1. Create a .net project called ‘Employee" that would compile to a .dll

Create a class called Student with the following : (12)

Properties int empID ---> validation : must be >0

string empName ---> validation : no blank strings allowed

Float salary ---> validation : must be between 10000 and 1000000, both numbers included

If validation is not successful, throw an Exception with a message

Overloaded constructors to accept all parameters (constructors with 3,2,1,0 parameters)

1. Create a Console Application called "TestStudentService".

Write code in Main() for the following

* Add a service reference to the MyWCFService and consume the GetStudents method. (6)
* Write Linq queries for the object created in the earlier step as follows (6)

--- To sort the students based on Marks (highest first) and display them

--- To filter those students who have passed (Passing marks are 40) and display them.

3. Create the following Tables in a Sql Server Database

**Table Name -> Students**

StudentId int (Primary Key)

Name varchar(50)

JavaMarks int

DotNetMarks int

Q1. Create a Class Library which contains the following classes

**Class Name -> Student Properties**

|  |  |
| --- | --- |
| StudentId | int |
| Name | string |
| JavaMarks | int |

DotNetMarks int

Q2. Create a WCF Service that uses (add a reference) the above Class Library.

Create the following methods in the WCF Service

* Student GetStudent(int StudentId); //returns a single Student object
* List<Student> GetStudents() //returns a collection of Student objects
* void Add(Student obj) //adds a Student record to the database
* void Update(Student obj) //updates a Student record in the database
* void Delete(int StudentId) //deletes a Student record from the database

-

Write code for the above methods which uses the Students table from your Database.

Use Stored Procedures for all database interaction

Q3. Create an Asp.Net Mvc application which uses (add a reference) the Class Library described in Q1.

Create strongly typed Views for the following operations

Display all Students

Display a Single Student

Add a Student

Update a Student

Delete a Student

In the controller, call the methods of the WCF service either receiving data or passing data.

#########################################################################

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Lab Test (20 marks) (Time 60 mins)

Create a WPF project

1. Create a class called Student with the following :

Properties int RollNo ---> validation is must be >0 string Name ---> validation is no blank strings allowed short Marks ---> validation is must be between 0 and 100, both numbers included

If any validation is not successful, throw an Exception with a message

1. Create a UI to accept student details ( one Label and one TextBox for each Property)

Create a Button which displays "Save to Object". On clicking the button the details from the textbox should be saved to an object of type Student. If there are any exceptions thrown, catch the exception and display the error message in another label.

Create a Button which displays "Save to Database". On clicking the button the details from the textbox should be saved to a table Student. Create the required Database and Table for storing the Student Details. If there are any exceptions thrown, catch the exception and display the error message in another label.

1. Which of the following statements is correct
   * 1. C# data type bool - CTS type Boolean, C# data type float – CTS type Float
     2. C# data type bool - CTS type Bool, C# data type float – CTS type Float
     3. C# data type bool - CTS type Boolean, C# data type float – CTS type Single
     4. C# data type bool - CTS type Bool, C# data type float – CTS type Single
2. Which of the following statements is false?
   * 1. Assembly metadata can be read using Reflection
     2. Assembly is in IL form
     3. Assembly contains metadata and code
     4. Assembly can have attributes
     5. All of the above
     6. None of the above
3. The default data type of an enum is
   * 1. **Int32**
     2. Int 16
     3. Int64
     4. String
4. To make an assembly shared, we need to …
   * 1. Give it a strong name
     2. Sign it with a key pair
     3. Install it in the GAC
     4. **All of the above**
     5. None of the above
5. i)Storing a value type into a reference type results in Boxing ii)Storing a reference type into a value type results in Boxing iii) Storing a value type into a reference type results in UnBoxing iv) Storing a reference type into a value type results in UnBoxing
   * 1. All are false
     2. All are true
     3. i)and iii) are true
     4. ii)and iv) are true
     5. **i)and iv) are true**
     6. i)and ii) are true
6. Which of the following statements is false?
   * 1. All Generic Collections implement IEnumerable<T>
     2. IList<T> inherits from ICollection<T>
     3. IDictionary inherits from ICollection
     4. ICollection inherits from IEnumerable
     5. **None of the above**
7. To call a method asynchronously using a delegate object, we use
   * 1. objDel.Invoke(…)
     2. **objDel.BeginInvoke(…)**
     3. objDel.EndInvoke(…)
     4. D. System.Delegate.InvokeAsync(…)
8. What is the error in the following snippet? void DoSomething()

{ try

{

…..

