Exercise 2: E-commerce Platform Search Function:

using System;

namespace EcommerceSearchFactory

{

interface ISearch

{

void Search(string keyword);

}

class ProductSearch : ISearch

{

public void Search(string keyword)

{

Console.WriteLine($"Searching for products matching: {keyword}");

}

}

class CategorySearch : ISearch

{

public void Search(string keyword)

{

Console.WriteLine($"Searching for categories matching: {keyword}");

}

}

class BrandSearch : ISearch

{

public void Search(string keyword)

{

Console.WriteLine($"Searching for brands matching: {keyword}");

}

}

abstract class SearchEngine

{

public abstract ISearch CreateSearch();

public void PerformSearch(string keyword)

{

var search = CreateSearch();

search.Search(keyword);

}

}

class ProductSearchEngine : SearchEngine

{

public override ISearch CreateSearch()

{

return new ProductSearch();

}

}

class CategorySearchEngine : SearchEngine

{

public override ISearch CreateSearch()

{

return new CategorySearch();

}

}

class BrandSearchEngine : SearchEngine

{

public override ISearch CreateSearch()

{

return new BrandSearch();

}

}

class Program

{

static void Main(string[] args)

{

Console.WriteLine("Search type (product/category/brand):");

string type = Console.ReadLine() ?? string.Empty;

Console.WriteLine("Enter keyword to search:");

string keyword = Console.ReadLine() ?? string.Empty;

if (string.IsNullOrWhiteSpace(type) || string.IsNullOrWhiteSpace(keyword))

{

Console.WriteLine("Search type and keyword must not be empty.");

return;

}

SearchEngine engine;

switch (type.ToLower())

{

case "product":

engine = new ProductSearchEngine();

break;

case "category":

engine = new CategorySearchEngine();

break;

case "brand":

engine = new BrandSearchEngine();

break;

default:

Console.WriteLine("Invalid search type.");

return;

}

engine.PerformSearch(keyword);

}

}

}

OUTPUT:

