

# 152120211104\_Doğukan\_Kıyıklı k.docx

*Yazar* Doğukan Kıyıklık

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**Laboratuvar Raporu #1**  
**Eskişehir Osmangazi Üniversitesi**  
**Bilgisayar Ağları**  
**(152116027)**

**Doğukan Kıyıklık**  
**152120211104**

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**2024-2025**

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## 2 Giriş

Bu laboratuvarıda, internet üzerindeki web tarayıcıları ve sunucular arasındaki veri alışverişinin nasıl gerçekleştiğini anlamak için, Wireshark uygulaması ile HTTP istek ve yanıtlarını inceledim. Laboratuvar kapsamında belirlenen sorulara verdiğim yanıtları, Wireshark uygulamasından elde edilen ekran görüntüleriyle destekledim.

## 3 Laboratuvar Uygulaması

### 3.1 The Basic HTTP GET/response interaction

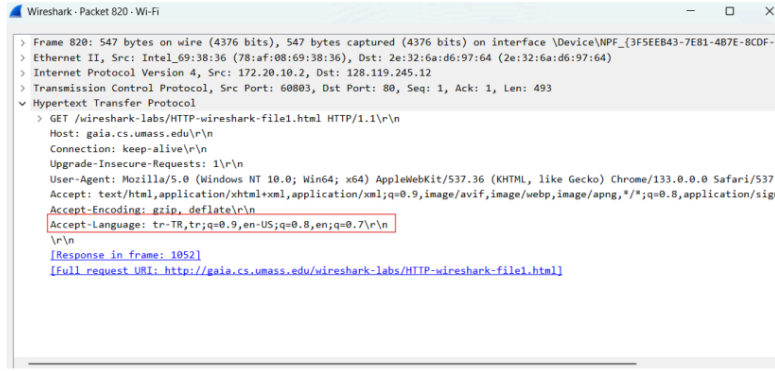
#### 3.1.1 1. Soru

Cevap: Tarayıcım HTTP 1.1 versiyonunu kullanmaktadır. Aşağıdaki ekran görüntüsünden de gözlemlenebilir.

|      |           |                |                |      |     |  |
|------|-----------|----------------|----------------|------|-----|--|
| 820  | 14.893715 | 172.20.10.2    | 128.119.245.12 | HTTP | 547 | GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1 |
| 1052 | 15.189316 | 128.119.245.12 | 172.20.10.2    | HTTP | 546 | HTTP/1.1 200 OK (text/html)                            |
| 1104 | 15.230882 | 172.20.10.2    | 128.119.245.12 | HTTP | 493 | GET /favicon.ico HTTP/1.1                              |
| 1105 | 15.422369 | 128.119.245.12 | 172.20.10.2    | HTTP | 538 | HTTP/1.1 404 Not Found (text/html)                     |

#### 3.1.2 2. Soru

Cevap: Kabul edilen diller Türkçe ve İngilizce'dir.



#### 3.1.3 3. Soru

Cevap: Benim IP adresim = 172.20.10.2; Hedef sitenin IP adresi = 128.119.245.12

| No. | Time      | Source      | Destination    | Protocol | Length | Info   |
|-----|-----------|-------------|----------------|----------|--------|--|
| 820 | 14.893715 | 172.20.10.2 | 128.119.245.12 | HTTP     | 547    | GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1 |

### 3.1.4 4. Soru

Cevap: 200 OK mesajı döndürülmüştür.

|      |           |                |                |      |     |  |
|------|-----------|----------------|----------------|------|-----|--|
| 820  | 14.893715 | 172.20.10.2    | 128.119.245.12 | HTTP | 547 | GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.1 |
| 1052 | 15.189316 | 128.119.245.12 | 172.20.10.2    | HTTP | 540 | HTTP/1.1 200 OK (text/html)                            |
| 1104 | 15.230882 | 172.20.10.2    | 128.119.245.12 | HTTP | 493 | GET /favicon.ico HTTP/1.1                              |
| 1105 | 15.422369 | 128.119.245.12 | 172.20.10.2    | HTTP | 538 | HTTP/1.1 404 Not Found (text/html)                     |

