Internet Technology
Summer 2019
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CS352 Project 3: Automatic Repeat Request

Summary

     Included inside the zip file contains three sub-folders corrisponding to the three different ARQs. Using Python 3, I was able to make use of list and sockets to simulate the data transmission. Getting every test case to work was difficult but, by solving the base cases the algorithms works for a stream of sequence number of size $N < \infty$. Within the code, the list "packets" simulates packets being received out of order or with duplicates. **"packet" is a random word I chose to name the list I used and does not have corresponding meaning**.

Stop-and-wait

Sender.py

```
[Yusdels-MacBook-Air:Stop-and-wait yusdellima$ python3 sender.py
 Sender ready and is listening for receiver to connect
 Ack:0
 Ack:1
 Ack:2
 Ack:3
 Ack:4
 Ack:5
 Ack:6
 Ack:7
 Ack:8
 Ack:9
 Yusdels-MacBook-Air:Stop-and-wait yusdellima$ []
```

Receiver.py

```
[Yusdels-MacBook-Air:Stop-and-wait yusdellima$ python3 receiver.py
 Hello:0
 Hello:1
 Hello:2
 Hello:3
 Hello:4
 Hello:5
 Hello:6
 Hello:7
 Hello:8
 Hello:9
 Yusdels-MacBook-Air:Stop-and-wait yusdellima$ |
```

Go-Back-N

Sender.py

```
packet = [0,1,2,4,5,3,4,5,6,7,0,0,0,8,9]
```

```
[Yusdels-MacBook-Air:Go-back-N yusdellima$ python3 sender.py
 Sender ready and is listening for receiver to connect
 Ack:0
 Ack:1
 Ack:2


 Ack:3
 Ack:4
 Ack:5
 Ack:6
 Ack:7



 Ack:8
 Ack:9
 Yusdels-MacBook-Air:Go-back-N yusdellima$ 
```

Receiver.py

```
[Yusdels-MacBook-Air:Go-back-N yusdellima$ python3 sender.py
 Sender ready and is listening for receiver to connect
 Ack:0
 Ack:1
 Ack:2


 Ack:3
 Ack:4
 Ack:5
 Ack:6
 Ack:7



 Ack:8
 Ack:9
 Yusdels-MacBook-Air:Go-back-N yusdellima$ 
```

Selective Repeat

```
packet = [0,1,2,2,4,3,4,5,6,7,7,7,7,8,9]
#expected results: 0,1,2,4  3,5,6,7  8, 9
```

Sender.py

```
[Yusdels-MacBook-Air:Selective Repeat yusdellima$ python3 sender.py
Sender ready and is listening for receiver to connect
Ack:0
Ack:1
Ack:2
Ack:4

Ack:3
Ack:5
Ack:6
Ack:7

Ack:8
Ack:9
Yusdels-MacBook-Air:Selective Repeat yusdellima$ ▉
```

Receiver.py

```
[Yusdels-MacBook-Air:Selective Repeat yusdellima$ python3 receiver.py
Hello:0
Hello:1
Hello:2
Hello:4

Hello:3
Hello:5
Hello:6
Hello:7

Hello:8
Hello:9
Yusdels-MacBook-Air:Selective Repeat yusdellima$ ▉
```

```
packet = [0,1,2,2,4,3,5,8,9,7,6,4,3,0,1]
```

Sender.py

```
[Yusdels-MacBook-Air:Selective Repeat yusdellima$ python3 sender.py
Sender ready and is listening for receiver to connect
Ack:0
Ack:1
Ack:2
Ack:4

Ack:3
Ack:5
Ack:8
Ack:9
Ack:7

Ack:6
Yusdels-MacBook-Air:Selective Repeat yusdellima$ 
```

Receiver.py

```
Yusdels-MacBook-Air:Selective Repeat yusdellima$ python3 receiver.py
Hello:0
Hello:1
Hello:2
Hello:4

Hello:3
Hello:5
Hello:8
Hello:9
Hello:7

Hello:6
Yusdels-MacBook-Air:Selective Repeat yusdellima$ 
```