**Restorant - Exam 02.09.2018 – Solution**

**Program.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Restourant

{

class Program

{

static Fridge fridge = new Fridge();

static void Main(string[] args)

{

string line;

while ("END" != (line = Console.ReadLine()))

{

string[] cmdArgs = line.Split(' ');

switch (cmdArgs[0])

{

case "Add":

AddProduct(cmdArgs[1]);

break;

case "Check":

CheckProductIsInStock(cmdArgs[1]);

break;

case "Remove":

try

{

int index = int.Parse(cmdArgs[1]);

RemoveProductByIndex(index);

}

catch (FormatException e)

{

RemoveProductByName(cmdArgs[1]);

}

break;

case "Print":

ProvideInformationAboutAllProducts();

break;

case "Cook":

CookMeal(cmdArgs.Skip(1).ToArray());

break;

}

}

}

private static void CookMeal(string[] indexes)

{

string[] products = fridge.CookMeal(int.Parse(indexes[0]), int.Parse(indexes[1]));

Console.WriteLine("Meal cooked. Used Products: " + string.Join(", ", products));

}

private static void ProvideInformationAboutAllProducts()

{

string[] info = fridge.ProvideInformationAboutAllProducts();

foreach (var item in info)

{

Console.WriteLine(item);

}

}

private static void RemoveProductByName(string name)

{

string ProductName = fridge.RemoveProductByName(name);

if (ProductName != null)

{

Console.WriteLine("Removed: " + ProductName);

}

else

{

Console.WriteLine("Product not found!");

}

}

private static void RemoveProductByIndex(int index)

{

string ProductName = fridge.RemoveProductByIndex(index);

if (ProductName != null)

{

Console.WriteLine("Removed: " + ProductName);

}

else

{

Console.WriteLine("Product not found!");

}

}

private static void CheckProductIsInStock(string name)

{

bool isInStock = fridge.CheckProductIsInStock(name);

Console.WriteLine(isInStock ? $"Product {name} is in stock."

: "Not in stock");

}

private static void AddProduct(string name)

{

fridge.AddProduct(name);

}

}

}

**Product.cs**

namespace Restourant

{

class Product

{

public string Name { get; set; }

public Product Next { get; set; }

public Product(string name)

{

Name = name;

}

public override string ToString()

{

return $"Product {Name}";

}

}

}

**Fridge.cs**

using System;

using System.Collections.Generic;

namespace Restourant

{

class Fridge

{

private Product head;

private Product tail;

private int count;

public int Count

{ //TODO: Добавете вашия код тук …

get { return count; }

set { count = value; }

}

public Fridge()

{

head = null; //TODO

tail = null; //TODO

Count = 0;

}

public void AddProduct(string ProductName)

{ //TODO: Добавете вашия код тук …

var product = new Product(ProductName);

if (head == null)

{

head = tail = product;

}

else

{

tail.Next = product;

tail = product;

}

Count++;

}

public string[] CookMeal(int start, int end)

{ //TODO: Добавете вашия код тук …

int index = 0;

Product current = head;

while (index < start)

{

index++;

current = current.Next;

}

if (end > Count) end = Count;

var result = new List<string>();

for (int i = start; i < end; i++)

{

result.Add(current.Name);

current = current.Next;

}

return result.ToArray();

}

public string RemoveProductByIndex(int index)

{ //TODO: Добавете вашия код тук …

if (index >= Count || index < 0)

throw new InvalidOperationException();

int currInd = 0;

Product current = head;

Product prev = null;

while (currInd != index)

{

prev = current;

current = current.Next;

currInd++;

}

string removed = current.Name;

if (current == head)head = head.Next;

else prev.Next = current.Next;

if (current == tail) tail = prev;

//if (head == null) tail = null;

Count--;

return removed;

}

public string RemoveProductByName(string name)

{ //TODO: Добавете вашия код тук …

Product current = head;

int currInd = 0;

while (current != null && current.Name != name)

{

current = current.Next;

currInd++;

}

if (current == null) return null;

else return RemoveProductByIndex(currInd);

}

public bool CheckProductIsInStock(string name)

{ //TODO: Добавете вашия код тук …

Product current = head;

while (current != null)

{

if (current.Name == name)

{

return true;

}

current = current.Next;

}

return false;

}

public string[] ProvideInformationAboutAllProducts()

{ //TODO: Добавете вашия код тук …

var allProducts = new List<string>();

Product current = head;

while (current != null)

{

allProducts.Add(current.ToString());

current = current.Next;

}

return allProducts.ToArray();

}

}

}