Advanced Application Programming
Assignment 1
2003944 BSD
Wallace Otieno Wahong'o

Booker University library maintains an inventory of books. The list includes the details: Author, price, title,
book_number and number of copies of each book. Whenever new books are purchased the librarian adds the book
details into the database. The chief librarian occasionally requests for a list of all the books in the database.
Required
Construct a simple class called book with suitable data members and member functions to:-
(i) Insert a new book record into the database
(ii) Display a list of all books in the database
(iii) Write a main function to test the program

```
namespace Booker_library;

public class Book
{
    public string Author { get; set; }
    public double Price { get; set; }
    public string Title { get; set; }
    public string BookNumber { get; set; }
    public int NumberOfCopies { get; set; }

}

public class Library
{
    private List<Book> bookList = new List<Book>();

    public void AddBook(Book book)
    {
        bookList.Add(book);
    }

    public void DisplayBooks()
    {
        foreach (var book in bookList)
        {
            Console.WriteLine($"Author: {book.Author}, Price: {book.Price}, Title: {book.Title}, Book
Number: {book.BookNumber}, Number of Copies: {book.NumberOfCopies}");
        }
    }
}
```

```
class Program
{
    static void Main(string[] args)
    {
        Console.WriteLine("Hello, World!");

        Library library = new Library();

        library.AddBook(new Book { Author = "J.F Kennedy", Price = 10.0, Title = "Don't die on Job", BookNumber = "BN1", NumberOfCopies = 5 });
        library.AddBook(new Book { Author = "Wallace Wahongo", Price = 15.0, Title = "Introduction to Kotlin", BookNumber = "BN2", NumberOfCopies = 3 });

        library.DisplayBooks();
    }
}
```

Question 2 {10 Marks}

DT Dobie (K) Ltd sells a range of vehicles, including Mercedes and Nissan in the East African region. Vehicle sale
details include the Make (e.g. Nissan), Model (e.g. Sunny), Engine Number and Sale Price.
(i) Create a class vehicle that captures the above data using a function called set_vehicle()
(ii) The company makes a profit of 15% from the sale price for every vehicle. Create another function called
get_profit() which is still a member of the class vehicle to calculate and return the profit.
(iii) Implement (i) and (ii) using an object in the main() function to capture the vehicle details and display the profit.

```
namespace DT_Dobie;

public class Vehicle
{
    public string Make { get; private set; }
    public string Model { get; private set; }
    public string EngineNumber { get; private set; }
    public double SalePrice { get; private set; }

    public void SetVehicle(string make, string model, string engineNumber, double salePrice)
    {
        Make = make;
        Model = model;
        EngineNumber = engineNumber;
        SalePrice = salePrice;
    }

    public double GetProfit()
    {
        return SalePrice * 0.15;
    }
}

class Program
{
    static void Main(string[] args)
    {
        Vehicle vehicle = new Vehicle();
        vehicle.SetVehicle("Nissan", "Sunny", "EN123456", 20000.0);

        Console.WriteLine($"Profit from the sale of the vehicle: {vehicle.GetProfit()}");
    }
}
```