

Zihaad Khan

Unit 6 – Essay Outline

The Essay will be broken up into 6 paragraphs as follows:

Paragraph 1

Paragraph 1 will contain an introduction to Cybersecurity and will provide a description of ASISM as well as a summary of the problem.

Paragraph 2

Paragraph 2 will focus on the following points and will be discussed:

- Discuss Benefits of ASMIS
- Discuss Cyber Threats (Use CIA, STRIDE Threat Modelling Technique)
- Obtain research papers depicting that ASMIS's are efficient & effective

Paragraph 3

Paragraph 3 will highlight the Background to UML Diagrams and Threat Modelling Techniques. Various Threat Modelling techniques will be discussed as well as the justifications for their use. Specifically, the STRIDE modelling technique will be used to achieve the objectives. There are three key resources that will be used to obtain information on UML, these are as follows:

- Ambler, S. W. (2003) *The Elements of UML Style*. Cambridge, UK: Cambridge University Press.
- Kong, J., Xu, D. and Zeng, X.(2010) UML-based modeling and analysis of security threats. *International Journal of Software Engineering and Knowledge Engineering* 20(6): 875-897.
- The Unified Modelling Language User Guide, Grady Booch, James Rumbaugh, Ivar Jacobson. Publisher: Addison Wesley. First Edition October 20, 1998. ISBN: 0-201-57168-4, 512 pages

Paragraph 4

Paragraph 4 will include the various UML diagrams drawn using Visual Paradigm. Each UML diagram will be explained in terms of the threat modelling techniques. These UML diagrams are listed in the next section, the focus will be on the Abuse case diagram as well as the sequence diagrams (with and without security implementation)

Paragraph 5

Paragraph 5 will focus on the following points:

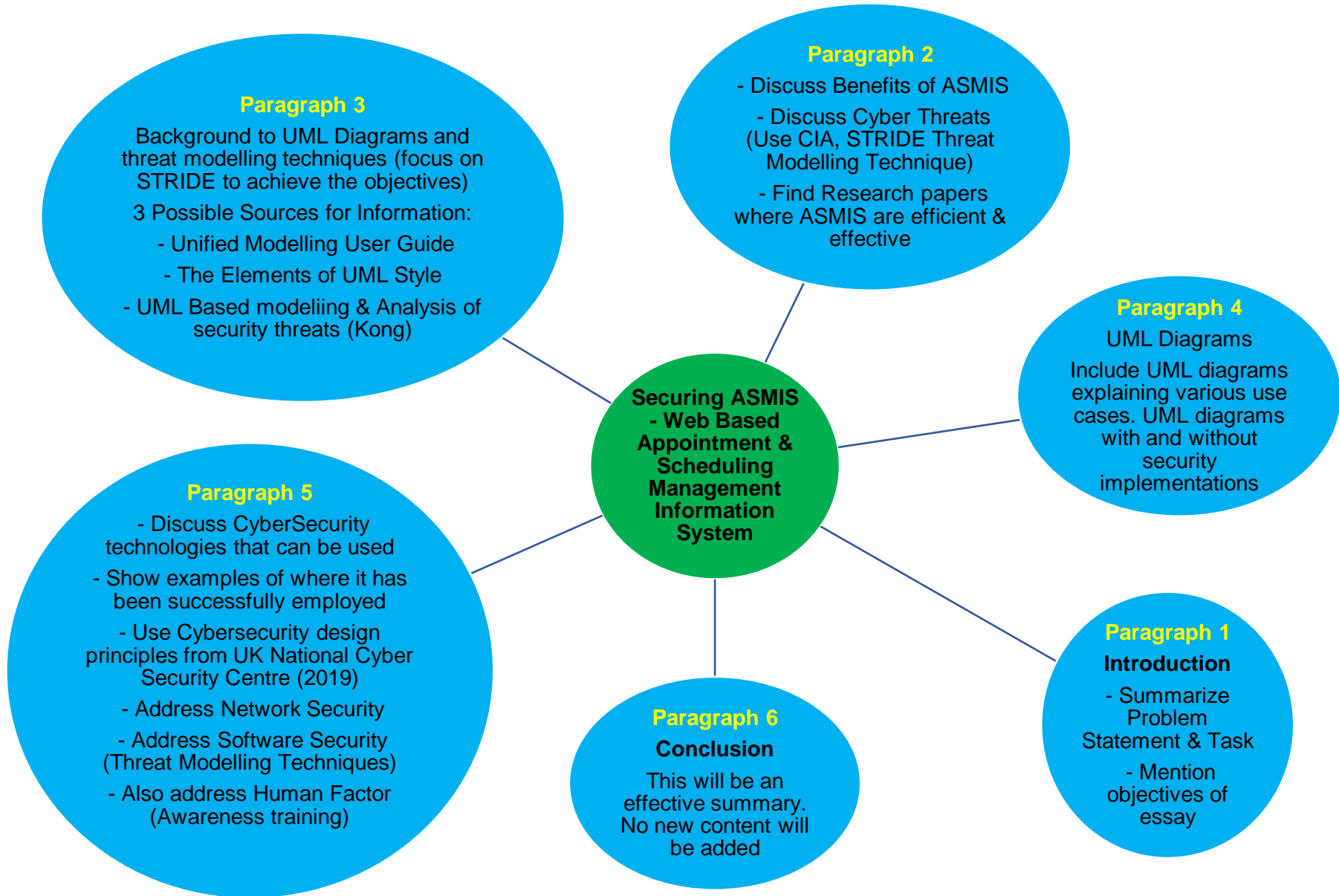
- Discuss Cyber Security Technologies that can be used to address the problem

