

ipaddress.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # ipaddress.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import socket
10:
11: #-----
12:
13: def main():
14:
15:     if len(sys.argv) != 2:
16:         print(f'usage: python {sys.argv[0]} domainname',
17:               file=sys.stderr)
18:         sys.exit(1)
19:
20:     domain_name = sys.argv[1]
21:
22:     try:
23:         host_name, aliases, ip_addresses = (
24:             socket.gethostbyname_ex(domain_name))
25:         print('Host name:', host_name)
26:         for alias in aliases:
27:             print('Alias:', alias)
28:         for ip_address in ip_addresses:
29:             print('IP address:', ip_address)
30:
31:     except Exception as ex:
32:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
33:         sys.exit(1)
34:
35: #-----
36:
37: if __name__ == '__main__':
38:     main()

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daytime/daytimeclient.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # daytimeclient.py
5: # Author: Bob Dondero
6: #-----
7: # Try this:
8: # daytimeclient.py time-a.nist.gov 13
9: #-----
10:
11: import sys
12: import socket
13:
14: #-----
15:
16: def main():
17:
18:     if len(sys.argv) != 3:
19:         print(f'usage: python {sys.argv[0]} host port', file=sys.stderr)
20:         sys.exit(1)
21:
22:     try:
23:         host = sys.argv[1]
24:         port = int(sys.argv[2])
25:
26:         with socket.socket() as sock:
27:             sock.connect((host, port))
28:             with sock.makefile(mode='r', encoding='ascii') as flo:
29:                 for line in flo:
30:                     print(line, end='')
31:
32:     except Exception as ex:
33:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
34:         sys.exit(1)
35:
36: #-----
37:
38: if __name__ == '__main__':
39:     main()

```

daytime/daytimeserver.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # daytimeserver.py
5: # Author: Bob Dondero
6: #-----
7:
8: import os
9: import sys
10: import socket
11: import time
12:
13: #-----
14:
15: def handle_client(sock):
16:
17:     datetime = time.asctime(time.localtime())
18:     with sock.makefile(mode='w', encoding='ascii') as flo:
19:         flo.write(datetime + '\n')
20:         #flo.flush()
21:
22: #-----
23:
24: def main():
25:
26:     if len(sys.argv) != 2:
27:         print(f'usage: python {sys.argv[0]} port', file=sys.stderr)
28:         sys.exit(1)
29:
30:     try:
31:         port = int(sys.argv[1])
32:
33:         server_sock = socket.socket()
34:         print('Opened server socket')
35:         if os.name != 'nt':
36:             server_sock.setsockopt(
37:                 socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
38:         server_sock.bind(('', port))
39:         print('Bound server socket to port')
40:         server_sock.listen()
41:         print('Listening')
42:
43:         while True:
44:             try:
45:                 sock, client_addr = server_sock.accept()
46:                 with sock:
47:                     print('Accepted connection')
48:                     print('Opened socket')
49:                     print('Server IP addr and port:',
50:                         sock.getsockname())
51:                     print('Client IP addr and port:', client_addr)
52:                     handle_client(sock)
53:             except Exception as ex:
54:                 print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
55:
56:     except Exception as ex:
57:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
58:         sys.exit(1)
59:
60: #-----
61:
62: if __name__ == '__main__':
63:     main()

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echo/echoclient.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # echoclient.py
5: # Author: Bob Dondero
6: #-----
7:
8: import sys
9: import socket
10:
11: #-----
12:
13: def main():
14:
15:     if len(sys.argv) != 3:
16:         print(f'usage: python {sys.argv[0]} host port', file=sys.stderr)
17:         sys.exit(1)
18:
19:     try:
20:         host = sys.argv[1]
21:         port = int(sys.argv[2])
22:
23:         line = input()
24:
25:         with socket.socket() as sock:
26:             sock.connect((host, port))
27:
28:             with sock.makefile(mode='w', encoding='utf-8') as out_flo:
29:                 out_flo.write(line + '\n')
30:                 #out_flo.flush()
31:
32:             with sock.makefile(mode='r', encoding='utf-8') as in_flo:
33:                 echoed_line = in_flo.readline()
34:
35:             if echoed_line == '':
36:                 print('The echo server crashed', file=sys.stderr)
37:             else:
38:                 print(echoed_line, end='')
39:
40:     except Exception as ex:
41:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
42:         sys.exit(1)
43:
44: #-----
45:
46: if __name__ == '__main__':
47:     main()

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echo/echoserver.py (Page 1 of 1)

```

1: #!/usr/bin/env python
2:
3: #-----
4: # echoserver.py
5: # Author: Bob Dondero
6: #-----
7:
8: import os
9: import sys
10: import socket
11:
12: #-----
13:
14: def handle_client(sock):
15:
16:     with sock.makefile(mode='r', encoding='utf-8') as in_flo:
17:         line = in_flo.readline()
18:         if line == '':
19:             print('The echo client crashed')
20:             return
21:         print('Read from client: ' + line, end='')
22:
23:     with sock.makefile(mode='w', encoding='utf-8') as out_flo:
24:         out_flo.write(line)
25:         #out_flo.flush()
26:         print('Wrote to client: ' + line, end='')
27:
28: #-----
29:
30: def main():
31:
32:     if len(sys.argv) != 2:
33:         print(f'usage: python {sys.argv[0]} port', file=sys.stderr)
34:         sys.exit(1)
35:
36:     try:
37:         port = int(sys.argv[1])
38:
39:         server_sock = socket.socket()
40:         print('Opened server socket')
41:         if os.name != 'nt':
42:             server_sock.setsockopt(
43:                 socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
44:         server_sock.bind(('', port))
45:         print('Bound server socket to port')
46:         server_sock.listen()
47:         print('Listening')
48:
49:         while True:
50:             try:
51:                 sock, client_addr = server_sock.accept()
52:                 with sock:
53:                     print('Accepted connection')
54:                     print('Opened socket')
55:                     print('Server IP addr and port:',
56:                         sock.getsockname())
57:                     print('Client IP addr and port:', client_addr)
58:                     handle_client(sock)
59:             except Exception as ex:
60:                 print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
61:
62:     except Exception as ex:
63:         print(f'{sys.argv[0]}: {ex}', file=sys.stderr)
64:         sys.exit(1)
65:
66: #-----
67:
68: if __name__ == '__main__':
69:     main()

```