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Student Reference Number:

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Programme: BSc (Hons) Computer Networks	
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<p>Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.</p> <ul style="list-style-type: none"> <li>• Gunathilaka I. D.K. D – 10898583</li> <li>• Basnayaka M. D. B – 10900313</li> <li>• Liyanage L. A. R – 10898602</li> <li>• Sandeepa G. L – 10898684</li> </ul> <p><b><i>We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.</i></b></p> <p>Signed on behalf of the group: kosala</p>	
<p>Individual assignment: <b><i>I confirm that I have read and understood the Plymouth University regulations relating to Assessment Offences and that I am aware of the possible penalties for any breach of these regulations. I confirm that this is my own independent work.</i></b></p> <p>Signed:</p>	
<p>Use of translation software: failure to declare that translation software or a similar writing aid has been used will be treated as an assessment offence.</p> <p>I *have used/not used translation software.</p> <p>If used, please state name of software.....</p>	
<p>Overall mark _____ %      Assessors Initials _____      Date _____</p>	

## Project Content

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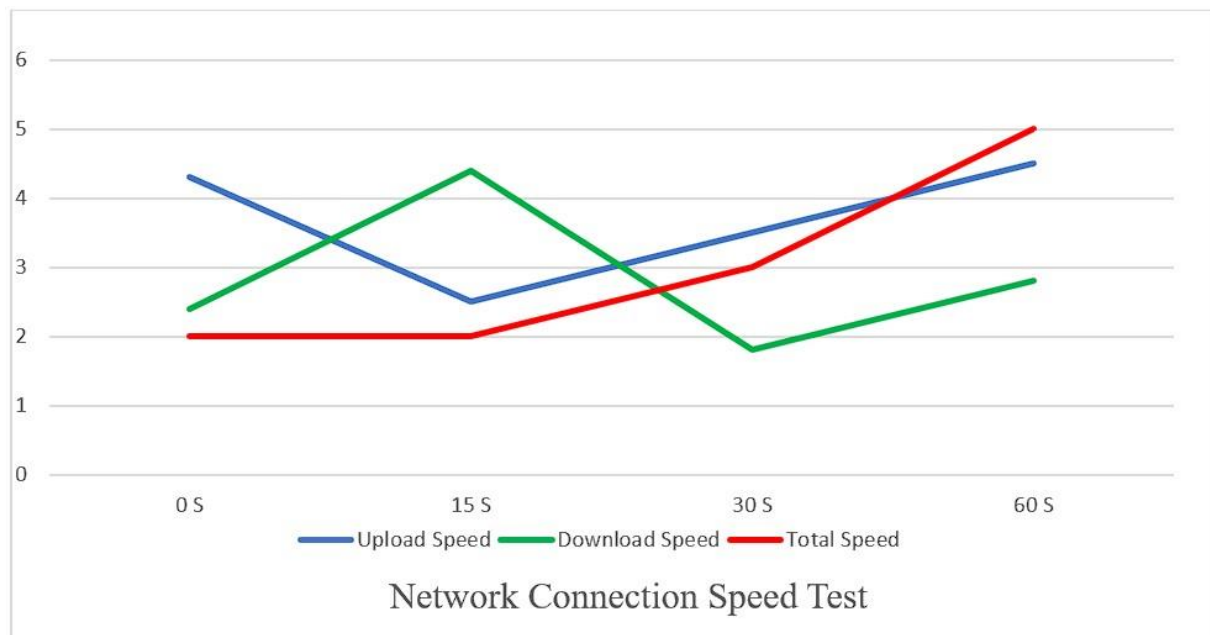
## Introduction

### ➤ Application Introduction:

In this application, people can measure the internet connection parameters. This application gives you very valuable information about various features of your connection. In this application, we output these internet connection parameters.

1. Upload Speed
2. Download Speed
3. Network latency
4. Bandwidth Usage
5. Packet Loss
6. Jitter
7. Throughput

We make this application for desktop users. This application has a user-friendly interface. It is a free open-source Software application. This application monitors all speed tests in real-time. The specialty of this application is user satisfaction. Because users can access many parameters using one application. Users can reduce their downtime. They can identify and troubleshoot network problems quickly and they can improve network reliability. By identifying this application, users can choose their network connection and which internet service providers are the best.