}

catch(Exception ex) { … } catch(NullReferenceException ex) { … } catch(DivideByZeroException ex) { … }

}

* + 1. No finally written
    2. No errors
    3. ex object is re-declared multiple times
    4. **Base class exception is given first**

1. Which property must be set in WCF Configuration to allow users to see Exception Details of a WCF Methods?
   * + 1. serviceDebug allowExceptions
       2. serviceDebug includeExceptionDetailInFaults
       3. serviceDebug includeCustomExceptionDetails
       4. serviceMetadata includeCustomExceptionDetails
2. To raise an event defined by you,

A. RaiseEvent EventName

* + 1. **RaiseEvent EventName(…)**
    2. EventName(…)
    3. DelegateClassName(…)

1. Which of the following is not a valid Thread state as defined in the ThreadState enum?
   * 1. Aborted
     2. Running
     3. **Stopped**
     4. Sleep
     5. Suspended
     6. Background
2. What is true for a background thread?
   * 1. Background thread cannot be called directly
     2. Background thread gets a lesser priority
     3. Background thread is Unmanaged code
     4. Background thread runs only when the CPU is idle
     5. All of the above
     6. None of the above
3. What is the difference between out and reF variables?
   * 1. out variables can’t change the calling code variable value but ref can
     2. out variables can change the calling code variable value but ref can’t
     3. **out variables must be initialized before the function ends. Not required for ref variables**
     4. out variables can’t be used for reference types but ref can.
     5. None of the above
4. What is false for a static constructor?
   * 1. Parameterless
     2. Cant be overloaded
     3. Implicitly private
     4. Called when the class is loaded into memory
     5. Called just once
     6. **None of the above**
5. For property accessors, which of the following is not allowed?
   * 1. Public property, private accessor
     2. Protected internal property, private accessor
     3. Protected property, internal accessor
     4. Internal property, private accessor
6. Which class can be used as a base class?
   * 1. **Abstract**
     2. Sealed
     3. Static
     4. internal class defined in another assembly
7. Which of the following statements is false?
   * 1. **An abstract class has at least one abstract method**
     2. All abstract methods are pure virtual functions
     3. An abstract method can only exist in an abstract class
     4. The derived class must implement all the abstract methods or be marked as an abstract class
     5. All of the above
     6. None of the above
8. int ? a = 100;

What is false for this statement?

* + 1. a is a nullable type variable
    2. Compiler converts this to Nullable<int> a = 100?
    3. **This line is an error**
    4. a = null is valid.

1. What is false?
   * 1. All Arrays inherit from the Array class
     2. We can iterate using a foreach loop
     3. Arrays are a reference type
     4. **Double dimension arrays can be sorted using Array.Sort**
2. Which is not valid LINQ?

i) from a in b where a.i > 0 select a.j ii) b.Select(a=>a.j).Where(a=>a.i>0) iii) b.Where(a=>a.i>0). Select(a=>a.j)

* + 1. Only i
    2. Only ii
    3. Only iii
    4. ii and iii

1. In FormsAuthentication, the following method deletes the authentication cookie.
   1. FormsAuthentication.Cookie.Delete
   2. FormsAuthentication.Logout
   3. FormsAuthentication.SignOut
   4. FormsAuthentication.Cookie.Remove
2. Which of these is available in a Redirect but not in subsequent requests?
   1. ViewBag
   2. ViewData
   3. **TempData**
   4. Session variable
3. How do you override the bundling setting of web.config?
   1. **write code in BundleConfig.cs and set the EnableOptimizations property of the BundleTable class**
   2. write code in BundleConfig.config and set the EnableOptimizations property of the

BundleTable class

* 1. write code in BundleConfig.cs and set the EnableOptimizations property of the

BundleCollection class

* 1. write code in BundleConfig.config and set the EnableOptimizations property of theBundleCollection class

1. To achieve Minification in asp.net mvc
   1. Set minification = true in compilation section in web.config
   2. Set minification = false in compilation section in web.config
   3. **Set debug = true in compilation section in web.config**
   4. Set debug = false in compilation section in web.config
2. To show a partial view in asp.net mvc with a method that returns a html string we use

**a. Html.Partial()**

* 1. Html.RenderPartial()
  2. Html.RenderAction()
  3. Html.RenderView()

1. To allow a method to be called from a Webservice, do the following
2. Keep it as a public method
3. Keep it as a public static method
4. **Keep it as a public method with a WebMethod attribute**
5. Keep it as a public static method with a WebMethod attribute

27. Which class do we inherit from while interacting with the Entity Framework

1. Entity
2. Framework
3. **DbContext**
4. DataContext

28. Which of the following statements is true?

1. A command can be executed from a closed connection
2. **A Datareader cannot contain more than one set of data**
3. A DataSet can only have one dataTable
4. A DataAdapter need not have an open connection to call its fill method

29. What does the SoapFormatter serialize

1. methods of a class
2. **public variables and properties of a class**
3. public and private variables of a class
4. public and private properties of a class

30. To add a Primary key constraint on the DataTable

1. pass a DataColumn array object to the PrimaryKey property for the DataSet
2. pass a DataColumn object to the PrimaryKey property for the DataSet
3. pass a DataColumn array object to the PrimaryKey property for the DataTable
4. pass a DataColumn object to the PrimaryKey property for the Datatable(This property is used to define the Primary Key columns in the DataTable.)

