Interview Questions

R Systems Telephonic Interview Questions:

1. 3 Bulb – 3 Switch problem.
2. What is the difference between abstract class and interface? In which scenario they are used.
3. What is static constructor and why it is used.
4. A class implements two interfaces I1 and I2 have same method named X. How to call this method without using explicit implementation of interfaces?
5. What is delegate and what is the main use of it.
6. What is event and what is the main advantage of it over delegate.
7. What is multicast delegate.
8. What happen if any method referenced in multicast delegate have exception? Will this method be skipped or not (asked the reason)?
9. If a multicast delegate has 10 methods referenced, in what order they will be called.
10. How to call a particular method from a multicast delegate?
11. If we need to perform 3 kind of sorting based on some scenario, which design pattern is suitable for this.
12. What is the difference between abstract method and virtual method.

CVent Telephonic Interview Questions:

1. What is the difference between abstraction and interface.
2. What is static class and what is the purpose to use it.
3. What is static variable and is it shared across all the class instances.
4. What are various synchronization techniques in multi-threading. Like Lock, Monitor, Mutex, AutoresetEvent and ManualResetEvent.
5. What is read-write lock in C# and how it works.
6. How to optimize SQL queries.
7. Does Index always improve the performance . Discuss the scenario where it degrade the performance.
8. Discuss locking in database. At what level Update lock is applied (table or Row).
9. What is caching in ASP.Net and at which level you applied it in your project (Browser level or application level).
10. Discuss the structure of Cache class in your project.

Ciena Telephonic Interview Questions:

1. What is the difference between ByVal and ByRef.
2. If we have an object suppose obj and we pass obj.Name as argument in a method. If we change the value obj.Name inside the method. What will be the value of obj.Name outside the method.
3. What is INotifyPropertyChanged in WPF and explain its method.
4. Suppose we want to update the value on UI continuously, How we will do it in WPF.

RBS Face to Face Interview Questions:

Level 1:

1. What are the various ways to create threads. (ThreadPool, Thread Class and TPL).
2. What is the difference between StackOverFlowException and OutOfMemoryException.
3. What is the Type of Int32 and String.
4. Boxing and Unboxing.
5. Upcasting and Downcasting.
6. Delegate.BeginInvoke(...) : Does it works Synchronously or asynchronously.
7. What are the various methods in System.Object class and what are the method which are virtual in System.Object class.
8. What is GetHashCode().

Level 2: Case Study

Cache class implementation : Thread safe Singleton

Level 3:

1. What is Monitor, Mutex, AutoresetEvent, ManualResetEvent.
2. What is SingleThreadApartment(STA)/MultiThreadApartment(MTAt.
3. Question related to the Case study.
4. What is dependency property. What are the advantages of DP over normal CLR property.
5. What is Dispatcher.
6. Explain architecture of your current project in nagarro.

Carzonrent Telephonic Interview Questions:

1. Describe your project and its architecture.
2. What is the difference between RDBMS and File based system.
3. What is the difference between MVC, MVVM and MVP.
4. What is Model First Approach.
5. What is sharding

Sharding : With most huge systems, data does not fit on a single machine. In such cases, sharding refers to splitting the very large database into smaller, faster and more manageable parts called data shards.

6. What is Multi Tier architecture.
7. What is the difference between SOA and Rest.
8. If an application have db scattered across 16 machine and application at one machine, how many tier architecture it is. 2 or 17.

Sapient Interview Questions:

Case Study:

Write a WPF application for Medicine Tracking System.

Face to Face:

1. What CanExecute Event does in ICommand.
2. What is the base class of viewmodel class.
3. How Multi Value Converter works.
4. What is custom control. In what scenario it is used.
5. How to decide which need to be used user control or custom control.
5. What features of prism is used in MVVM.
6. If a wpf application have multiple tabs, means all tabs have different view models, if something changes in one tab, how to refresh another tabs too.
7. What is dispatcher.
8. Can we use multiple dispatcher in wpf application.
9. What is Dispatcher.CurrentDispatcher.
10. How a thread can update control in background.
11. What is IDisposable and why GC.SuppressFinalize(true) is done with in dispose method.
12. What is virtualization in wpf. 13. How we create Custom controls in wpf. 14. What is memory leaks. 15. Have you used memory profiler.
16. What is GOF.
17. What are design patterns you used by your own.
18. Tell the use case where singleton is used without making it static.
19. What are the SOLID principle.
20. In Liskov Substitution, how it is different from simple Inheritance implementation.
21. Are events loosely coupled or tightly coupled.
22. An application should be tight couple or loose coupled.
22. How we can achieve synchronization in multithreaded application.
23. If we perform locking in a Recursive method without unlocking, will it cause deadlock.
24. Have you done CI ever.
25. What is code coverage.
26. What unit testing framework you worked upon.