### 3.1.5 5. Soru

Cevap: Last Modified bilgisi aşağıdaki ekran görüntüsünde yer almaktadır.

```
Wireshark - Packet 1052 - Wi-Fi
> Frame 1052: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{3F5EEB43-7E81-487E-8C1...}
> Ethernet II, Src: 2e:32:6a:d6:97:64 (2e:32:6a:d6:97:64), Dst: Intel_69:38:36 (78:af:08:69:38:36)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 172.20.10.2
> Transmission Control Protocol, Src Port: 80, Dst Port: 60803, Seq: 1, Ack: 494, Len: 486
> Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Date: Sat, 01 Mar 2025 17:10:09 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Sat, 01 Mar 2025 06:59:01 GMT\r\n
    ETag: "80-62f42753ad25e"\r\n
    Accept-Ranges: bytes\r\n
  > Content-Length: 128\r\n
    Keep-Alive: timeout=5, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=UTF-8\r\n
  \r\n
  [Request in frame: 820]
  [Time since request: 0.295601000 seconds]
  [Request URI: /wireshark-labs/HTTP-wireshark-file1.html]
  [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
  File Data: 128 bytes
```

### 3.1.6 6. Soru

Cevap: İçerik uzunluğu 128 byte'dır.

```
Wireshark - Packet 1052 - Wi-Fi
> Frame 1052: 540 bytes on wire (4320 bits), 540 bytes captured (4320 bits) on interface \Device\NPF_{3F5EEB43-7E81-487E-8C1...}
> Ethernet II, Src: 2e:32:6a:d6:97:64 (2e:32:6a:d6:97:64), Dst: Intel_69:38:36 (78:af:08:69:38:36)
> Internet Protocol Version 4, Src: 128.119.245.12, Dst: 172.20.10.2
> Transmission Control Protocol, Src Port: 80, Dst Port: 60803, Seq: 1, Ack: 494, Len: 486
> Hypertext Transfer Protocol
  > HTTP/1.1 200 OK\r\n
    Date: Sat, 01 Mar 2025 17:10:09 GMT\r\n
    Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.33 mod_perl/2.0.11 Perl/v5.16.3\r\n
    Last-Modified: Sat, 01 Mar 2025 06:59:01 GMT\r\n
    ETag: "80-62f42753ad25e"\r\n
    Accept-Ranges: bytes\r\n
  > Content-Length: 128\r\n
    [Content length: 128]
    Keep-Alive: timeout=5, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=UTF-8\r\n
  \r\n
  [Request in frame: 820]
  [Time since request: 0.295601000 seconds]
  [Request URI: /wireshark-labs/HTTP-wireshark-file1.html]
  [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html]
```

### 3.1.7 7. Soru

Cevap: Başlıklar ve raw data kısmı karşılaştırıldığında bulunmayan herhangi bir başlık görülmektedir.

|    |   |      |                         |                            |     |     |
|----|---|------|-------------------------|----------------------------|-----|-----|
| 1  | Frame 818: 547 bytes on wire (4376 bits), 547 bytes captured (4376 bits) on interface \Device\NPF...                                | 0000 | 2a 32 6a 46 37 6a 76 af | 88 69 38 3a 88 80 a1 80    | ... | ... |
| 2  | Ethernet II, Src: Intel_82:3d:3b:3c, Dst: 08:00:27:00:00:00 (08:00:27:00:00:00)   | 0010 | 02 15 5e f7 40 80 80 80 | 80 80 14 5e 02 15          | ... | ... |
| 3  | Internet Protocol Version 4, Src: 172.20.10.2, Dst: 128.119.245.12  | 0020 | 45 28 2f 77 69 7a 65 73 | ...                        | ... | ... |
| 4  | Transmission Control Protocol, Src Port: 8080, Dst Port: 80, Seq: 1, Ack: 403, Len: 403   | 0030 | 68 61 72 68 2d 6c 61 62 | 73 2f 40 54 5a 50 2d 77    | ... | ... |
| 5  | Hypertext Transfer Protocol   | 0040 | 69 72 69 71 68 61 71 68 | 2d 6c 69 6c 65 7a 68       | ... | ... |
| 6  | GET /wirehark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n   | 0050 | 7a 6d 6c 20 48 54 54 58 | 2f 31 2a 31 80 8a 48 6f    | ... | ... |
| 7  | Host: gaia.cs.umass.edu\r\n   | 0060 | 71 7a 3a 20 67 61 69 61 | 2a 69 71 2a 79 6a 61 73    | ... | ... |
| 8  | Connection: keep-alive\r\n  | 0070 | 71 2a 65 6a 75 80 8a 43 | 6f 6a 6a 65 63 7a 69 6f    | ... | ... |
| 9  | Upgrade-Insecure-Requests: 1\r\n  | 0080 | 6a 3a 20 67 61 69 61    | 61 6a 69 71 2a 79 6a 61 73 | ... | ... |
| 10 | User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/79.0.4046.128 Safari/537.36\r\n | 0090 | 79 67 72 61 64 65 2d 45 | 6a 79 69 61 72 72 65 2d    | ... | ... |
| 11 | Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8\r\n                        | 0100 | 6a 3a 20 67 61 69 61    | 61 6a 69 71 2a 79 6a 61 73 | ... | ... |
| 12 | Accept-Encoding: gzip, deflate\r\n  | 0110 | 52 65 71 75 65 73 74 73 | 3a 20 31 80 8a 55 73 65    | ... | ... |
| 13 | Accept-Language: tr-tr;q=0.9,en-US;q=0.8,en-GB;q=0.7\r\n  | 0120 | 72 61 64 65 2d 45       | 6a 79 69 61 72 72 65 2d    | ... | ... |
| 14 | \r\n  | 0130 | 2f 35 3a 30 30 38 57 69 | 6a 6a 6f 77 73 20 4a 54    | ... | ... |
| 15 | [Response in frame 3852]  | 0140 | 2f 31 2a 31 80 8a 55    | 6a 6a 6f 77 73 20 4a 54    | ... | ... |
| 16 | [Full request URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]   | 0150 | 34 29 20 41 70 70 6c 65 | 57 65 62 40 69 7a 2f 35    | ... | ... |

