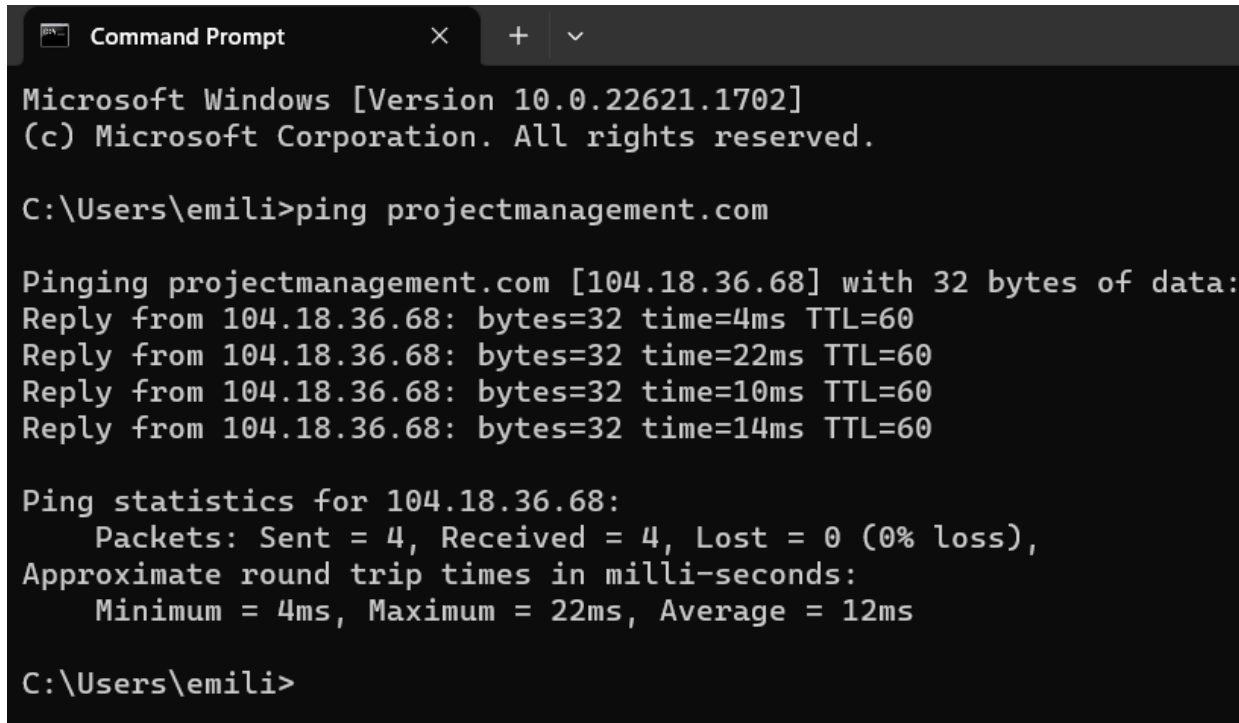


Exercise: Networks, Internet and Protocols

Problems for exercises and homework for the ["Software Technologies" course @ Software University.](#)

