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ДИСЦИПЛИНА: «Распределенные системы»

**Отчет по практической работе №2**

**Тема:**

**«MULTICAST»**

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1. Добавление файлов для multicast в рабочую директорию.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
lemp@u20-08:~/Downloads$ dir
Distributed_systems-main      PR2
Distributed_systems-main.zip  socket_multicast_receiver.py
docker-compose.yml           socket_multicast_sender.py
frolov                       work
lemp@u20-08:~/Downloads$
```

2. Запуск получателя и отправителя.

The screenshot shows the Visual Studio Code interface with the file `socket_multicast_receiver.py` open. The code defines a multicast receiver that listens on port 1024 and responds to received messages. The terminal shows the execution of the script, which receives and responds to three messages from different IP addresses.

```
socket_multicast_receiver.py - Downloads - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
  > DOWNLOADS
    > Distributed_systems-main
    > frolov
    > PR2
    > work
    > Distributed_systems-main...
    > docker-compose.yml
    > socket_multicast_receiver.py
    > socket_multicast_sender.py
  > OUTLINE
  > TIMELINE

socket_multicast_receiver.py
17 mreq = struct.pack('4sL', group, socket.INADDR_ANY)
18 sock.setsockopt(
19     socket.IPPROTO_IP,
20     socket.IP_ADD_MEMBERSHIP,
21     mreq)
22
23 # Receive/respond loop
24 while True:
25     print('\nwaiting to receive message')
26     data, address = sock.recvfrom(1024)
27
28     print('received {} bytes from {}'.format(
29         len(data), address))
30     print(data)
31
```

```
rk
lemp@u20-08:~/Downloads$ python3 socket_multicast_receiver.py
waiting to receive message
received 19 bytes from ('172.26.35.133', 43111)
b'very important data'
sending acknowledgement to ('172.26.35.133', 43111)

waiting to receive message
received 19 bytes from ('172.26.35.128', 40081)
b'very important data'
sending acknowledgement to ('172.26.35.128', 40081)

waiting to receive message
received 19 bytes from ('172.26.35.128', 40081)
b'very important data'
sending acknowledgement to ('172.26.35.128', 40081)

lemp@u20-08:~/Downloads$ python3 socket_multicast_sender.py
sending b'very important data'
waiting to receive
received b'ack' from ('172.26.35.128', 10000)
waiting to receive
received b'ack' from ('172.26.35.20', 10000)
waiting to receive
received b'ack' from ('172.26.35.133', 10000)
waiting to receive
received b'ack' from ('172.26.35.25', 10000)
waiting to receive
```

3. Изменение в сообщении на «PRIVET», IP адрес – 172.26.35.128

socket\_multicast\_sender.py - Downloads - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

- DOWNLOADS
  - Distributed\_systems-main
    - frolov
    - PR2
    - work
  - Distributed\_systems-main...
  - docker-compose.yml
  - socket\_multicast\_receiver.py
  - socket\_multicast\_sender.py

socket\_multicast\_sender.py

```
1 import socket
2 import struct
3 import sys
4
5 message = b'PRIVET'
6 multicast_group = ('224.3.29.71', 10000)
7
8 # Create the datagram socket
9 sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
10
11 # Set a timeout so the socket does not block
12 # indefinitely when trying to receive data.
13 sock.settimeout(0.2)
14
15 # Set the time-to-live for messages to 1 so they do not
16 # go past the local network segment.
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

b'Privet'

sending acknowledgement to ('172.26.35.134', 53034)

waiting to receive message

received 6 bytes from ('172.26.35.128', 41944)

b'PRIVET'

sending acknowledgement to ('172.26.35.128', 41944)

waiting to receive message

received 6 bytes from ('172.26.35.29', 35598)

b'Hello!'

sending acknowledgement to ('172.26.35.29', 35598)

3 socket\_multicast\_sender.py

sending b'PRIVET'

waiting to receive

received b'ack' from ('172.26.35.128', 10000)

waiting to receive

received b'ack' from ('172.26.35.133', 10000)

waiting to receive

received b'ack' from ('172.26.35.29', 10000)

waiting to receive

received b'ack' from ('172.26.35.20', 10000)

waiting to receive

python3

bash

Ln 5, Col 19 Spaces: 4 UTF-8 LF Python