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| **Lấy HTTP Header của một trang web** | **Lấy HTTP Body một trang web** |
| import requests  url = "https://vnexpress.net/"  response = requests.get(url)  header = response.headers  print(header) | import urllib.request  url = "https://vnexpress.net/"  response = urllib.request.urlopen(url)  body = response.read()  print(body) |

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| **Lấy HTML Header của một trang web** | **Lấy thông tin từ một trang web** |
| import requests  from bs4 import BeautifulSoup  url = "https://vnexpress.net/"  response = requests.get(url)  soup = BeautifulSoup(response.content, 'html.parser')  header = soup.find("header")  print(header) | from bs4 import BeautifulSoup  import requests  if \_\_name\_\_== '\_\_main\_\_':  headers = requests.utils.default\_headers()  url = ‘https://forecast.weather.gov’  req = requests.get(url, headers)  s = BeautifulSoup(req.content, 'html.parser')  ngay = s.find(id='seven-day-forecast')  dubao = ngay.find\_all(class\_='tombstone-container')  today = dubao[0]  img = today.find('img')  mota = img['title']  print(mota) |

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| **Lấy hostname và IP của máy** | **Lấy cookie một trang web** |
| import socket  if \_\_name\_\_ == "\_\_main\_\_":  hostname =socket.gethostname()  print("Host name = ", hostname)  IP = socket.gethostbyname(hostname)  print("IP = ", IP)  IP\_fb = socket.gethostbyname('facebook.com')  print("IP facebook = ", IP\_fb) | from http.cookiejar import CookieJar  from urllib.request import build\_opener, HTTPCookieProcessor  if \_\_name\_\_ == '\_\_main\_\_':  cookie\_jar = CookieJar()  opener = build\_opener(HTTPCookieProcessor(cookie\_jar))  kq = opener.open('http://www.facebook.com')  cookie = list(cookie\_jar)  print(cookie) |

**TCP: Tìm max/min 2 số theo yêu cầu Client**

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| **Server** | **Client** |
| import socket  host = '127.0.0.1'  port = 5050  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.bind((host, port))  sk.listen(5)  client\_sk, addr = sk.accept()  lenh = client\_sk.recv(1024).decode('utf-8')  so = client\_sk.recv(1024).decode('utf-8')    try:  a, b = so.split(' ')  if lenh == "Max":  res = max(a, b)  else:  res = min(a, b)  msg = str(res)  client\_sk.send(msg.encode('utf-8'))  except:  msg = "Lỗi!"  client\_sk.send(msg.encode('utf-8'))  sk.close() | import socket  host = '127.0.0.1'  port = 5050  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.connect((host, port))  msg = input("Nhập Max/Min: ")  sk.send(msg.encode('utf-8'))  msg = input("Nhập 2 số a b: ")  sk.send(msg.encode('utf-8'))  data = sk.recv(1024).decode('utf-8')  print("Server trả kết quả: " + data) |

**TCP/UDP: Đếm kí tự hoa**

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| **Server** | **Client** |
| import socket  host = 'localhost'  port = 5051  if \_\_name\_\_ == "\_\_main\_\_":  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.bind((host, port))  sk.listen(5)  client, addr = sk.accept()  print("Client address: ", addr)  while (True):  data = client.recv(1024).decode('utf-8')  print("Client: " + data)    if data == 'bye':  break    count = 0  for x in data:  if x.isupper():  count += 1  data = str(count)  client.send(data.encode('utf-8')) | import socket  host = 'localhost'  port = 5051  if \_\_name\_\_ == "\_\_main\_\_":  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.connect((host, port))    while True:  msg = input("Nhập chuỗi (nhập 'bye' de thoat): ")  sk.send(msg.encode('utf-8'))    if msg == 'bye':  break    data = sk.recv(1024)  print("Số kí tự in hoa: " + data.decode('utf-8'))  sk.close() |
| import socket  host = 'localhost'  port = 9050  if \_\_name\_\_ == "\_\_main\_\_":  sk = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)  sk.bind((host, port))  while True:  data, addr = sk.recvfrom(1024)  input\_data = data.decode('utf-8')    print("Client gui: " + input\_data)  if input\_data == "q":  break    count = 0  for x in input\_data:  if x.isupper():  count += 1  data = str(count)  sk.sendto(data.encode('utf-8'), addr) | import socket  host = 'localhost'  port = 9050  if \_\_name\_\_ == "\_\_main\_\_":  sk = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)  while True:  msg = input("Client (nhan q de thoat): ")  sk.sendto(msg.encode('utf-8'), (host, port))    if msg == "q":  break    data, addr = sk.recvfrom(1024)  print("Sever gui: " + data.decode('utf-8')) |

**TCP: Sinh Viên**

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| **Server** | **Client** |
| import socket  host = '127.0.0.1'  port =5051  sinhvien = {"1":"A", "2":"B", "3":"C"}  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.bind((host, port))  sk.listen(5)  client, addr = sk.accept()  client.send("Hello client".encode('utf-8'))  data = client.recv(1024).decode('utf-8')  print(data)  client.send("Nhập 1 để bắt đầu!".encode('utf-8'))  while True:  data = client.recv(1024).decode('utf-8')  if data == '1':  client.send("Nhập mã sinh viên! ".encode('utf-8'))  data = client.recv(1024).decode('utf-8')  try:  msg = sinhvien[data] + "!q"  client.send(msg.encode('utf-8'))  except:  client.send("Không có sinh viên nào!q".encode('utf-8'))  finally:  break  else:  client.send("Nhập 1 để bắt đầu! ".encode('utf-8')) | import socket  host = '127.0.0.1'  port =5051  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.connect((host, port))    sk.send("Hello server".encode('utf-8'))  data = sk.recv(1024).decode('utf-8')  print(data)    data = sk.recv(1024).decode('utf-8')  print(data)  while True:  msg = input()  sk.send(msg.encode('utf-8'))  data = sk.recv(1024).decode('utf-8')  s = data.split("!")  print(s[0])  if s[1] == 'q':  break |

