**.Net Assessment**

Guidelines:

*Use each question as an opportunity to showcase your .NET skills. Describe in the way you think can best explain the question and concept behind it. Use diagram or code snippet examples wherever possible. Don’t spend more than 45 minutes on below 10 questions.*

1. Choose the correct statement among the followings?
2. Indexers are location indicators
3. Indexers are used to access class objects
4. Indexer is a form of property and works in the same way as a property
5. All of the mentioned
6. Choose the operator/operators which is/are not used to access the [] operator in indexers?
   1. get
   2. set
   3. access
   4. all of the mentioned
7. What will be the output of the following C# code snippet?

**class** Program

{

**static** **void** Main(**string**[] args)

{

**int**[] nums = { 1, -2, 3, 0, -4, 5 };

**var** posNums = nums.**Where**(n => n > 0).**Select**(r => r\*2).

OrderByDescending(r=>r);

Console.Write("The positive values in nums: ");

**foreach**(**int** i **in** posNums)

Console.Write(i + " ");

}

}

1. code run successfully prints nothing
2. run time error
3. code run successfully prints multiple of 2
4. compile time error
5. What is Predicate and Func ?

Func takes input parameters and return a value with its out parameter.

Predicate is special type of function that execute and condition and return bool value.

1. What will be output of the following program

|  |
| --- |
| public class A  {  static A()  {  Console.WriteLine("Static A Printed");  }  public A()  {  Console.WriteLine("Public A Printed");  }  }  public class B : A  {  static B()  {  Console.WriteLine("Static B Printed");  }  public B()  {  Console.WriteLine("Public B Printed");  }  }  static void Main(string[] args)  {  B objB = new B();  } |
|  |

Static B Printed

Static A Printed

Public A Printed

Public B Printed

1. What is API versioning?

The API versioning are done to achieve different responses for respective client .This can be achieve by modified URL, Header etc.

1. What are filters in MVC?

Authorization filters, Action filters, Result filters, Exception filters

1. Differences between Abstract class and Interface

Abstract class can contain static members but Interface is not, Interface are used to achieve multiple inheritance where abstract class not, Abstract may use public, private protected access modifiers while interface are by default public and only uses public access modifier.

1. What does yield keyword do in C#

Yield generally use in case of iterator which return one member at a time.

1. Write a Linq query to get only Jesper Name using Linq

var students = new List<Student>() {

new Student(){ Id = 1, Name="Jesper"},

new Student(){ Id = 2, Name="Steve"},

new Student(){ Id = 3, Name="Jesper"},

new Student(){ Id = 4, Name="Abdul"}

};

Student Class: -

internal class Student

{

public int Id { get; set; }

public string Name { get; set; }

}

students.Where(i => i.Name == "Jesper").FirstOrDefault().Name

**.Net Coding Assessment**

*Generic guidelines*

***Should be written in .Net***

*Use Object Oriented Programming approach to solve the problem*

*Use DRY (Don’t Repeat Yourself) Principle and Clean code practices*

*Commit your code to your Git repo.*

*Commits should be incremental with adequate and descriptive comments.*

*Don’t spend more than 1.5 hours to 2 hours of time on coding assessments.*

**Problem Statement1: Promotion Engine**

We need you to implement a simple promotion engine for Checkout process. Our Cart contains a list of single character SKU ids (A, B, C, ...) over which the promotion engine will need to run.

The promotion engine will need to calculate the total order value after applying the 2 promotion types.

Buy "n" items of SKU for fixed price (3A's for 130)

Buy SKU 2 and SKU 2 for fixed price (C+D = 30)

The promotion engine should be modular to allow more promotion types to be added at a later date (For example a future promotion could be x% of a SKU unit price). For this coding exercise you can assume that promotions will be mutually exclusive, that if one promotion is applied, the other promotions will not apply.

**Test Set Up**

Unit Price for SK IDs

A 50

B 30

C 20

D 15

**Active Promotions**

3 of A's for 130

2 of B's for 45

C & D for 30

**Scenario A**

1 \* A = 50

1 \* B = 30

1 \* C = 20

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Total = 100

**Scenario B**

5\* A 130 + 2\*50

5 \* B 45+45+30

1 \* C 20

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Total = 370

**Scenario C**

3 \* A 130

15\* B 45+45+1\*30

1 \* C -

1 \* D 30

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Total = 280

**Problem Statement2. Business Rule Engine**

Imagine you are writing an order processing application for a large company. In the past, this company used a random mixture of manual and ad-hoc automated business practices to handle orders.

They now want to pull all these various was of handling orders together into one whole: your applications.

After a full day of workshops, you have gathered the following set of rules which need to be managed by the new system.

* If the payment is for a physical Product, generate a packing slip for shipping,
* If the payment is for a book, create a duplicate packing slips for the royalty department.
* If the payment is for a membership, activate that membership,
* If the payment is for an upgrade to a membership, apply the upgrade,
* If the payment is for a membership or upgrade, e-mail the owner and inform them of the activation/upgrade.
* If the payment is for the video "Learning to Ski", add free "First Aid" video to the packing slip (the result of a court decision in 1997),
* If the payment is for a physical product or a book, generate a commission payment to the agent.

Design a new system which can handle these rules and yet open to extension to new rules.