DAY6 MORNING ASSIGNMENT
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Q2) How the values of ArrayList are stored in the memory.

A) The System. Collections namespace provides an ArrayList class that grows dynamically as we either insert or delete elements.

- The simplest and most efficient way to insert a single element is to use the Add() function. It inserts the new element at the back of the list:
- **SYNTAX**: data Add(data);
- To returns the number of elements held in the ArrayList object we use COUNT variable.
- **SYNTAX**: Console. WriteLine ("insert {0}", text. Count);
- To create a new ArrayList object we use a new expression (I.e.)
- **SYNTAX**: ArrayList text = new ArrayList();
- Once we've completed our element insertion, we can trim the capacity of the ArrayList to the actual element count using the TrimToSize() method:
- **SYNTAX**: text.TrimToSize();

Q3) What are the dis-advantages of ArrayList (Collections ArrayList).

- We get run time errors because of the loosely-typed nature, but it also affects the performance of the application due to boxing and unboxing.
- If we want to retrieve the data from the collection, we need to covert the object type back to the integer type again and again by performing an unboxing.
- So, this unnecessary boxing and unboxing happen behind the scenes every time we add and retrieve value types to the collection.
- Collection classes can grow in size automatically when we add items into the collection.

Q5) Differences between Collections and generics.

COLLECTIONS	GENERICS
1) NAMESPACE: SYSTEM.COLLECTIONS	1) NAMESPACE: SYSTEM.COLLECTIONS. GENERIC
2) Each element in collections is of OBJECT datatype.	2) Each element in Generic is of Integer datatype like" LIST<T>".
3) There is a need of type casting in Collections.	3) No need of any type casting in Generics.
Example: ARRAYLIST.	Example: LIST.

Q9) Write all data types in C# and write the respective alias name:

DATATYPE NAME	ALIAS NAME
byte	Byte
Ushort	UInt16
Uint	UInt32
Ulong	UInt64
Sbyte	SByte
short	Int16
int	Int32
long	Int64
float	Single
double	Double
decimal	Decimal
boolean	Boolean
char	Char
string	String

Q10) Write example programs for implicit and explicit type casting.

IMPLICIT TYPE CASTING:

When we need to convert a small datatype value to a large datatype value of a program is called as IMPLICIT TYPE CASTING.

For Example: **char -> int, int -> long, long -> float, float -> double.**

```
static void Main (string [] args)
    {
       short p = 5;
       int q = p;
}
```

EXPLICIT TYPE CASTING:

If we need to convert a large datatype value in to a small datatype value then it is said to be EXPLICIT TYPE CASTING.

For Example: **double -> float, float -> long, long -> int, int -> char.**

```
static void Main (string [] args)
    {
       short p = 5;
       int q = (short)p;
}
```

Q6) How the values of LIST<T> are stored in the memory.

- Represents a strongly typed list of objects that can be accessed by index. Provides methods to search, sort, and manipulate lists.
- CONTAINS method is used to test for the presence of an item in the list. INSERT method is used to insert a new item in the middle of the list
- The parameter less constructor is used to create a list of strings with the default capacity, The CAPACITY property is displayed and then the ADD method is used to add several items, along with the COUNT property.
- The default ITEM [] property is used to retrieve an item. And the REMOVE method is used to remove the first instance of the duplicate item added earlier, and the contents are displayed again
- Finally, the CLEAR method is used to remove all items from the list, and the CAPACITY and COUNT properties are displayed.