31. To see records from a DataTable in a sorted manner use…

1. Sort property of DataTable
2. Sort property of DataView (.Sort = "Col\_name". By default, this method sorts the datatable in ascending order)
3. Sort property of DataSet
4. Sort property of DataColumn

32. How do you run a method in a new thread

a. Create a thread object and pass a method as a parameter to the constructor b. call thread.Run()

1. **call thread.Start()**
2. call thread.BeginInvoke()

33. Which of these provides a read only, forward only way of reading records a. DataTable

1. DataView
2. DataSet
3. **SqlDataReader**

34. Which of these does not require typecasting while accessing it

1. **ViewBag**
2. ViewData
3. TempData
4. Session variable

35. Which method of the DataSet returns the records whose RowState is not Unchanged a. AcceptChanges

1. RejectChanges
2. GetChanges
3. **Update**

36. In a WCF service the following describes the WCF service in detail

1. Proxy Class
2. WSDL (WCF supports publishing service metadata using formats specified in industry standards such as WSDL, XML Schema and WS-Policy. This metadata can be used to automatically generate and configure clients for accessing WCF services. Metadata can be published over HTTP and HTTPS )
3. Mex endpoint
4. Disco file

37. What attribute is used to mark a method in a ServiceContract?

1. ServiceContract
2. DataContract
3. DataMember
4. **OperationContact**

38. Duplex WCF service uses the following binding

1. WsDuplexHttpBinding
2. **WsDualHttpBinding**
3. WebHttpBinding
4. BasicHttpBinding

39. To add a new row to a Datatable …

1. call the Add method of the Rows collection of the DataSet
2. call the Add method of the DataTable
3. **call the Add method of the Rows collection of the DataTable**
4. call the Add method of the DataSet

40. Restful WCF service uses the following binding

1. WsDuplexHttpBinding
2. WsDualHttpBinding
3. **WebHttpBinding**
4. BasicHttpBinding

1. Which is the default base class for all classes?

1. System.object
2. System.Object
3. SystemObject
4. ObjectSystem

2. How do you specify that a class cannot be used as a base class?

1. mark it as a struct( struct class MyClass{})
2. change its access specifier from public to any other access specifier( internal class MyClass{})
3. make it abstract ( abstract class MyClass{])
4. make it sealed ( sealed class MyClass{})

3. This is the correct syntax for overloading the + operator for MyClass and a int

1. public MyClass operator+(int a){...}
2. public static MyClass operator+(int a){...}
3. public MyClass operator+(MyClass x,int a){...}
4. public static MyClass operator+(MyClass x,int a){...}

4. This is the correct symtax for writing an extension method for a string

1. public void DoSomething(string a){...}
2. public IExtension void DoSomething(string a){...}
3. public static void DoSomething(string a){...}
4. public static void DoSomething(this string a){...}

5. What does Array.IndexOf() return if the item being searched is not found?

1. null
2. error
3. Index of the last item + 1
4. -1

6. Give the CTS type for float

1. System.Float
2. System.Decimal
3. System.Single
4. System.Double

7. char variables occupy \_\_\_ bytes

1. 1
2. 2
3. 0
4. 4

8. What is the correct syntax for a lambda that takes no parameters and has multiple line of code a. ()=>{code}

1. => code
2. delegate(){}d Not possible to do so

9. For a class to be serialized using the BinaryFormatter,

1. The class needs to be marked with an attribute ISerializable
2. The assembly needs to be marked with an attribute ISerializable
3. The class needs to be marked with an attribute Serializable
4. The assembly needs to be marked with an attribute Serializable

10. Which of these is correct for the explicit implementation of an interface?

1. public void Method1(){}
2. void Method1(){}
3. public void InterfaceName.Method1(){}
4. void InterfaceName.Method1(){}

11. How do you declare a nullable int?

1. Nullable int a;
2. int a = null;
3. int? a;
4. int?? a;

12. Which interface does ArrayList implement?

1. IList
2. IList<T>
3. IDictionary
4. IDictionary<TKey,TValue>

13. Which of these is the correct syntax for an object initializer?

1. Class1 o = new Class1{a=10};
2. Class1 o = new Class1(){a=10};
3. Class1 o = new Class1(20){a=10};
4. All of the above

14. How do you call a function using ThreadPool?

1. Start
2. Begin
3. Invoke
4. QueueUserWorkItem

15. Which of the following statements is false? A. A struct does not allow inheritance.

1. A struct cannot have a no parameter constructor
2. A struct is a value type
3. A struct is stored on the stack in memory.
4. A struct cannot have methods.

16. In FormsAuthentication, the following method deletes the authentication cookie.

A. FormsAuthentication.Cookie.Delete

B FormsAuthentication.Logout

1. FormsAuthentication.SignOut
2. FormsAuthentication.Cookie.Remove

17. To generate a proxy class for a WCF service we use the following command line utility a. genprox

1. svcutil
2. wsdl
3. csc

18. How do you override the bundling setting of web.config?

1. write code in BundleConfig.cs and set the EnableOptimizations property of the BundleTable class
2. write code in BundleConfig.config and set the EnableOptimizations property of the BundleTableclass
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4. Set debug = false in compilation section in web.config

20. To show a partial view in asp.net mvc with a method that returns a html string we use

a. Html.Partial() (**@Html.Partial**

This method renders the view as an HTML-encoded string. We can store the method result in a string variable

1. Html.RenderPartial()
2. Html.RenderAction()
3. Html.RenderView()