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1.

ii. The advantages of using abstract classes in this program are that they allow us to define common behaviours and attributes among related classes while also providing the flexibility for individual classes to implement their unique behaviours. Abstract classes also allow for code reusability through inheritance, reducing the amount of duplicate code. However, the disadvantage is that a class can only inherit from one abstract class, limiting its flexibility to adapt to changes or add new features.

Using interfaces instead of abstract classes would allow for even greater flexibility as a class can implement multiple interfaces, providing a wider range of behaviours to be defined. However, interfaces do not allow for implementation of common behaviours, only declaration of methods that implementing classes must implement. This may result in duplicate code and a less organized structure if not properly implemented.

2.

ii.

3a.

i.

ii.

3b.

i.

ii.

iii.

4.

i.

ii.

iv.