### 3.2 The HTTP CONDITIONAL GET/response interaction

#### 3.2.1 8. Soru

Cevap: Aşağıdaki ekran görüntüsüne bakılırsa “IF-MODIFIED-SINCE” satırı gözükmemektedir.


|                                 |   |
|---------------------------------|---|
| Wireshark - Packet 1664 - Wi-Fi |   |
| 1                               | Frame 1664: 561 bytes on wire (4488 bits), 561 bytes captured (4488 bits) on interface \Device\NPF_{3F5EEB43-7E81-4B7E-BCDF-...}                    |
| 2                               | Ethernet II, Src: Intel_69:38:36 (78:af:08:69:38:36), Dst: 2e:32:6a:d6:97:64 (2e:32:6a:d6:97:64)  |
| 3                               | Internet Protocol Version 4, Src: 172.20.10.2, Dst: 128.119.245.12  |
| 4                               | Transmission Control Protocol, Src Port: 61287, Dst Port: 80, Seq: 1, Ack: 1, Len: 507  |
| 5                               | Hypertext Transfer Protocol   |
| 6                               | GET /wirehark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n   |
| 7                               | Host: gaia.cs.umass.edu\r\n   |
| 8                               | Connection: keep-alive\r\n  |
| 9                               | Upgrade-Insecure-Requests: 1\r\n  |
| 10                              | User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.36\r\n                     |
| 11                              | Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n |
| 12                              | Accept-Encoding: gzip, deflate\r\n  |
| 13                              | Accept-Language: tr-tr;q=0.9,en-US;q=0.8,en-GB;q=0.7\r\n  |
| 14                              | \r\n  |
| 15                              | [Response in frame 3712]  |
| 16                              | [Full request URL: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]   |

#### 3.2.2 9. Soru

Cevap: Aşağıdaki ekran görüntülerinde sitenin mesajını ve Wireshark'da yakaladığım paketteki bilgileri karşılaştırsak içeriğin olduğu gibi dödürüldüğünü görürüz.

Congratulations again! Now you've downloaded the file lab2-2.html.  
This file's last modification date will not change.

Thus if you download this multiple times on your browser, a complete copy  
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE  
field in your browser's HTTP GET request to the server.

