**UNiDAYS Discounts Programming Challenge**

**Introduction**

This challenge is for you to make use of your problem solving skills as well as demonstrate your understanding of good object-oriented programming and SOLID design principles.

At UNiDAYS our business is built on providing discounts to students. Your challenge is to build a basic discount system that applies discounts to an online shopping order and calculates the total price based on a set of pricing rules.

You may complete the challenge in any programming language you wish.

## Pricing Rules

|  |  |  |
| --- | --- | --- |
| **Item** | **Price** | **Discount** |
| A | £8.00 | None |
| B | £12.00 | 2 for £20.00 |
| C | £4.00 | 3 for £10.00 |
| D | £7.00 | Buy 1 get 1 free |
| E | £5.00 | 3 for the price of 2 |

**Delivery Charges**

Delivery charge £7.00

Free delivery on orders over £50.00 (inclusive)

**Interface**

Implement a `UnidaysDiscountChallenge` class with two public methods.

1. `AddToBasket` - Pass in an item

2. `CalculateTotalPrice` - Calculate and return the total price, result should include the following

- `Total` - Total price of all items after applying any discounts

- `DeliveryCharge` - The delivery charge for the order

It should be possible to initialise your `UnidaysDiscountChallenge` class with the pricing rules. The example below shows how the interface might be used.

example = new UnidaysDiscountChallenge(pricingRules);

example.AddToBasket(itemOne);

example.AddToBasket(itemTwo);

result = example.CalculateTotalPrice();

totalPrice = result.Total;

deliveryCharge = result.DeliveryCharge;

overallTotal = totalPrice + deliveryCharge;

## Example Test Cases

|  |  |  |
| --- | --- | --- |
| **Items** | **Total** | **Delivery Charge** |
| \_None\_ | £0.00 | £0.00 |
| A | £8.00 | £7.00 |
| B | £12.00 | £7.00 |
| C | £4.00 | £7.00 |
| D | £7.00 | £7.00 |
| E | £5.00 | £7.00 |
| BB | £20.00 | £7.00 |
| BBB | £32.00 | £7.00 |
| BBBB | £40.00 | £7.00 |
| CCC | £10.00 | £7.00 |
| CCCC | £14.00 | £7.00 |
| DD | £7.00 | £7.00 |
| DDD | £14.00 | £7.00 |
| EE | £10.00 | £7.00 |
| EEE | £10.00 | £7.00 |
| EEEE | £15.00 | £7.00 |
| DDDDDDDDDDDDDD | £49.00 | £7.00 |
| BBBBCCC | £50.00 | £0.00 |
| ABBCCCDDEE | £55.00 | £0.00 |
| EDCBAEDCBC | £55.00 | £0.00 |

**Deliverables**

You should provide a copy of your code and include a readme detailing how to run your code as well as how you approached the problem.

Please supply us with the URL to your solution as part of your application - you may choose to host your solution however you like, so long as we are able to access it.

We're not too fussy about what platform your program runs on, but we do require that we're able to build and run your code ourselves.