

INPUT:

```
import requests
from bs4 import BeautifulSoup
from urllib.parse import urljoin, urlparse

def is_valid_url(url, base_domain):
    parsed_url = urlparse(url)
    return parsed_url.netloc == base_domain or not parsed_url.netloc

# Web crawler function
def web_crawler(start_url, depth):
    visited_urls = set()

    def crawl(url, current_depth):
        if current_depth > depth or url in visited_urls:
            return
        visited_urls.add(url)

        try:
            response = requests.get(url)
            response.raise_for_status()
        except requests.RequestException as e:
            print(f"Failed to fetch {url}: {e}")
            return

        soup = BeautifulSoup(response.text, 'html.parser')
        print(f"Visited: {url} at depth {current_depth}")

        base_domain = urlparse(start_url).netloc

        for link in soup.find_all('a', href=True):
            href = link['href']
            full_url = urljoin(url, href) # Build absolute URL

            if is_valid_url(full_url, base_domain):
                crawl(full_url, current_depth + 1)

    crawl(start_url, 0)

start_url = "https://webscraper.io/test-sites/e-commerce/allinone"
depth = 2 # Set crawling depth limit

web_crawler(start_url, depth)
```

OUTPUT:

```
PS C:\Users\saura\Desktop\4th year study material\Lab Program\IR LAB> &
C:/Users/saura/AppData/Local/Programs/Python/Python311/python.exe
"c:/Users/saura/Desktop/4th year study material/Lab Program/IR LAB/Lab4.py"
Visited: https://webscraper.io/test-sites/e-commerce/allinone at depth 0
```

Visited: <https://webscraper.io/> at depth 1
Visited: <https://webscraper.io/cloud-scraper> at depth 2
Visited: <https://webscraper.io/pricing> at depth 2
Visited: <https://webscraper.io/documentation> at depth 2
Visited: <https://webscraper.io/tutorials> at depth 2
Visited: <https://webscraper.io/how-to-videos> at depth 2
Visited: <https://webscraper.io/test-sites> at depth 2
Visited: <https://webscraper.io/about-us> at depth 2
Visited: <https://webscraper.io/contact> at depth 2
Visited: <https://webscraper.io/privacy-policy> at depth 2
Visited: <https://webscraper.io/extension-privacy-policy> at depth 2
Visited: https://webscraper.io/downloads/Web_Scraper_Media_Kit.zip at depth 2
Visited: <https://webscraper.io/jobs> at depth 2
Visited: <https://webscraper.io/blog> at depth 2
Visited: <https://webscraper.io/screenshots> at depth 2
Failed to fetch <mailto:info@webscraper.io>: No connection adapters were found for 'mailto:info@webscraper.io'
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/computers> at depth 1
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/computers/laptops> at depth 2
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/computers/tablets> at depth 2
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/phones> at depth 2
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/product/109> at depth 2
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/product/62> at depth 2
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/product/28> at depth 2
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/product/135> at depth 1
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/product/88> at depth 1
Visited: <https://webscraper.io/test-sites/e-commerce/allinone/product/138> at depth 1
PS C:\Users\saura\Desktop\4th year study material\Lab Program\IR LAB>