WSL Python virtual environment using the in-built 'bake' tool. However during the se",
18     "answer": "Are you running bake from within your virtual environment?\nIf no, then try doing that.\nIf yes, then it could be a limitation of",
19   },
20   {
21     "url": "https://stackoverflow.com/questions/78645306/ns-3-multiple-wifi-clients-and-one-server-using-udp",
22     "title": "NS-3 Multiple WiFi clients and one server using UDP",
23     "question": "I am trying to built a ns-3 simulation with the following characteristics . I want multiple client nodes that will periodically",
24     "answer": "I don't know if its right but it seems to work I did it with UdpServer\nNS_LOG_INFO(\"Create UdpServer application on AP node.\")",
25   },
26   {
27     "url": "https://stackoverflow.com/questions/78485567/how-to-make-full-buffer-traffic-in-ns-3-lte-module",
28     "title": "How to make full-buffer traffic in NS-3 LTE-module",
29     "question": "I've already read documentation for LTE-module and EPC packets, but I don't understand how can I create full-buffer traffic. In",
30     "answer": "you can use\n\nTime interPacketInterval = MilliSeconds(1); //1ms for",
31   },
32 ]
```

감사합니다 :)