1E Noida

1. What is the difference between ref type and value type.
2. What is delegate and how it is represented in DLL.
3. What is the basic difference between event and delegate.
4. How garbage collector works.
5. What is IDisposable interface and why it is used.
6. What is LINQ and on what kind of data (collection)it works.
7. What is yield return keyword.
8. If we have two objects of same class let say obj1 and obj2. What will be the output for obj1==obj2.
9. If we pass an object as method parameter and make some changes in object (passed as parameter). Will it make the changes in original object or not.
10. If we have an array of negative and positive numbers. Sort it in such a way that all positive number are at on side and negative are at another side.

SAXO BANK Gurgaon

1. What is delegate.
2. What is need of delegate if we can directly use functions.

3. What is Non Clustered index.
4. What is REST and SOAP.
5. On what design patterns you have worked.
6. Explain prototype design pattern.

KLA-Tencor Chennai

1. Arrange all jumbled paper in ascending order in a stack. All paper are of rectangular shape.
2. If we have a dictionary, how we can get elements from dictionary without typecasting it.
3. What is memory leak. How Garbage collector reclaims the memory.
4. On what ground, GC determine that an object is suitable for garbage collection.
5. What is Reader Writer Problem.
6. When application starts, in which thread it executes.
7. Discussion about Dispatcher Queue.
8. What is the difference between Finalize and Dispose.
9. Design a class for File System/Excel Sheet in Windows. Also, write its class diagram by showing relationship among various classes.
10. Suppose we have two processor inside a system. Both processor share a common memory. How we can achieve full duplex and non-interrupt communication between the two.

Broctagon FinTech Noida

1. What is the difference between value type and reference type.
2. Tell me the exact scenario where I have to use Interface not the abstract class.
3. If we return from catch block, will finally execute?
4. What are the advantages of WPF over Winforms.
5. How View communicates with model data in WPF.
6. If we have two threads running in parallel, how they will communicates with each other.
7. What is TPL and how two tasks communicates.
8. How we can achieve validation in WPF?

Virtusa –Polaris Gurgaon

Round 1:

1. What is the life cycle of Winform.
2. What is the life cycle of Thread.
3. How Garbage collector works.
4. What is interface and how to declare it.
5. Can we have multiple inheritance in C#.
6. What is lambda expression.
7. What is delegate and give an example to use lambda expression with delegate.
8. What are various kind of Joins.
9. What is cross join.
10. What is Stored Procedure and how it is different from User defined function.
11. What are various synchronization constructs.
12. What is constructor and explains various constructor types.

13. What is Copy constructor.
14. What are the indexes, its types and also their count.
15. What is WCF service and what are its advantages.

Round 2:

1. What is Intelligent Polymorphism.
2. Can we create a class having all methods virtual rather than making them abstract.
3. What is Web Api and how to create it.
4. What are the verbs in WebApi.
5. What is the difference between Task and Thread.
6. What APIs, you have used for Task.
7. What design patterns you have used.
8. Explain CoR Design pattern, In what scenario you used it.
9. Which Unit Testing & Mocking framework you have worked upon.
10. What is mocking and in which scenario you use it.
11. What is composite queries in sql.

Pramati Technologies Hyderabad

Telephonic:

1. What is MVVM.
2. If we have a datagrid which display a large number of records. How we can improve the performance.(Ans: Virtualization)

Coding Assignment:

1. Create a user control and a custom control to display flight status info in header (User Control) and Flight status like in metro display and also a button when we click on it, an aeroplane like arrow move from one position to another.

Technical Round:

1. Explain assignment.
2. Why to use INotifyPropertyChanged.
3. How to consume a service using Dependency injection in wpf application.
4. What is dependency injection..
5. What hurdles you had while designing a custom control.
6. If we have a service and there value is changing repeatedly, how you will fetch and update it on UI in WPF application.
7. If we wants to give filtering in a datagrid, how we can do it, Also shall we have to update the column.
8. Have you ever created custom control.
9. If we have two view each in different modules and if a value in one view changed, how you will update in another view available in another module using Prism Framework.(Ans: Eventaggregator).
10. What is Extension Methods.Why we create them.
11. Can we have extension method in static classes.
12. Suppose we have school , class, section and student tables. Write an sql query to select a school with class name and section name having students count greater than 50.

13. What is the difference between dataset and datareader and which one is faster.
14. What is abstract class.
15. What is non-clustered index.
16. What is private constructor and why we use it.
17. Why we use static constructor.
18. Have you worked with EF.