### ➤ **Parameters Description**

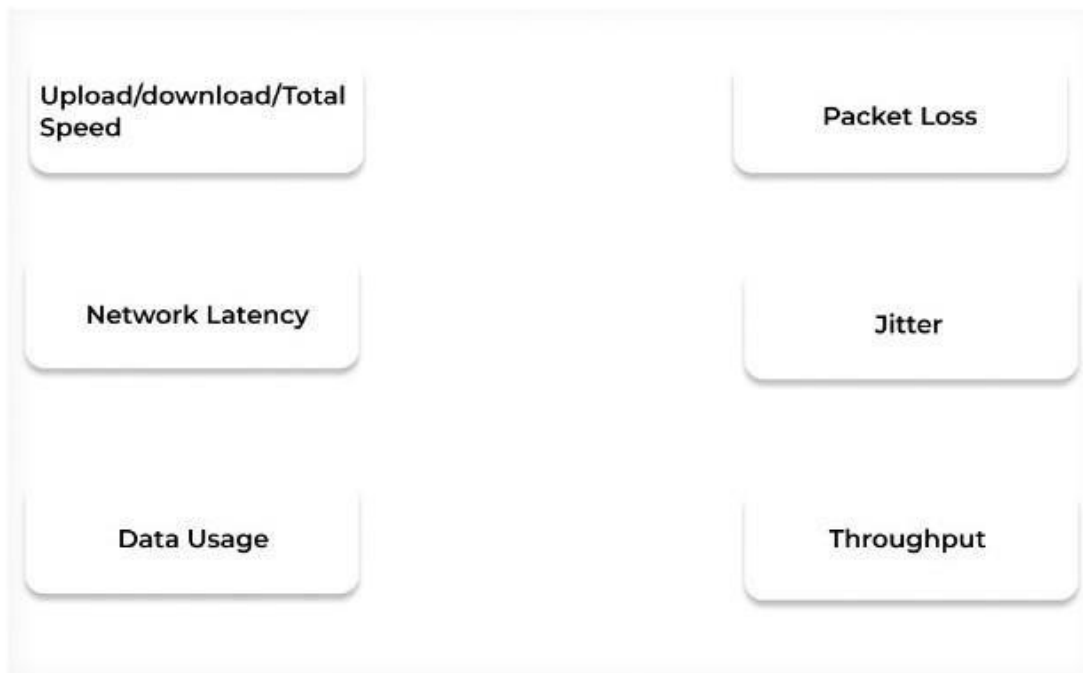
In upload speed we can data transfer from the user's device to the internet. These transfers we can measure. The measuring unit is megabits per second (Mbps). In download speed the data can be transferred from the internet to the user's device. This transfer can also measure. You can get the measure using megabits per second (Mbps). In network speed the time takes for data or a request to go from the source to the destination. Network latency is measured by using milliseconds. In bandwidth usage the capacity of a computer network, transfer data between devices or over the internet in a specific amount of time. Usually measured in bytes (B). In packet loss it occurs when one or more packets of data travel across a computer network and can't reach their destination. Packet loss measured as a percentage. In Jitter the variation in time delay between when a signal is transmitted and when it is received over a network connection. Jitter is measured using milliseconds (Ms). In throughput within a given period, measure the amount of data that can be transmitted over a network. This is measured by using bits per second (Bps) or kilobits per second (kbps).

## Project Overview



# Internet Connection Checker

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## **Project Objectives**

- Users can access many parameters using one software application.  
By using this application users can access many parameters using one software application. It is a special thing and users can be satisfied with the application.
- Can identify and troubleshoot network problems quickly.  
In this application users can identify their network problems quickly. They can get a clear understanding by using network speed testing graphs.
- Data usage tracking  
Users can track their data usage by using this application and get a clear understanding of how much data usage is needed for their work.
- User-friendly interface  
This application has user friendly interface. Users can use this application without any trouble. They can easily find their needs while they are using this application.
- Privacy and security  
This application is high privacy and security software application. Users can't edit this application and these application graphs are real time processing applications.

## Project Technologies Intended to Use

	Technology
Programming Language	Python
UI (User Interface)	Figma
GUI (Graphical User Interface)	<ul style="list-style-type: none"><li>• Graphs Matplotlib</li><li>• Frontend tkinter</li><li>• Backend Psutil</li></ul>

## **Application Target Audience**

- **Beginner-level individual internet users**

This application is very useful for beginner-level individual internet users. They can quickly identify their network issues and fix their problems and needs.

- **The students whose study network**

Network studying students can get ideas and they can develop many applications by using this application.

- **Network Maintainer developer.**

For network maintainer developers they really need an application like this for their network maintenance. They can easily fix the network problems and give the users more developed networks.

- **For Business Companies**

This internet connection checker is useful for business companies also. Those companies really want a stable connection for their day-to-day purposes.

- **Government Agencies**

For government agencies, they also needed this kind of application for their services. They provide an online service for the citizens to use the application to monitor their internet connection and their services are always accessible.

- **Healthcare Providers**

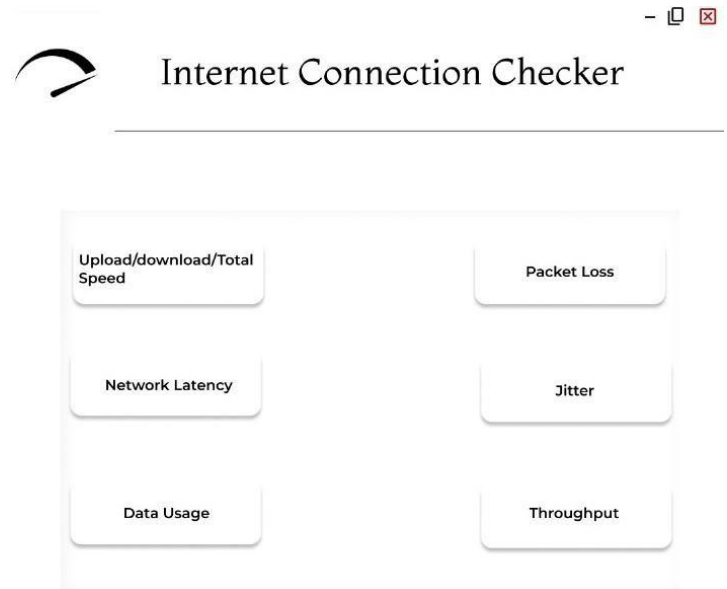
In this time telemedicine is rising now. Healthcare providers can use this application to ensure they can connect with their patients.