**UDP: Sinh Viên**

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| import socket  host = '127.0.0.1'  port = 5051  sinhvien = {"1":"A", "2":"B", "3":"C"}  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)  sk.bind((host, port))  data, addr = sk.recvfrom(1024)  data = data.decode('utf-8')  print("Client gửi: " + data)    msg = "Hello client!"  sk.sendto(msg.encode('utf-8'), addr)  msg = "Nhập 1 để bắt đầu!"  sk.sendto(msg.encode('utf-8'), addr)    while True:  data, addr = sk.recvfrom(1024)  data = data.decode('utf-8')  if data == '1':  msg = "Nhập mã sinh viên!"  sk.sendto(msg.encode('utf-8'), addr)  data, addr = sk.recvfrom(1024)  data = data.decode('utf-8')  try:  msg = sinhvien[data] + "!q"  sk.sendto(msg.encode('utf-8'), addr)  except:  msg ="Không có sinh viên!q"  sk.sendto(msg.encode('utf-8'), addr)  break  else:  msg = "Nhập 1 để bắt đầu!"  sk.sendto(msg.encode('utf-8'), addr) | import socket  host = '127.0.0.1'  port = 5051  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)  msg = "Hello server!"  sk.sendto(msg.encode('utf-8'), (host, port))  data, addr = sk.recvfrom(1024)  data = data.decode('utf-8')  print("Server gửi: " + data)  data, addr = sk.recvfrom(1024)  data = data.decode('utf-8')  print("Server gửi: " + data)  while True:  msg = input()  sk.sendto(msg.encode('utf-8'), (host, port))  data, addr = sk.recvfrom(1024)  data = data.decode('utf-8')  s = data.split("!")  print("Server gửi: " + s[0])  if s[1] == 'q':  break |

**TCP: Cộng trừ**

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| **Server** | **Client** |
| import socket  host = 'localhost'  port = 5050  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.bind((host,port))  sk.listen(5)    client, addr = sk.accept()  print('Client address: ', addr)    data = client.recv(1024)  print('Client: %s' % data.decode('utf-8'))    client.send('1.Cong 2.Tru'.encode('utf-8'))    data = client.recv(1024).decode('utf-8')  opt,a,b,c = data.split(' ')  if(opt == '1'):  client.send(str(int(a) + int(b) + int(c)).encode('utf-8'))  elif(opt == '2'):  client.send(str(int(a) - int(b) - int(c)).encode('utf-8'))  else:  client.send('Nhap sai dinh dang'.encode('utf-8'))    sk.close() | import socket  host = 'localhost'  port = 5050  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  while True:  r = input("Nhập 'r' để connect: ")  if(r == 'r'):  break  sk.connect((host, port))  sk.send('Hello server'.encode('utf-8'))    data = sk.recv(1024)  print('Data from server: %s' % data.decode('utf-8'))    data = input('Nhap opt, a, b, c: ')  sk.send(data.encode('utf-8'))    data = sk.recv(1024)  print('Gia tri tra ve: %s' % data.decode('utf-8'))    sk.close() |

**UDP: Cộng Trừ**

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| **Server** | **Client** |
| if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)  sk.bind((host, port))  print("Chờ client kết nối!")    data, addr = sk.recvfrom(1024)  print("Client: ", data.decode('utf-8'))  sk.sendto('1.Cong 2.Tru'.encode('utf-8'), addr)    data, addr = sk.recvfrom(1024)  s = data.decode('utf-8').split(' ')    if int(s[0]) == 1:  msg = int(s[1]) + int(s[2]) + int(s[3])  elif int(s[0]) == 2:  msg = int(s[1]) - int(s[2]) - int(s[3])  else:  msg = 'Nhap sai dinh dang'  data = str(msg)  sk.sendto(data.encode('utf-8'), addr) | if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_DGRAM)  while True:  r = input("Nhập 'r' để connect: ")  if(r == 'r'):  break  sk.sendto('Hello server: '.encode('utf-8'), (host,port))    data, addr = sk.recvfrom(1024)  print("Data from server: " + data.decode('utf-8'))    data = input("Nhập opt, a, b, c: ")  sk.sendto(data.encode('utf-8'), (host, port))    data, addr = sk.recvfrom(1024)  print('Result: ', data.decode('utf8')) |

**TCP: Chuẩn hóa**

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| **Server** | **Client** |
| import socket  host = 'localhost'  port = 5051  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.bind((host, port))  sk.listen(5)  client, addr = sk.accept()    data = client.recv(1024).decode('utf-8')  data = data.strip().lower()    res = ""  check = 0    for i in data:  if i == ".":  res += i  check = 1  elif check == 1:  res+= i.upper()  check = 0  else:  res+= i  client.send(res.encode('utf-8')) | import socket  host = 'localhost'  port = 5051  if \_\_name\_\_ == '\_\_main\_\_':  sk = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM, 0)  sk.connect((host,port))    data = input('Nhap chuoi: ')  sk.send(data.encode('utf-8'))    data = sk.recv(1024)  print('Chuoi da chuan hoa la: ', data.decode('utf-8')) |

**UDP: Chuẩn hóa**