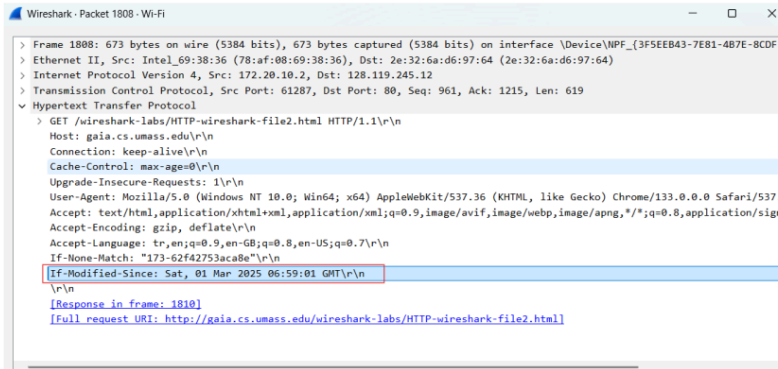


Wireshark - Packet 1712 - Wi-Fi

```
Accept-Ranges: bytes\r\n
> Content-Length: 371\r\n
Keep-Alive: timeout=5, max=100\r\n
Connection: Keep-Alive\r\n
Content-Type: text/html; charset=UTF-8\r\n
\r\n
[Request in frame: 1664]
[Time since request: 0.176991000 seconds]
[Request URI: /wireshark-labs/HTTP-wireshark-file2.html]
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
File Data: 371 bytes
Line-based text data: text/html (10 lines)
\r\n
<html>\r\n
\r\n
Congratulations again! Now you've downloaded the file lab2-2.html. <br>\r\n
This file's last modification date will not change. <p>\r\n
Thus if you download this multiple times on your browser, a complete copy <br>\r\n
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>\r\n
field in your browser's HTTP GET request to the server.\r\n
\r\n
```

### 3.2.3 10. Soru

Cevap: Evet bu başlık gözükmektedir. İçeriğinde ise Last Modified bilgisi yer almaktadır.



Wireshark - Packet 1808 - Wi-Fi

```
> Frame 1808: 673 bytes on wire (5384 bits), 673 bytes captured (5384 bits) on interface \Device\NPF_{3F5EEB43-7EB1-4B7E-8CDF}
> Ethernet II, Src: Intel_69:38:36 (78:af:08:69:38:36), Dst: 2e:32:6a:d6:97:64 (2e:32:6a:d6:97:64)
> Internet Protocol Version 4, Src: 172.20.10.2, Dst: 128.119.245.12
> Transmission Control Protocol, Src Port: 61287, Dst Port: 80, Seq: 961, Ack: 1215, Len: 619
Hypertext Transfer Protocol
> GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
Host: gaia.cs.umass.edu\r\n
Connection: keep-alive\r\n
Cache-Control: max-age=0\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/133.0.0.0 Safari/537.
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n
Accept-Encoding: gzip, deflate\r\n
Accept-Language: tr,en;q=0.9,en-GB;q=0.8,en-US;q=0.7\r\n
If-None-Match: "173-62f42753aca8e"\r\n
\r\n
[Response in frame: 1810]
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
```

### 3.2.4 11. Soru

Cevap: 304 Not Modified kodu döndürülmüştür. Siteyi daha önceden öbelleğe kaydettiği için ve site içeriğinde herhangi bir değişiklik olmadığından tekrardan döndürmedi.

|      |           |                |             |      |              |                  |
|------|-----------|----------------|-------------|------|--------------|------------------|
| 1810 | 21.745240 | 128.119.245.12 | 172.20.10.2 | HTTP | 293 HTTP/1.1 | 304 Not Modified |
|------|-----------|----------------|-------------|------|--------------|------------------|

## 3.3 Retrieving Long Documents

### 3.3.1 12. Soru

Cevap: 2 adet GET isteği gönderilmiştir. Bunlardan 2049 numaralı olanı “Bill of Rights” için gönderilmiştir.

|      |           |                |                |      |  |
|------|-----------|----------------|----------------|------|--|
| 2049 | 11.076660 | 172.20.10.2    | 128.119.245.12 | HTTP | 561 GET /wireshark-labs/HTTP-wireshark-file3.html HTTP/1.1 |
| 2079 | 11.249788 | 128.119.245.12 | 172.20.10.2    | HTTP | 685 HTTP/1.1 200 OK (text/html)                            |
| 2098 | 11.283047 | 172.20.10.2    | 128.119.245.12 | HTTP | 507 GET /favicon.ico HTTP/1.1                              |
| 2121 | 11.435958 | 128.119.245.12 | 172.20.10.2    | HTTP | 538 HTTP/1.1 404 Not Found (text/html)                     |

### 3.3.2 13. Soru

Cevap: 2079 numaralı pakette yer almaktadır.

|      |           |                |             |      |                                 |
|------|-----------|----------------|-------------|------|---------------------------------|
| 2079 | 11.249788 | 128.119.245.12 | 172.20.10.2 | HTTP | 685 HTTP/1.1 200 OK (text/html) |
|------|-----------|----------------|-------------|------|---------------------------------|