1. Trace the route to a certain IP address

1. Use the ping command to test connectivity to an external website of your choosing /Example: wikipedia.com/
2. Add a screenshot of the result here:



```
Microsoft Windows [Version 10.0.22621.1702]
(c) Microsoft Corporation. All rights reserved.

C:\Users\emili>ping projectmanagement.com

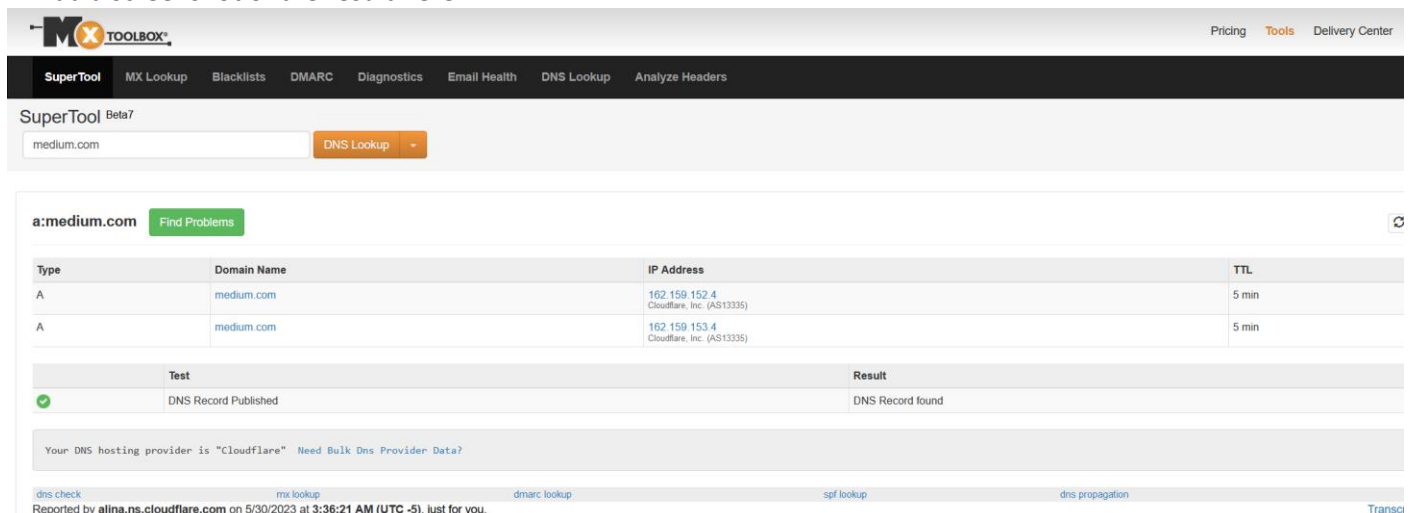
Pinging projectmanagement.com [104.18.36.68] with 32 bytes of data:
Reply from 104.18.36.68: bytes=32 time=4ms TTL=60
Reply from 104.18.36.68: bytes=32 time=22ms TTL=60
Reply from 104.18.36.68: bytes=32 time=10ms TTL=60
Reply from 104.18.36.68: bytes=32 time=14ms TTL=60

Ping statistics for 104.18.36.68:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 22ms, Average = 12ms

C:\Users\emili>
```

2. Find the IP address behind a domain name

1. Using an online DNS lookup tool, like **DNS Checker** or **MX Toolbox** find the IP address of a domain. /Example: medium.com/
2. Add a screenshot of the result here:



The screenshot shows the MX Toolbox website interface. At the top, there's a navigation bar with 'Pricing', 'Tools', and 'Delivery Center'. Below that, a 'SuperTool Beta7' section has a search bar with 'medium.com' and a 'DNS Lookup' button. The main content area displays the results for 'a:medium.com'. It includes a table with DNS records and a section for DNS tests.

Type	Domain Name	IP Address	TTL
A	medium.com	162.159.152.4 Cloudflare, Inc. (AS13335)	5 min
A	medium.com	162.159.153.4 Cloudflare, Inc. (AS13335)	5 min

Test	Result
DNS Record Published	DNS Record found

Your DNS hosting provider is "Cloudflare" [Need Bulk Dns Provider Data?](#)

Reported by alina.ns.cloudflare.com on 5/30/2023 at 3:36:21 AM (UTC -5), just for you.

3. Execute HTTP GET

1. Using <https://restcountries.com/> and DevTools on your browser. Execute a GET request for a country of your choosing. /Example: <https://restcountries.com/v3.1/name/deutschland/>
2. Add a screenshot of the result with DevTools open here:

The screenshot shows a web browser at the URL restcountries.com/v3.1/name/spain. The page displays a large JSON object representing the country of Spain. The DevTools network tab is open, showing a successful GET request to the same URL. The response status is 200 OK, and the response headers and request headers are visible.