Nicole Infosoft, GGN

1. What is difference between DataSet, datareader and datatable.
2. What is Boxing and Unboxing. Explain their role in memory allocation.
3. What is trigger in SQL Server.
4. What are the advantages of WPF over Winforms.
5. Can we use update query inside a view.
6. Suppose we have two table names as TableA (ID, Name, Gender) and TableB (ID, Name, Gender). TableA have data as ({1, Sachin, Male},{2, Himanshu, Male},{3, --, Female}) also TableB have data as ({1, Sachin, Male},{2, Himanshu, Male},{3, Rekha, Female}). Write a query to update the blank field in TableA.

Ciena Gurgaon

Round 1: Telephonic

1. What is the difference between static and private constructor.
2. What is static class.
3. If a base class and child class both have static constructor. So when we create instance of child, in which order both constructor will be called.
4. Why we use static constructor.
5. Can static constructor have parameter.
6. What is parameterized constructor.
7. What is LINQ.
8. On which type of data we use linq.
9. How garbage collector works. Explain Generations concept.
10. What is delegate. How it works.
11. What are the readymade delegates available in .net.

Round 2: Telephonic

1. What is CTS in .Net?
2. What is Garbage collector and how it works.Explain it with the generation.
3. On which datatype, GC works.
4. What is runtime polymorphism and how it is different with static polymorphism.
5. What is method hiding and method overriding.
6. Explain the members of ICommand.
7. Explain the members of INotifyChanged.
8. How it notify to the UI that it should update itself.
9. Who is publisher and subscriber when NotifyProperty changed event fired.
10. On UI, what is the keyword which identify that NotifyPropertychanged event fired.
11. Explain the design patterns you worked upon.

12. Explain Factory design pattern.
13. Explain Singleton design pattern and how it is different with Static class.
14. As I told him that Singleton maintain object lifespan and state, than he also asked what is the meaning of state.

Miscellaneous Question

1. Solid principles
2. "Is a" VS "Has a"
3. Association, aggregation vs composition
4. What are attached properties
5. What are dependency properties
6. What is the difference between attached and dependance.
7. What is the difference between custom control and user control
8. What the types of bindings
9. how to bind view and viewmodel
10. What are the 3rd party assemblies to bind view and viewmodel
11. What are static and dynamic resources in WPF
12. How to merge resource in WPF
13. What are contents of ICommand interface.

SAPIENT GURGAON

1. How to Inject dependency using Prism's Unity container.
2. How to inject constructor dependency using XAML.

https://channel9.msdn.com/Blogs/SlickThought/Simple-Dependency-Injection-with-XAML

3. How to communicate between two viewmodels.
4. How eventaggregator works in WPF. Explain step by step.
5. What are the design patterns and explain difference between Creational, Structural and Behavioural DPs.
6. Tell about at least two DPs from each categories.
7. Explain step by step the class structure of Singleton DP.
8. Why we have instance as static readonly in Singleton DP and what if someone set singleton object as null. Shall we create another instance as we have null check in object creation.
9. What is CoR DP.
10. Explain about the Entity Framework. How to approach with Model First.
11. What is SQL performance tuning.
12. What is Custom control.
13. How to create a custom control suppose a Calendar where if we pass a number, it render total number of months in that.

14. What is Task. How to write a Trackbar that will progress once each task will finish.
15. How garbage collector works. Explain with Generation concept.
16. What will happen If all generations are full with memory.
17. How memory is allocated for Objects. Like If we have Class with some variables and Methods. Where the memory will be allocated for all the global and local variables, In Stack or Heap.
18. How to write the unit test case for static method.

TBC….

Eurofinns, Banglore

1. What is Theory in XUnit Test case.
2. Difference between Fact and Theory in XUnit.
3. What is Mocking and why we use it. Which version of Moq we are using.
4. Explain your Project's architecture.
5. What features of Prism you are using.
6. How to bind the enum with Combobox.
7. Write signature of DP.
8. What is command and how it works.

Jatin's Corner

Pramati

1. Architecture of your project ? MVVM
2. How you communicate between two view models?
3. Have you handled the key stroke? How you handled? What?
4. Difference between CustomControl and userControl? Scenario when to use? Can you use Custom control in WPF?
5. Triggers : Types of triggers When you use Data and Event triggers?
6. Localization in a textbox?
7. Converter : Single value converter and Multi value converter/ Is there any way we can avoid unboxing in the converter?
8. What is Attached property?
9. What is Virtualization?

Ciena Interview

1. What is MSIL and what is the purpose?
2. What is garbage collector? Generations and how it works?
3. Explain managed and Unmanaged Code?
4. How we claim memory for unmanaged resources? Dispose and its working?
5. What is run time polymorphism? Explain with an example?