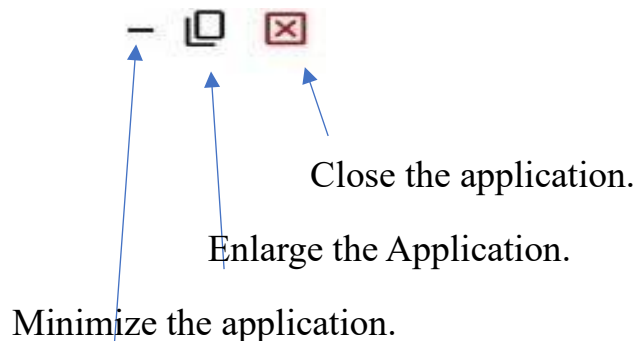
## Application Features

### Button Represent

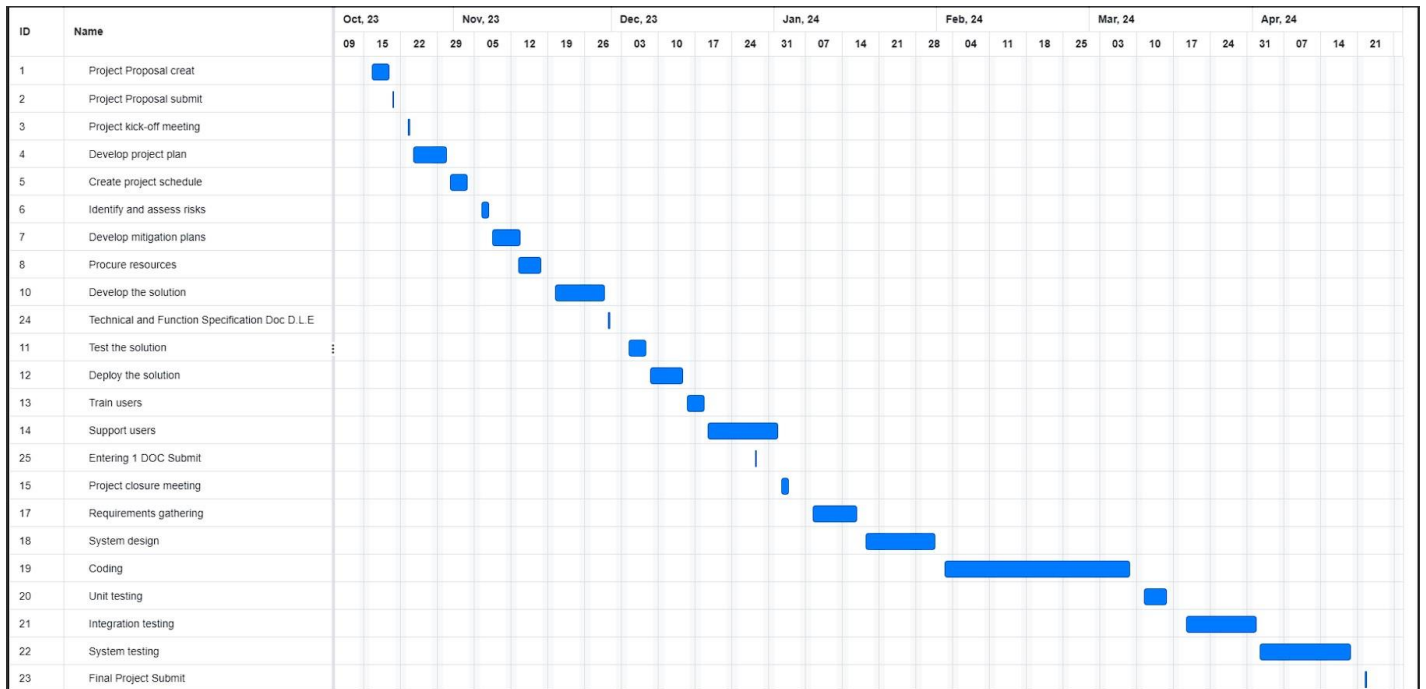
- Upload/download/Total Speed button  
Represent  
Upload Speed  
Download Speed  
Total Speed
- Network Latency Button Represent  
Network latency
- Data Usage button represents.  
Usage of the data
- Packet Loss button represents. How many packets are losses.



### Application Button Represents



## GANTT Chart / Time Plan



## **Important Links**

For UI - Figma Link

- (<https://www.figma.com/file/YG2yB0otPG5Pz59w23KYQw/InternetConnection->)