**深 圳 大 学 实 验 报 告**

**课程名称：­ 计算机网络**

**实验项目名称： Transport Layer**

**学院： 电子与信息工程学院**

**专业： 电子信息工程**

**指导教师： 毕宿志**

**报告人： 陈闻天 学号： 2023280259**

**班级： 04**

**实验时间： 2024年11月12日**

**实验报告提交时间： 2024年11月26日**

**教务处制**

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| Aim of Experiment:   1. Master the principle of Stop-and-Wait protocol 2. Develop a Stop-and-Wait protocol in Python |
| Experiment Content:   1. Develop a client program to send messages 2. Develop a server program to receive and response the request 3. Simulate manually packet loss |
| Experiment Process：   1. Client program:    1. Create a client socket and connect the server socket    2. Create a list inserted some random integers, which indicate there are packet loss to happen    3. Iterate this list    4. When normal element is met, the sender of client will send successful signs, otherwise it will send the sign of loss    5. Finally calculate the total time and compute the loss rate and average time of RTT    6. Close the connection and client socket 2. Server program:    1. Create a server socket and bind a specified IP and port    2. Waiting to connect with client    3. When receiver of server receives the successful sign from client, the sender of server will send ACK back to client, otherwise it will send “loss” back to client, which is used to simulate the situation of packet loss.    4. Finally receiving the sign of end, server will close the connection and close the server socket |
| Data Logging and Processing:   1. When the numbers of packet are 10, the loss rate is 0.5, the outcome is below:      1. When the numbers of packet are 100, the loss rate is 0.2, the outcome is below:      1. When the numbers of packet are 100, the loss rate is 0.5, the outcome is below: |
| Experimental Results and Analysis:   1. Result:    1. At the same packet loss rate, when the numbers of packet increase, the average time of RTT will decreases.    2. At the same packet sent, when the packet loss rate increase, the average time of RTT will also increases. 2. Analysis:    1. We can reduce the packet loss to decrease the average time of RTT to improve the speed of network |
| 指导教师批阅意见：  成绩评定：  指导教师签字：  年 月 日 |
| 备注： |

注：1、报告内的项目或内容设置，可根据实际情况加以调整和补充。

2、教师批改学生实验报告时间应在学生提交实验报告时间后10日内。