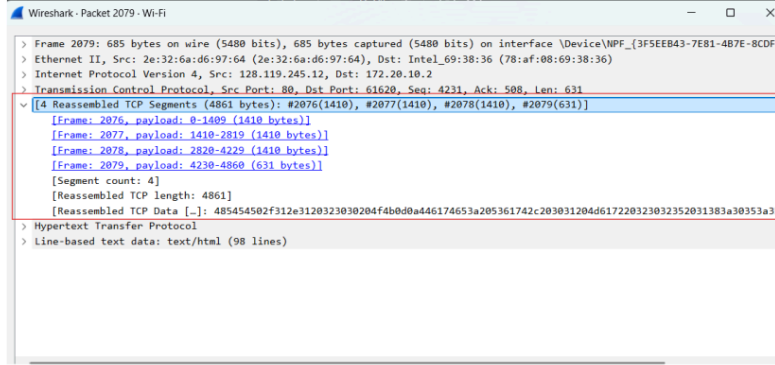
### 3.3.3 14. Soru

Cevap: Durum kodu 200 ve ifadesi OK'dir

|      |           |                |             |      |                                 |
|------|-----------|----------------|-------------|------|---------------------------------|
| 2079 | 11.249788 | 128.119.245.12 | 172.20.10.2 | HTTP | 685 HTTP/1.1 200 OK (text/html) |
|------|-----------|----------------|-------------|------|---------------------------------|

### 3.3.4 15. Soru

Cevap: 4 adet segment kullanılmıştır. Aşağıdaki ekran görüntüsünde bu segmentler görülmektedir.





### 3.4.1 16. Soru

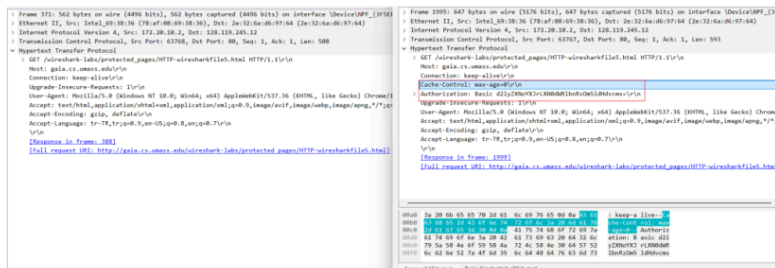
### 3.4.2 17. Soru

|     |          |                |                 |      |  |
|-----|----------|----------------|-----------------|------|--|
| 230 | 8.51045  | 128.119.245.10 | 128.119.245.12  | HTTP | 561 GET /wirehacker-labs/HTTP-wirehacker-file4.html HTTP/1.1 |
| 231 | 8.914594 | 128.119.245.12 | 128.119.245.12  | HTTP | 1355 HTTP/1.1 200 OK (text/html)                             |
| 240 | 8.029589 | 128.119.245.12 | 128.119.245.12  | HTTP | 507 GET /person.png HTTP/1.1                                 |
| 269 | 19.92492 | 128.119.245.12 | 128.119.245.12  | HTTP | 845 HTTP/1.1 200 OK (PNG)                                    |
| 275 | 5.00446  | 128.119.245.12 | 128.119.137.164 | HTTP | 474 GET /BE cover small.jpg HTTP/1.1                         |
| 281 | 5.602453 | 178.79.137.164 | 128.119.245.12  | HTTP | 225 HTTP/1.1 301 Moved Permanently                           |
| 736 | 6.604076 | 128.119.245.12 | 128.119.245.12  | HTTP | 507 GET /favicon.ico HTTP/1.1                                |
| 732 | 6.784035 | 128.119.245.12 | 128.119.245.12  | HTTP | 538 HTTP/1.1 404 Not Found (text/html)                       |

### 3.5.1 18. Soru

|     |          |                |             |      |     |                                       |
|-----|----------|----------------|-------------|------|-----|---------------------------------------|
| 388 | 9.583004 | 128.119.245.12 | 172.20.10.2 | HTTP | 771 | HTTP/1.1 401 Unauthorized (text/html) |
|-----|----------|----------------|-------------|------|-----|---------------------------------------|

Cevap: Cache Control ve Authorization başlıkları ilk GET isteğinde yok iken, ikinci GET isteğinde görülmektedir.



#### 4 Kaynakça

ORJİNALLİK RAPORU

%37

BENZERLİK ENDEKSİ

EN

%5

İNTERNET KAYNAKLARI

%0

YAYINLAR

%37

ÖĞRENCİ ÖDEVLERİ

BİRİNCİL KAYNAKLAR

1

Submitted to Eskisehir Osmangazi University

Öğrenci Ödevi

%26

2

Submitted to University of Sydney

Öğrenci Ödevi

%11

Alıntıları çıkart

Kapat

Exclude assignment  
template

üzerinde

Bibliyografyayı Çıkart

Kapat

Eşleşmeleri çıkar

Kapat