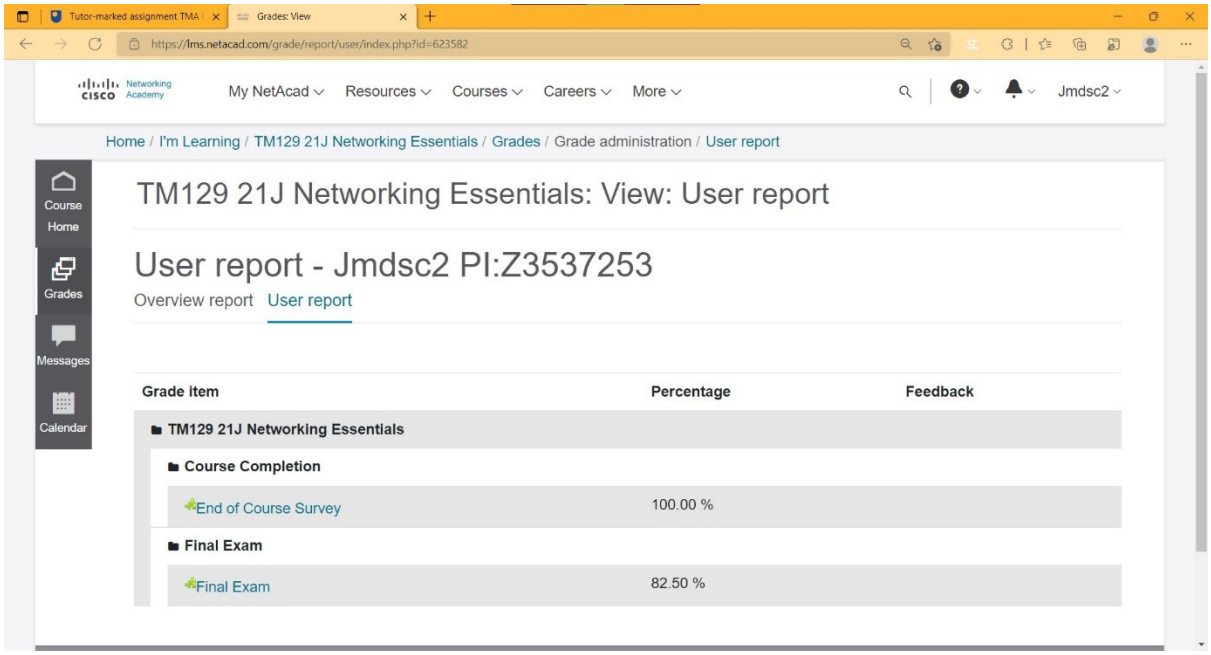
Question 1

My final grade



TMA01 Q1 mark = 0.2

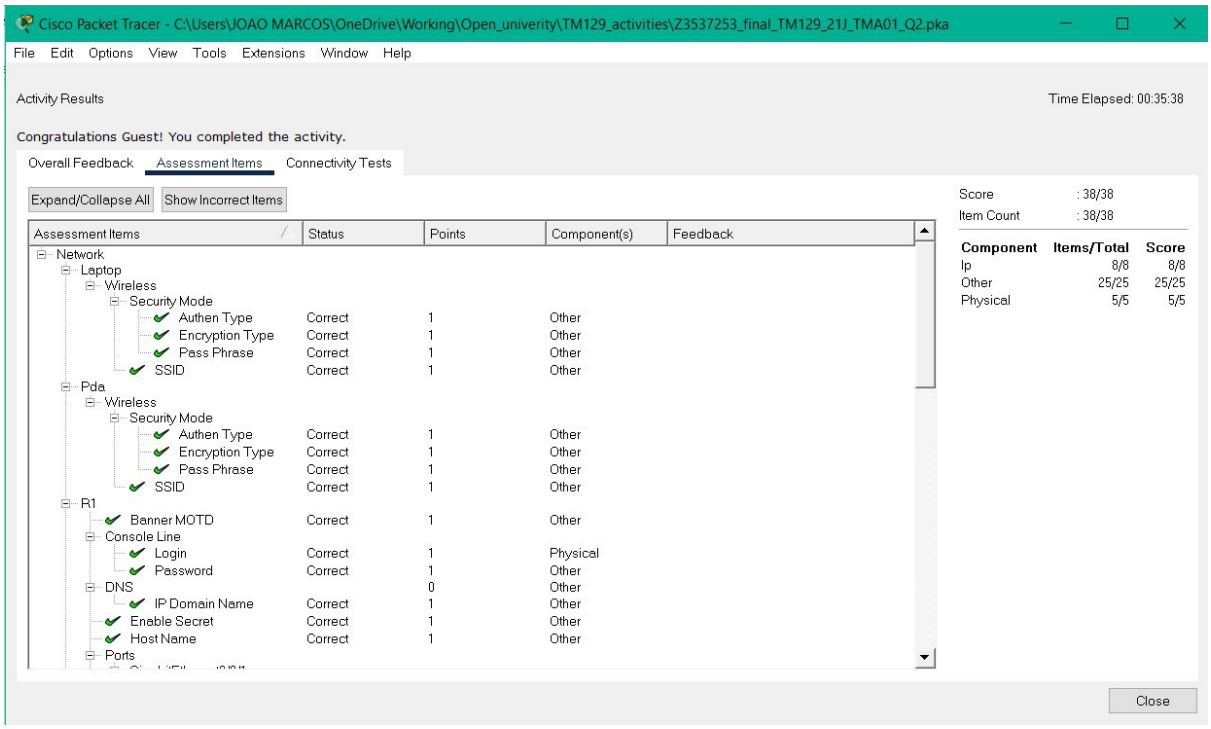
Final exam mark = 82.50

TMA01 Q1 mark is 0.2 × 82.50 = 16.5

Therefor rounded to the nearest whole number, the final mark for question 1 is 17.

Question 2

My packet tracer activity



d) my final score was 38/38

e) I am using packet tracer version 8.0.0, released in March 2021, this packet tracer activity on Cisco Network Essentials is called 20.7.1 skills integration challenge.

Question 3

2

a) The advantage of using the Packet Tracer simulator is that you can plan your network and test it before you built it. And it's a great resource for learning about networks since it's free and you don't need to buy expensive equipment to start learning about networks.

(48 words)

b) (I) 11000000.10101000.01100100.00001010 = **192.168.100.10**

128	64	32	16	8	4	2	1
1	1	0	0	0	0	0	0

128 + 64 = **192.**

128	64	32	16	8	4	2	1
1	0	1	0	1	0	0	0

128 + 32 + 8 = **168.**

128	64	32	16	8	4	2	1
0	1	1	0	0	1	0	0