JSON Response (Spain):

```
{
  "name": {
    "common": "Spain",
    "official": "Kingdom of Spain",
    "nativeName": {
      "spa": {
        "official": "Reino de Espa\u00f1a",
        "common": "Espa\u00f1a"
      }
    },
    "id": "EUR"
  },
  "cca2": "ES",
  "ccn3": "724",
  "cca3": "ESP",
  "cioc": "ESP",
  "independent": true,
  "status": "officially-assigned",
  "unMember": true,
  "currencies": {
    "EUR": {
      "name": "Euro",
      "symbol": "\u20ac"
    }
  },
  "id": {
    "root": "43",
    "suffixes": [
      "4"
    ]
  },
  "capital": [
    "Madrid"
  ],
  "altSpellings": [
    "ES",
    "Kingdom of Spain",
    "Reino de Espa\u00f1a",
    "region": "Europe",
    "subregion": "Southern Europe",
    "languages": {
      "spa": "Spanish",
      "translations": {
        "ara": {
          "official": "\u0627\u0644\u0645\u0645\u0644\u0643\u0629 \u0627\u0644\u0625\u0633\u0628\u0627\u0646\u064a\u0629",
          "common": "\u0627\u0633\u0628\u0627\u0646\u064a",
          "bre": {
            "official": "Rouantelezh Spagn",
            "common": "Spagn"
          },
          "ces": {
            "official": "Span\u0159sk\u00e9 kr\u00e1lovstv\u00ed",
            "common": "Span\u0159sko"
          },
          "cym": {
            "official": "Ffrwdiaeth yr Eidal",
            "common": "Ffrwdiaeth"
          },
          "deu": {
            "official": "K\u00f6nigreich Spanien",
            "common": "Spanien",
            "est": {
              "official": "Hispaania Kuningriik",
              "common": "Hispaania"
            },
            "fin": {
              "official": "Espanjan kuningaskunta",
              "common": "Espanja"
            },
            "fra": {
              "official": "Royaume d'Espagne",
              "common": "Espagne",
              "hrv": {
                "official": "Kraljevina \u0160panjolska",
                "common": "Spanjolska"
            },
            "hun": {
              "official": "Spanyol Kir\u00e1lys\u00e1g",
              "common": "Spanyolorsz\u00e1g"
            },
            "ita": {
              "official": "Regno di Spagna",
              "common": "Spagna"
            },
            "jpn": {
              "official": "\u30b9\u30a4\u30c8\u30a4\u30b9",
              "common": "\u30b9\u30a4\u30c8\u30a4\u30b9"
            },
            "kor": {
              "official": "\uc6b4\uc77c \uc6b4\uac04",
              "common": "\uc6b4\uc77c \uc6b4\uac04"
            },
            "nld": {
              "official": "Koninkrijk Spanje",
              "common": "Spanje"
            },
            "per": {
              "official": "Pادشاهي اسپانيا",
              "common": "اسپانيا"
            },
            "pol": {
              "official": "Kr\u00f3lestwo Hiszpanii",
              "common": "Hiszpania"
            },
            "por": {
              "official": "Reino de Espanha",
              "common": "Espanha"
            },
            "rus": {
              "official": "\u041a\u043e\u0440\u043e\u043b\u0435\u0432\u0441\u0442\u0432\u043e \u0418\u0441\u043f\u0430\u043d\u0438\u0438",
              "common": "\u0418\u0441\u043f\u0430\u043d\u0438\u044f"
            },
            "slk": {
              "official": "Spanielske kr\u00e1ľovstvo",
              "common": "Spanielsko"
            },
            "spa": {
              "official": "Reino de Espa\u00f1a",
              "common": "Espa\u00f1a"
            },
            "srp": {
              "official": "\u041a\u0440\u0430\u043b\u0435\u0432\u0438\u043d\u0430 \u0418\u0441\u043f\u0430\u043d\u0438\u044f",
              "common": "\u0418\u0441\u043f\u0430\u043d\u0438\u044f"
            },
            "swe": {
              "official": "Konungariket Spanien",
              "common": "Spanien"
            },
            "tur": {
              "official": "Ispanya Krall\u0131\u0131",
              "common": "Ispanya"
            },
            "und": {
              "official": "\u0627\u0644\u0645\u0645\u0644\u0643\u0629 \u0627\u0644\u0625\u0633\u0628\u0627\u0646\u064a\u0629",
              "common": "\u0627\u0633\u0628\u0627\u0646\u064a"
            },
            "zho": {
              "official": "\u897f\u738b\u56fd",
              "common": "\u897f\u738b\u56fd"
            },
            "lat": {
              "official": "Regnum Hispaniae",
              "common": "Hispania"
            }
          }
        }
      }
    }
  },
  "landlocked": false,
  "borders": [
    "AND",
    "FRA",
    "GIB",
    "MAR",
    "MEX"
  ],
  "area": 505992.8,
  "demonym": {
    "eng": {
      "f": "Spanish",
      "m": "Spanish"
    }
  },
  "flag": "\ud83c\uddef\ud83c\udfc4",
  "maps": {
    "googleMaps": "https://goo.gl/maps/38t3XW8ZcRv1Y9",
    "openStreetMaps": "https://www.openstreetmap.org/relation/1311341",
    "population": 47351567,
    "gini": {
      "2018": 34.7
    },
    "flag": {
      "img": "https://flagcdn.com/v320/es.png",
      "svg": "https://flagcdn.com/es.svg",
      "alt": "The flag of Spain is composed of three horizontal bands of red, yellow and red, with the yellow band twice the height of the red bands. In the yellow band is the national coat of arms offset slightly towards the hoist side of center."
    },
    "img": "https://mainfacts.com/media/images/coats_of_arms/es.png",
    "svg": "https://mainfacts.com/media/images/coats_of_arms/es.svg",
    "startOfWeek": "monday",
    "capitalInfo": {
      "latlng": [
        40.4,
        -3.68
      ],
      "postalCode": {
        "format": "#####",
        "regex": "^(\\d{5})$"
      }
    }
  }
}
```

