

REPORT

Q.5]

Using design patterns in the project enables flexibility in design and accommodating new features. I have used Abstract Factory pattern and Singleton pattern in the project as the design pattern to allow flexibility.

The Abstract Factory pattern provides an interface for creating instances of different Nodes. Depending upon the type of node, the instance of node type is created by using the methods of the factory. Such type of design pattern allows extension of the project to accommodate new classes or enhanced functionality by allowing the developer to add methods of creating new objects in the factory. If I had to add another type of node it would allow me to create its instance in the factory in an easy way.

Hence in this case, the abstract factory allows to create instances of different types of Statements or Expressions.

Apart from this, Singleton pattern has been used to enforce the rule that the factory is declared only once. Every declaration which uses factory to create new instances of different classes will now use the same instance of factory since factory should ideally be initialized only once.