64 + 32 + 4 = **100.**

128	64	32	16	8	4	2	1
0	0	0	0	1	0	1	0

8 + 2 = **10**

The IP address is **192.168.100.10**

(ii) The IP address 191.100.2.255 and subnet mask 255.255.255.0

it is a public IP address

it is a broadcast network address

and it's a class C IP address

(iii) 100.122.171.24 = **01100100.01111010.10101011.00011000**

128	64	32	16	8	4	2	1
0	1	1	0	0	1	0	0

64 + 32 + 4 = 100. = **01100100.**

128	64	32	16	8	4	2	1
0	1	1	1	1	0	1	0

64 + 32 + 16 + 8 + 2 = 122. = **01111010.**

128	64	32	16	8	4	2	1
1	0	1	0	1	0	1	1

128 + 32 + 8 + 2 + 1 = 171. = **10101011.**

128	64	32	16	8	4	2	1
0	0	0	1	1	0	0	0

16 + 8 = 24 = **00011000**

Therefore, the binary IP address for 100.122.171.24 = **01100100.01111010.10101011.00011000**

c) (I) Denial of Service (DoS) is an aggressive attack on an individual computer, user, or group of users, this attack is intended to disrupt network connection.
Systems, servers, routers, can also be a target of (DoS) this type of attack is relatively simple and can be initiated by an unskilled actor.