- Show examples of where it has been successfully employed (research papers and journals as sources)
- Use Cybersecurity design principles from UK National Cyber Security Centre (2019)
- Address Network Security (Denial of Service, Unauthorised access, etc), various devices will be suggested to protect various parts of the network.
- Address Software Security (Threat Modelling Techniques)
- Also address Human Factor (Awareness training and creating a cybersecurity culture within the organization)

Paragraph 6

This will be the conclusion of the essay in the form of an effective summary of the main points. Recommendations based on the point made in the previous paragraphs will be provided. No new content will be added.

The above is also depicted in a spider diagram below:



The following UML diagrams will be used:

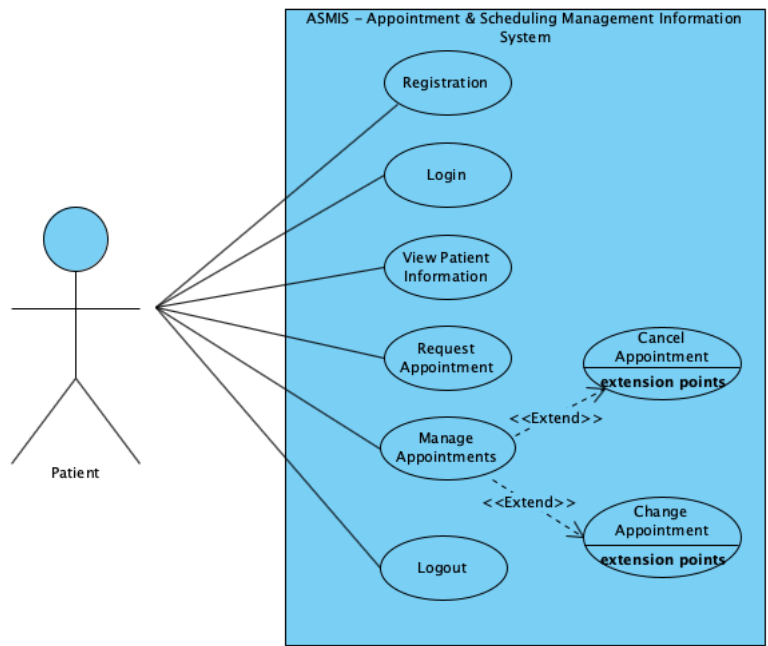


Figure 1: Patient - Use Case – AS MIS

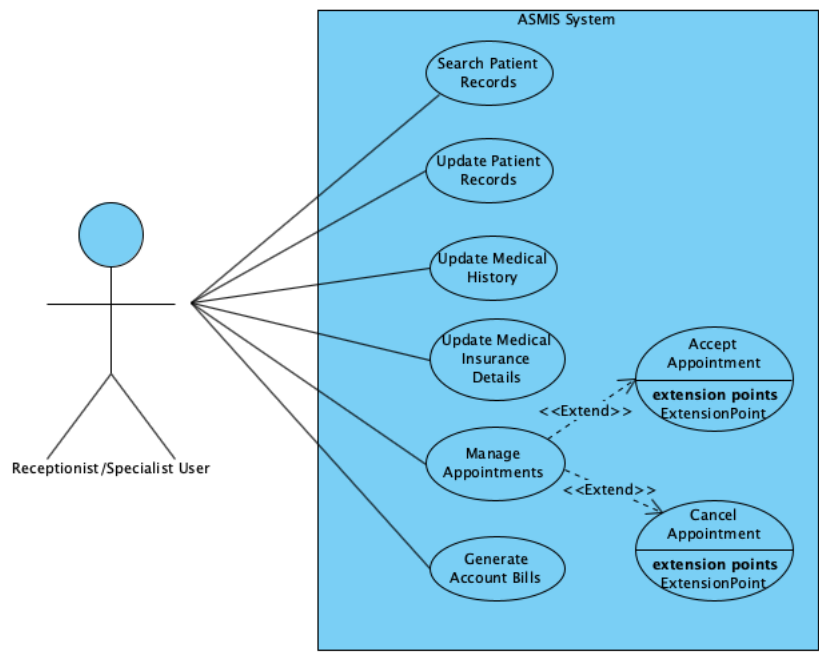


Figure 2: Internal AS MIS user - Use Case

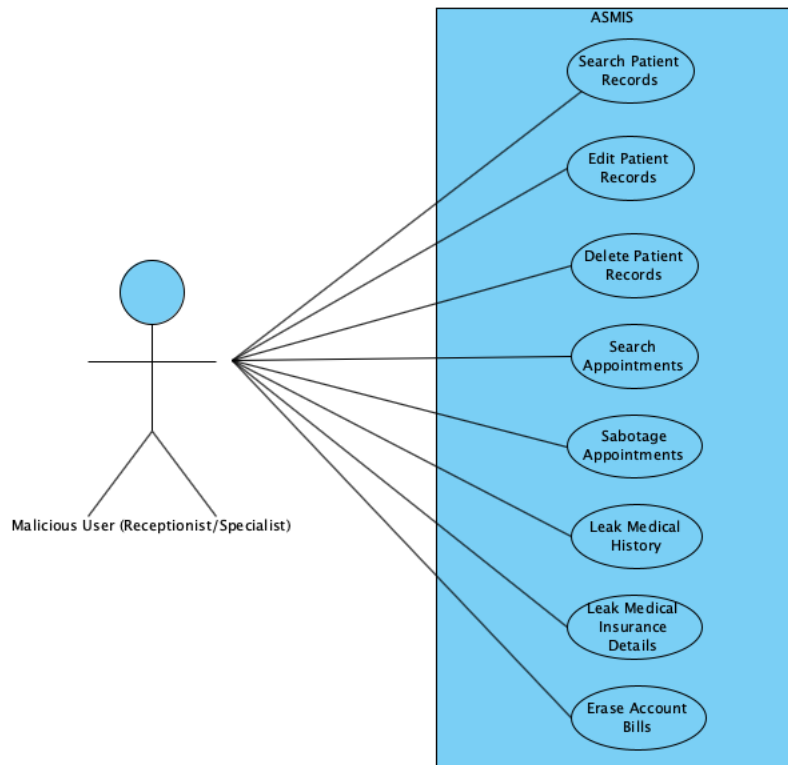


Figure 3: Malicious User - Abuse Case - ASMIS

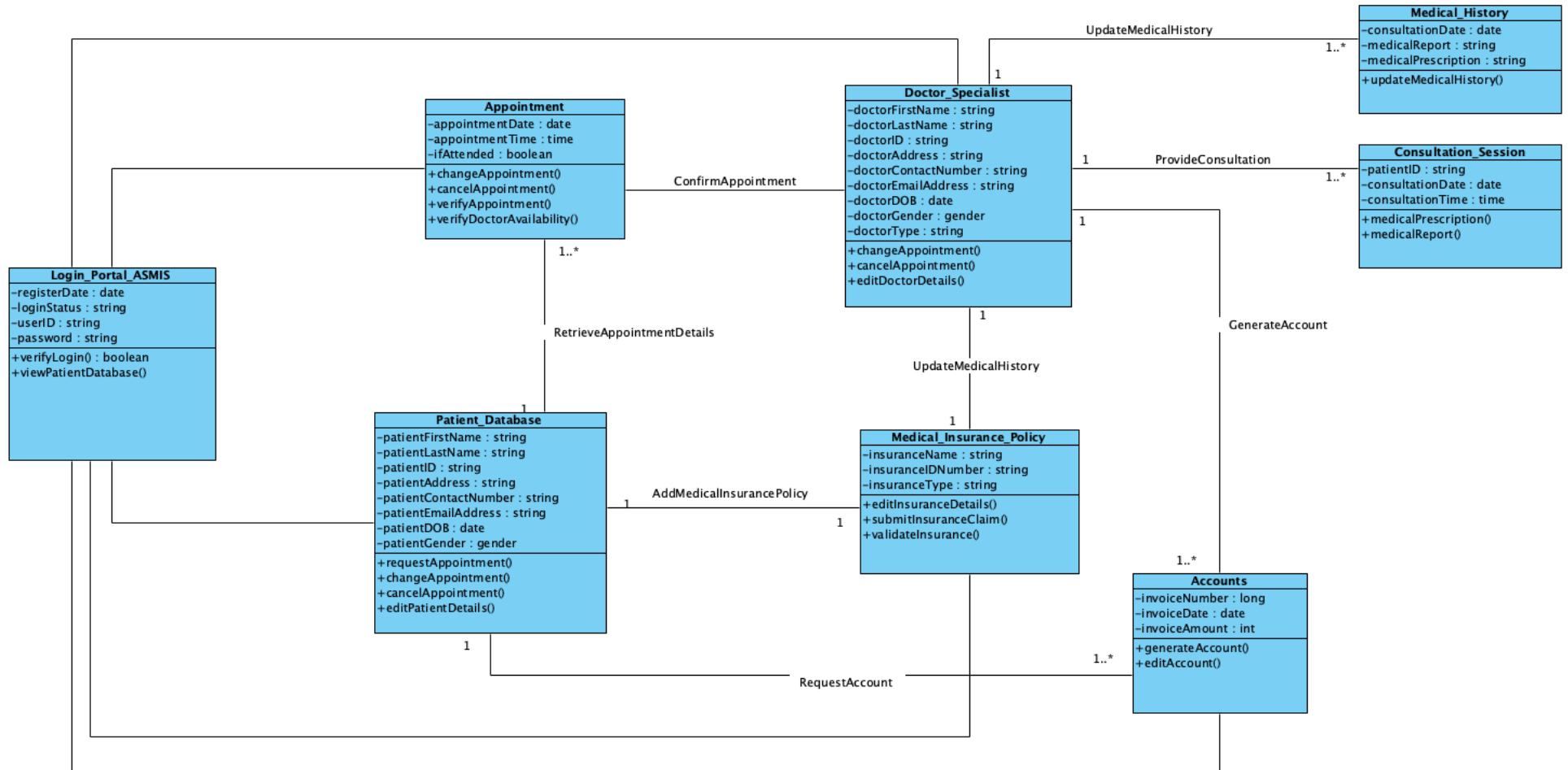


Figure 4: Class Diagram - ASMIS

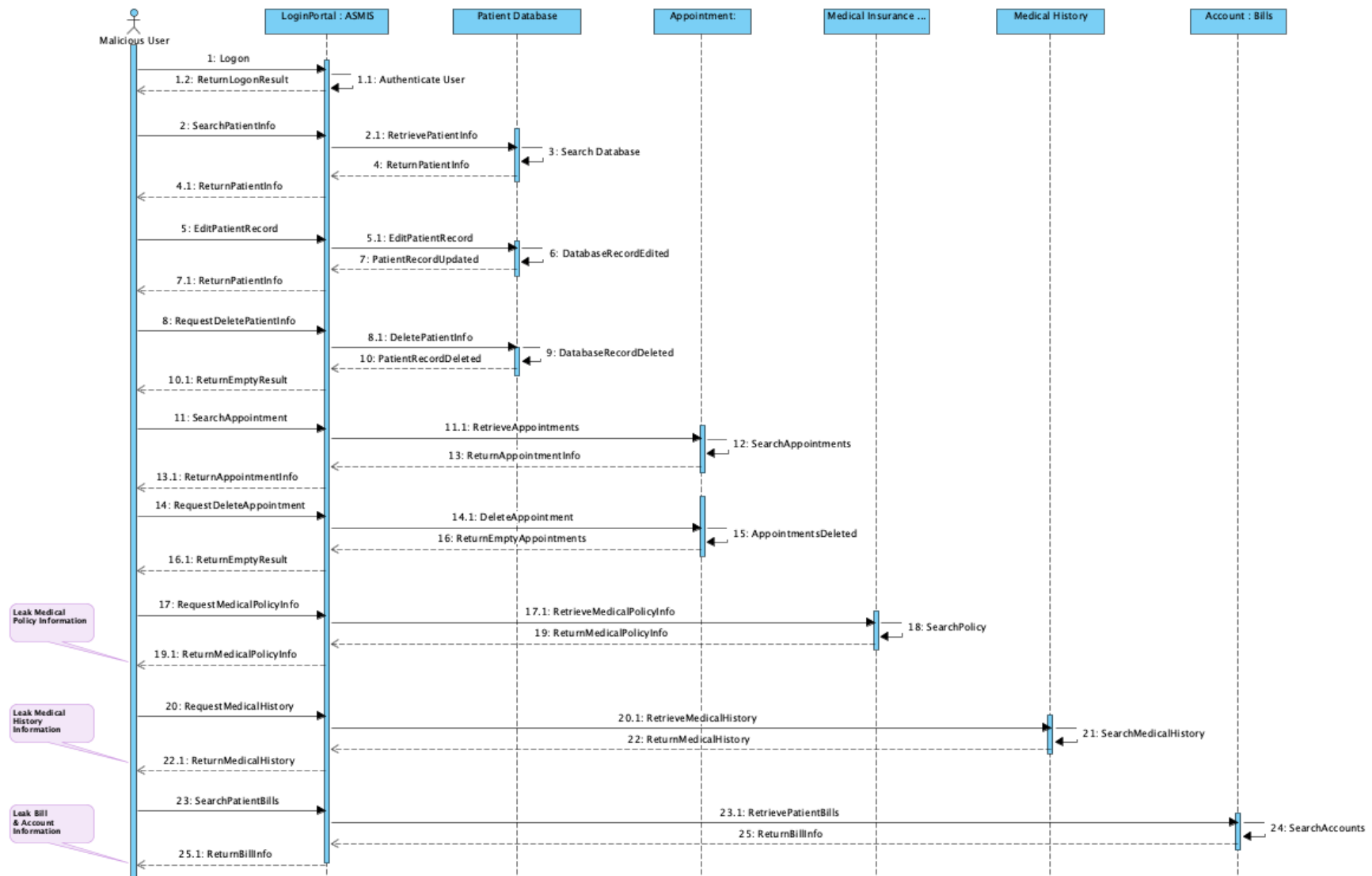


