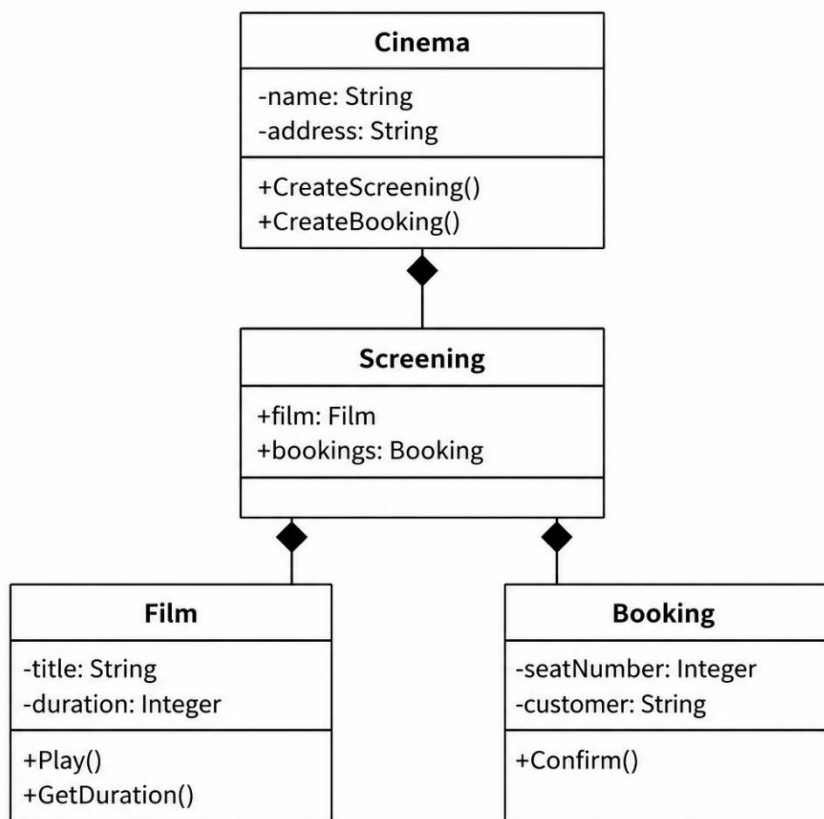




4.1.2 Programming Paradigms

- 1) The class diagram in **Figure 1** is a representation of relationships between some classes in a program.

Figure 1



- a) Write Yes or No in the cells in **Table 1** to identify if the given feature is present in the class diagram shown in **Figure 1**.

Table 1

Feature	Is present in Figure 1? (Yes/No)
Inheritance	
Protected method	
Private attribute	

[3 marks]





- b) Aggregation and composition are two of the types of relationship that can exist between classes.

Which of these two types of relationships is **not** shown in **Figure 1**?

[1 mark]

- c) Explain what the composition relationship between Cinema and Screening means.

[2 marks]

- d) Explain the difference between a protected attribute and a private attribute.

[2 marks]

- e) In the Film class there is an attribute duration and a method GetDuration.

Explain the need for the GetDuration method and explain why this approach is favoured in object-oriented programming.

[2 marks]

-
- 2) A structured programming approach can be used in the production of a program.

- a) Explain what is meant by a structured programming approach.

[2 marks]

- b) Explain **three** reasons for adopting the structured approach.

[3 marks]





3) In object-oriented programming:

a) What is meant by polymorphism?

[1 mark]

b) What is meant by overriding?

[1 mark]

c) When a derived class overrides a method from a base class, the base class method could be either a virtual method or an abstract method.

Describe **two** differences between a virtual method and an abstract method.

[2 marks]