(DoS) the attack has two functions.

1 Flood a network, application, or host preventing legitimate network traffic.

2 Disrupt network connections between client and servers.

SYN (synchronous) flooding - Packets are sent to a server requesting a connection, these packets contain invalid source IP addresses, The servers get overwhelmed trying to respond to these fake packets and can't respond to legitimates packets

Ping of Death – The packets are greater in size than the number allowed by the IP (65,535 Bytes) sent to devices. Which can lead the system to crashes.

(140 words)

Distributed Denial of Service (DDoS)

It's a more sophisticated attack and a more damaging form of **(DoS) attack** its design is to saturate the network with useless data and operate on a much larger scale than DoS. Usually, hundreds or even thousands of attack points attempt to overwhelm a target. The attack could be from computers infected by a DDoS code. These infected computers are called **botnets** and these machines attack the target site when invoked.

(71 words)

(II)

A virus is a type of program that spreads by modifying other programs and files but it cannot replicate by Itself.

A worm is quite like a virus, but it doesn't need to attach itself to a program.

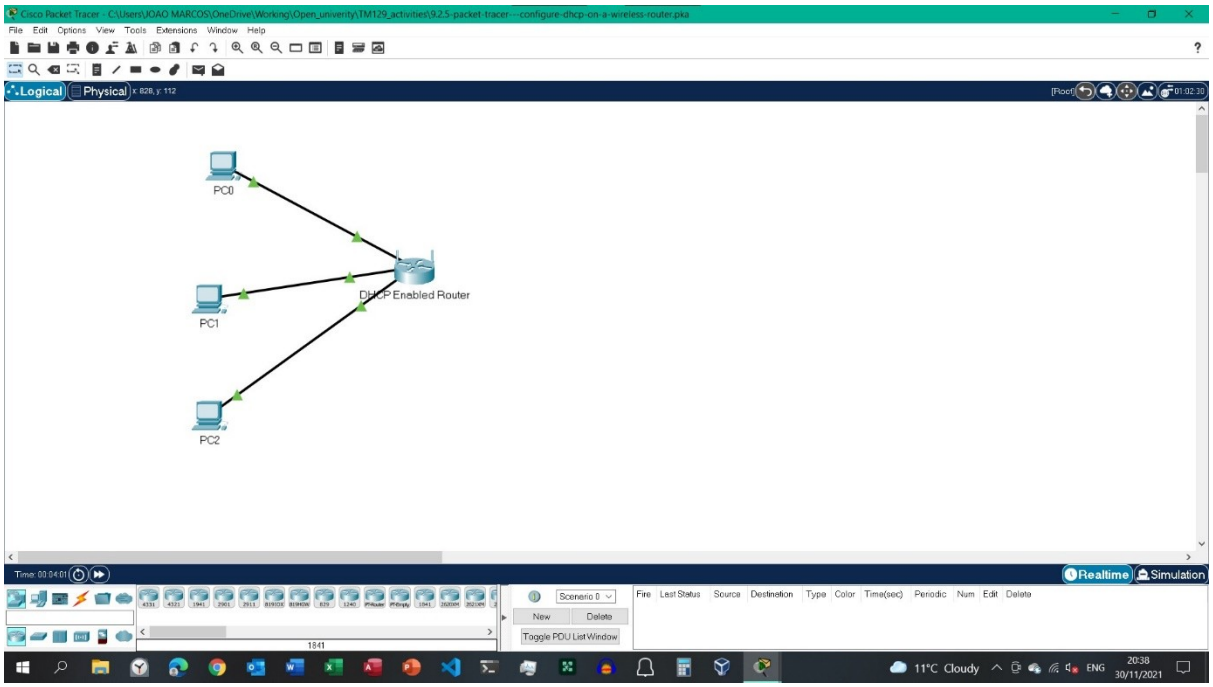
(250 words total)

The site from Question 3 is Cisco Network Essentials Course, Section 15, (Security Considerations) Available at https://contenthub.netacad.com/netess/15.4.1 (Accessed 28 November 2021)