Figure 5: Malicious User - Sequence Diagram – AS MIS – No Security

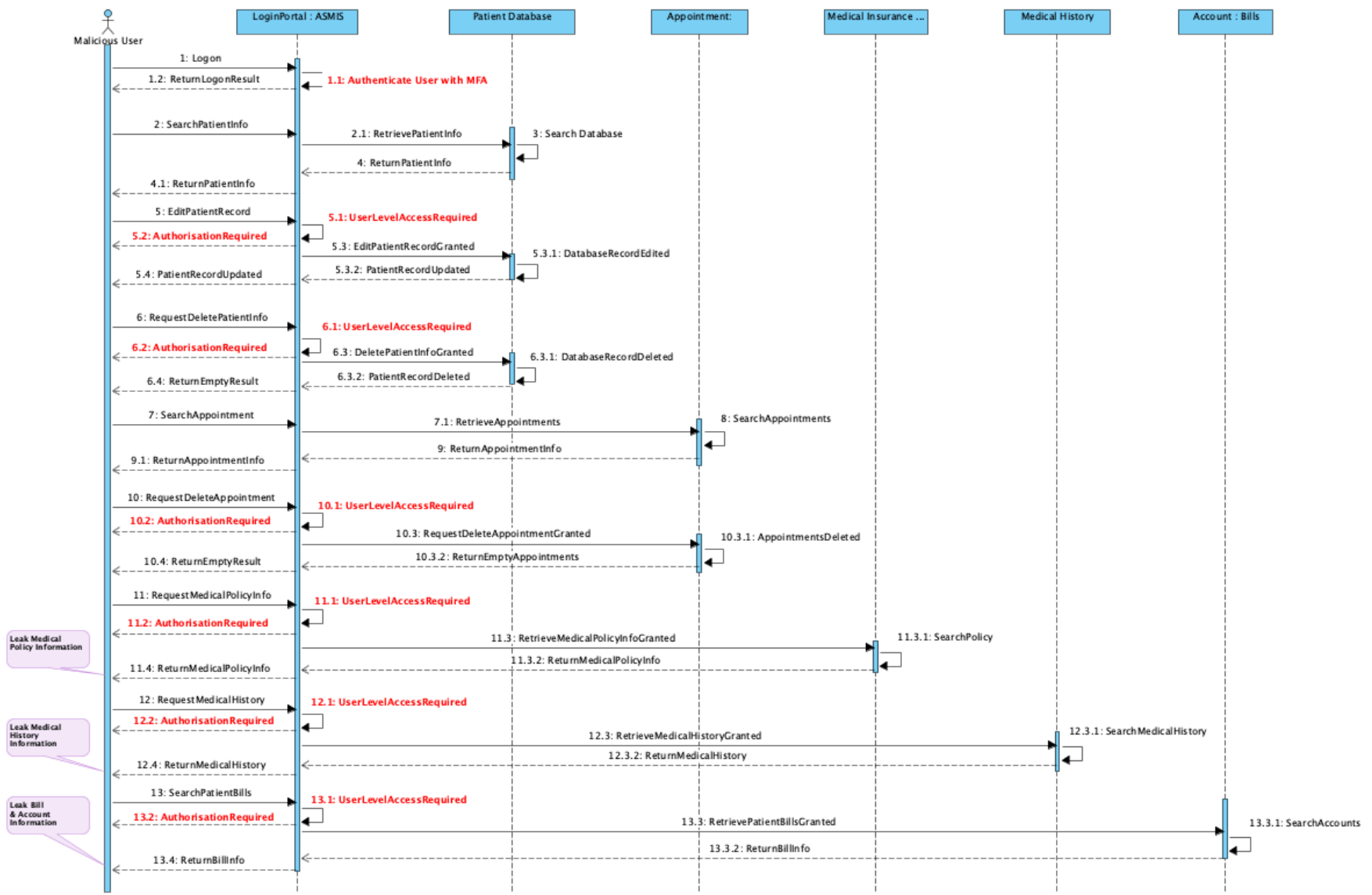


Figure 6: Malicious User - Sequence Diagram – ASMIS – With Inbuilt Security

Feedback from Tutor:

Feedback comments

Outline looks good. Just a few comments:

paragraph 2 - it's good to discuss the benefits and use the CIA to discuss the cyber security objectives. I am not sure why you want to discuss STRIDE and paragraph 2 and then in paragraph 3.

No need to spend a lot of time discussing UML diagrams in paragraph 3 as that is not the focus of the assignment. You could just mention it as modelling technique you are using and provide a reference.

Also, you may want to discuss how data will be generated and stored using the UML diagrams as discussed in the last seminar