SIT202– Computer Networks and Communication

Task 4.1C: Above and Beyond Pass

This is a Credit Task

As you are targeting above the pass grade, you will be expected to gain deeper understanding of the topics we cover in this unit, going above and beyond in your learning journey. For this credit task, **you will be expected to demonstrate your deeper understanding of three core modules (except Module 1)** that you complete in this unit.

Task Requirement

Present evidence that you have been able to gain deeper understanding of the content we cover in three modules of the unit along with a summary and a reflection that indicate how you have demonstrated deeper understanding of the chosen modules.

You need to submit your summary, reflections & evidence to OnTrack.

Task Instruction

For this task, we want you to demonstrate that you have been able to use what you have learnt in the unit to extend your knowledge on the chosen topics. You can go above and beyond in completing more activities in addition to what you have completed in module exercises and active classes relevant to each module. In this task, you need to provide a summary, reflection, and evidence on your deeper understanding of the topics. The evidence can contain the additional activities and analyses you have done, and any other work that you produced. You can take screenshots of your analyses and simulations and include in here. If you have developed an application/ program (for example using Python), then please also provide the code along with the submission labelling the code. **Please make sure to include a separate summary, reflection, and evidence for each module that you include in this task**.

We provide hints for above and beyond tasks that you can complete in some activity sheets (designed for weekly active class). The following list shows two sample above and beyond tasks that you can complete for Module 2. Check the rest of Above and Beyond exercises and contents listed in your Active Class worksheets and/or in the unit site Modules.

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Module 2:

- Analysing TLS
    - Open your web browser and clear the browser's cache. Open the Wireshark packet sniffer and start the packet capture
    - Enter a URL with HTTPS in your browser.
    - Stop packet capture and you can start analysing the packets. Explain the operation and handshake process of TLS using the screen captures of Wireshark.

    - You need to clearly identify the message sequence and protocols used (including transport layer protocols) before your browser sends the first HTTP GET message to the relevant web server.

    - Can you analyse HTTPS in Wireshark? Explain your answer. If yes, provide evidence on how we can do that. If not, is there any alternative method we could use to analyse HTTPS?

- E-mails (another popular application)
    - What is the principal application layer protocol used in e-mails?
    - What is the underlaying architecture and transport layer protocol used in e-mail application layer protocol?
    - Can you list down the basic steps involve in sending an e-mail from user A to B?

Task Submission Instruction

You need to submit a document (a pdf) to OnTrack that outlines the following:

For each selected module,

1. Evidence that you went above and beyond in deepening your understanding of the topic covered in the module

2. Your summary and reflection that indicate how you have demonstrated deeper understanding of the topic covered in the module.