6. What are delegates?
7. What are events?
8. Any example which can't be done by run time polymorphism?
9. What is Solid principle
10. What is observer pattern
11. What is factory pattern
12. Implementation of Pub Sub method
13. What is Dependency property? Advantages Memory Consumption?
14. Do we have default dependency property?
15. Difference between CLR and dependency property?
16. What is logical and visual tree?
17. Difference between WCF service and web service?
18. Are they interoperable?
19. How we consume service hosted on servers?

Ciena Interview Round2

- What is CTS? And what is CLS
- What is a condition that an object will be reclaimed? REference Tracking
- Class A
    - {
    - Object Linked;
    - }
    - A A1 = new A();
    - A A2 = new A();
    - A1.Linked = A2;
    - A2.Linked = A1;
    - When they are out of scope memory will be reclaimed?
- What is the purpose of multiple generations?
- Every time garbage collection runs all generations are executed?
- What are Generics? Purpose of generics?
- Can we do it by deriving the class by object?
- Difference between Static and Singleton? Is there any difference apart from Life control.
- Factory Pattern? Use of this?
- Members of INotifyPropertyChanged?
- How you implement it? Where will you define an handler? How raising this will update the GUI?
- Method overriding and Method hiding?
- Parent Class -> Virtual Print +
    - Child class is derived from Parent + Override Print
    - Child C = new Parent();

C.Print() Which Print method will be called? Not Compile
Parent p = new Child(); p.Print() Which method? Child Print
Parent p = new Parent(); p.Print() Which method ? Parent print

- Members of ICommand?
    - Explain all the members
- What are routed events?(Bubble Tunnel and direct? Explain all.)
- Window -> Grid -> Button -> Text-> Image -- Explain Bubble and Tunnel events on the tree?
- Now lets say you have to stop bubbling the event on Button itself what you will do?
- Explain Using statement ? Can a normal class without IDisposable can be called in using?
- Explicit interface calling? How you will call the explicit interface?
- Var i = 10; i.GetType
    - i= “India” i.GetType()?

C# Questions:

1) class & structure
2) protected internal
3) virtual method
4) covariance and contravariance
5) abstract class and interface
6) finalize and dispose
7) delegate and types of delegate
8) Design patterns
9) Private constructor
10)anonymous method
11) generics
12) type safety
13) autoreset and manualresetevent
14) action delegate and function delegate,predicate
15) Indexer
16)Reflection, Assembly,modules,types
17) InEnumerable and IEnumerator
18) ref and out
19)lambda expression
20) Assembly in .Net
21) Metadata
22) Generic and Non Generic collection
23) Managed and Unmanaged code
24) Exception Handling
25) CLR CTS
26) Field and property
27) Partial class
28) Stringbuilder and string
29)Ienumeration
30) .Net Architecture
31) Static constructor
32) Recursion, advantage and disadvantage

33) Static class
34) Hashtable and arraylist
35)System level and Application level exception
36) using block
37) asynchronous programming in C#
38) Exception in final block
39) Class used in different exceptions
40) Sealed class
41) Operator overloading in C#
42) var and dynamic
43) Linq
44) Anonymous types
45) constant and readonly
46) Threads
a) Foreground and Background thread
b) Thread Safe programming
c) Mutex, semaphore, monitor, semaphoreslim
d) async and await
e) Thread pooling
f) autoreset and manual reset
47) Serialization and Deserialization
48) IComparable and IComparer
49)YIELD KEYWORD
50) Extension methods
51) Finalization queue
52) Freachable queue
53) How to make class immutable
54) Dependency injection

Inversion of Control, types of Dependency injection, Garbage collection, Gen 0,1,2 GC.Collect

WPF Questions:

1) Dependency property & Readonly DP
2) Routing
3) Data Binding
4) Command Binding
5) Static resource and dynamic resource
6) Routed Events in WPF
7) Value Converters
8) Triggers in WPF
9) INotifyPropertyChanged
10) ICommand
11) Templates in WPF (Control, ITEM template Data template)
12) Attached properties in WPF
13) Logical and Visual tree
14) Resourcedictionary
15) Dispatcher, Dispatcher.Invoke,Dispatcher.BeginInvoke difference
16)Modularity
17) MEF
18) Prism
19) Validation
20) Popup

MVC questions

Routing
Action Result
View Result
DOM
Filters,Authorization filter Action filter, Result filter, Action filter
Tempdata.Viewdata,ViewBag
Razor view and Aspx view
Url Patterns
Scaffholding
Partial View
different types of action filters in MVC
Authentication process in MVC
Session object in MVC
Http Verbs
Attributes
Html helpers
difference between HTML.Textbox and HTML.Textbox for
Attribute based routing in MVC
Advantage of route structure
Validation in MVC
How to create custom view Engine
MVC model binders
MVC life cycle
HTTP and HTTPS
Session Hijacking