Network Request Details:

- Name: `spain`
- Request URL: `https://restcountries.com/v3.1/name/spain`
- Request Method: `GET`
- Status Code: `200 OK`
- Remote Address: `161.35.252.68:443`
- Referrer Policy: `strict-origin-when-cross-origin`
- Response Headers: `Cache-Control: public, immutable, max-age=31556926; Connection: Keep-Alive; Content-Encoding: gzip; Content-Length: 1523; Content-Type: application/json; Date: Tue, 30 May 2023 08:38:39 GMT; Keep-Alive: timeout=5, max=100; Server: Apache/2.4.38 (Debian)`
- Request Headers: `Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/svg+xml;q=0.8,application/signed-exchange;v=b3;q=0.7; Accept-Encoding: gzip, deflate, br; Accept-Language: en-US,en;q=0.9,hg-8Gq=0.8,bgq=0.7,es-ES;q=0.6,es;q=0.5; Cache-Control: max-age=0; Connection: keep-alive; Dnt: 1; Host: restcountries.com; Sec-Ch-Ua: "Google Chrome";v=113,"Chromium";v=113,"Not-A.Brand";v=24; Sec-Ch-Ua-Platform: "Windows"; Sec-Fetch-Dest: document; Sec-Fetch-Mode: navigate; Sec-Fetch-Site: none; Sec-Fetch-User: ?1; Sec-Idc: 1; Upgrade-Insecure-Requests: 1; User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/113.0.0.0 Safari/537.36`