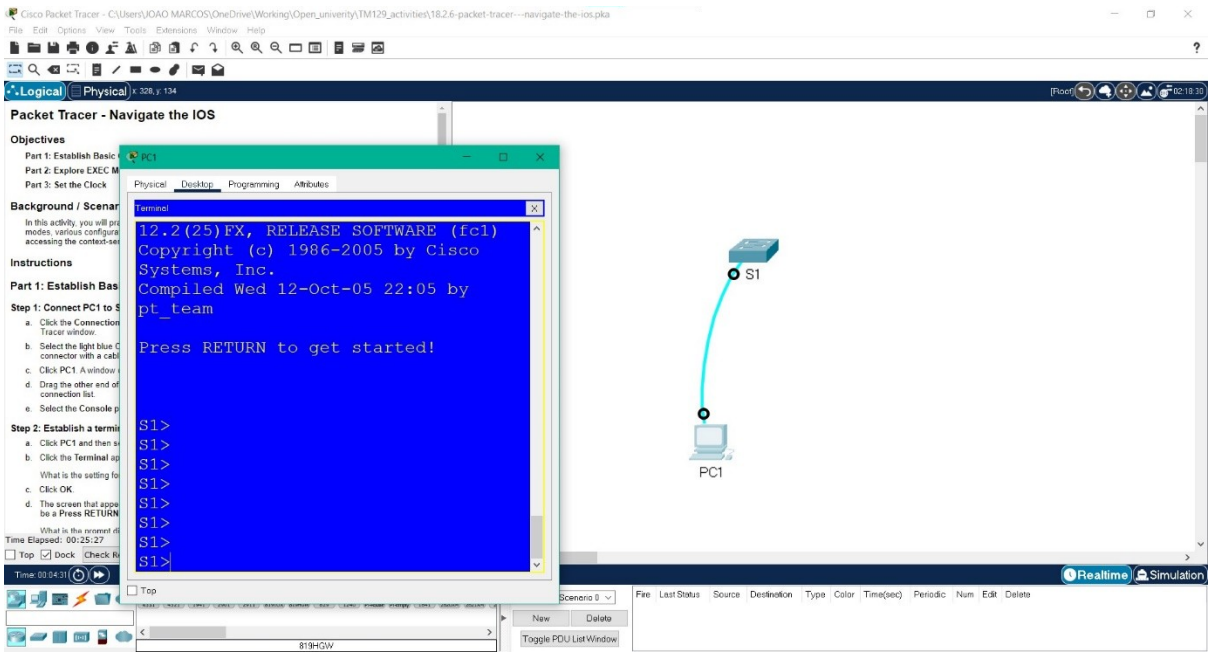
Question 4

a) My 129 ePortifolio activities

1 Packet tracer activity 9.2.5 from week 3, in this activity I am configuring a DHCP Router to dynamically assign IP addresses to PC0, PC1, and PC2.



2 Packet Tracer Activity 18.2.6 from week 7, in this activity I am navigating the cisco IOS, I am controlling the router from the PC by a rollover cable.



b) My experience with the ePortfolio activities has been great so far, the packet tracer activities have been challenging because you have to put into practice what you have learned,

The ePortfolio activities

I am used to theory (**passive learning**) and very little practice, but in this course, I did more practice than theory. However, those two activities **(9.2.5 DHCP)** and **(18.2.6 Navigate Cisco IOS**) were easier.

The DHCP activity was very interesting for me because I always thought that you had to configure IP addresses on network devices manually, I didn't know that my wireless router works as a DHCP server as well.

Technical Skills

Doing these activities, I am more familiar with packet tracer, I have used packet tracer in the past, but I didn't know how to use it very well, the commands, preference menus, and so on. But now I feel more comfortable using it.

Soft skills

The TMA01 packet tracer activity was hard for me, specially to configure **ssh** and **username**

I got the username wrong many times because I didn't know that I had to set up a username inside the vty console line and not in the router. But after some research I was able to solve it.

(206 words)