Questions	Solutions
What are Pointer?Dangling and Memory Leakage	
Why we use OOP?	
Difference between overloading and Overriding?	
Inheritance?	
Polymorphism?	
Difference between static and dynamic binding?	
What are static varables?	
Private classes kia hoti hn or uska object kesy bny ka	
Abstract classes or unka object	
Inheritance	
Polymorphism	
Static classes	
Find sum of array having numbers from 1 to n without using loops	
I implemented using recursion	
Next question was implement without recursion and loop	
They wrote a code and asked to tell the output.	
Do classes bnae A or B	
b was injeriting A	
method from A was overrided in B and they created object of A and B and called the overrided methods from A first and then B and asked the output	
high chosion low chosion coupling sealed classed object creation	
Implement krwai inheritance and polymorphism	
Or end py array reverse krny ka code likhwaya	
Inheritances ki types	
Multilevel or multiple inheritance	
List or tuple ma difference bss ye sb poocha	
File handling, append and write mode. Difference, How to use them in java?	
Inheritance (super vs sub class) Polymorphism Constructor vs estructor (Real World examples)	
Pass by Value vs pass by reference	
3. Why Copy constructor used	
4. Deep copy vs Shallow copy	
5. Polymorphism	
Shape* s=new circle();	
Which class area fun will be called and why	
8. Is size of 'char pointer' and 'int pointer' same?	
9. Recursion vs Loop	
13. Fibbonacci	
17. How to check number is even/odd without using mod or & operator?(agenda is to see what you do when your implied solution fails and you have to find a solution out of box)	
Basic oop (what and why) and real life examples	
Real life examples of OOP Pillars from within the room	
Coding illustration of basic oop concepts	
given an array find subarray sum equal to target, write proper code covering all the edge cases.	

Is the given senario function overloading Void foo(int) Void foo(long) If yes then what would be the answer of foo(5).	
What is Diamond problem, if classes are empty would the diamond problem persist.	
What is the difference in class and object.	
What is the function overloading and overriding.	
What is polymorphism.	
Given a matrix find the sub-matrix of size n by n which includes only 1.	
How exception handling works in c++, explain try catch finally, can we have more than one try, catch or finally	
What is bufferstring?	
Given a matrix find the sub-matrix of size n by n which includes only 1.	
How exception handling works in c++, explain try catch finally, can we have more than one try, catch or finally	
What is bufferstring?	
why main function is static in java	
jagged array	
Paranthesis mismatch check without using stack.	
interface, static, abstract classes can not instantiate an object.	
pointer/variable	
Pillars of oop	
Funtion overloading/overriding	
Dynamic Binding	
What is diamong problem? How to solve it	
Virtual Functions	
Dangling Pointer and Memory Leakage	
Which class constructor will be called in inheritance	
abstraction vs encapsulation	
Polymorphism Real world expample	
static keyword	
what cohesion does?	
Anagram	
Find Duplicate Number problem.	
Palindrom Problem	
Find Power of Number using recursion	
There is array and sum value you have to return index of values which have equal to sum. And How will you reduce to O(n)?	
Pointers	
Pass by value vs by reference	
Can we call the main method from main.	
If we return address of a local variable from a function and then store it in a pointer in main method. Will this code give any error and what will be the value at that address.	
why we need oop?	
Difference between interface and Abstract Class. Why do we use static keyword.	
find two most frequently occuring elements in non unique sorted array	
find difference of sum of left and right diagonal of 3x3 matrix in O(n)	
fibonoci series using recursion	

Why do we need OOP?	
Difference between OOP and Procedural programming.	
Pillars of oop	
Difference between overloading and overriding.	
Code of Fibonacci sequence.	
Recursive Code for Fibonacci.	
pointer vs reference, memory leakage, dangling pointer, access modifiers, static vs dynamic meory allocation	
how to avoid memory leakage	
Code of Fibonacci sequence.	
two sum problem	
inheritance, inheritance types, diamond problem, abstract functions, abstract class, interface, friend function, friend class, polymorphism, overriding, overloading, constructor vs destructor, copy constructor, shallow and deep copy	
if child class provide definition to abstract function it would be overriding or overloding?	
Return nth term of Fibonacci sequence using recursion	
Write Fibonacci sequence using recursion upto specific term	
Return two most repeated values from a sorted array	
Why do we use static keyword.	
What are static methods.	
Can we call non static attributes in static methods.	
Encapsulation and Abstraction with real world example.	
How do we achieve abstraction and encapsulation.	
Difference between overloading and overriding.	
Why do we use static keyword.	
What are static methods.	
Can we call non static attributes in static methods.	
Encapsulation and Abstraction with real world example.	
How do we achieve abstraction and encapsulation.	
Pillars of OOP	
Details of each Pilar	
Real life examples	
Object vs class	
Why we use OOP	
Aggregation vs composition with real life examples	
If we have function with the same name in both base and derived class without virtual keyword will it give any errors and if not which method will be called by compiler.	
Types of destructors	
Constructors and destructors	

If we declare class as static then do we have to use static with members as well	
1 ques me array ko left shift krna tha	
1 ques me btana tha st1 se str2 bn skti ya ni like abc in str1 bac str2 me hai to is case me true return krwana tha	
1 ques tha string me se 1st non repeating charater print krwana (n) me	
One array ques, remove duplicates	
OOP pillars, pillers of OOP	
Final keyword	
Sealed keyword	
Static keyword	
Diamond problem and solution	
Multilevel inheritance, and can it cause any issue	
-Recursion	
-Recursive code to find factorial	
-Write a function which takes a number as parameter and print "test" if it is divisible by 3 , "QA" if divisible by 5 and "testQA" if divisible by both 3 and 5.	
-Write a function to return 2nd largest in an array.	
What is OOP and why we use it	
Inheritance	
Abstraction	
Polymorphism (in detail and depth)	
Access Modifiers (all)	
Keyword Static usage	
5. Than he GAVE me a scenario and write the pseudo code.	
[1,2,3,[4,5,6],7,8,9] how find max in it.	
find maxsum and min sum of 4 elemnts in array of 5 elements.	
Pillars of opp.	
Overlaoding.overriding	
Print first 10 prime numbers	
-Write a function which returns true if the given number is prime number.	
Swap two numbers without third varaible.	
Arrange them(123456789)in 3*3 matrix so that rows ,columns, diagonal,sum will be 15.	
If we inherit public and private what will happen?	
Is private inheritance possible?	
Write do while loop as a for loop.	
Why oop? Advantages and disadvantages?	
Code to print array backwards	
Oop	
Polymorphism	
Inheritance	
Abstraction and encapsulation	
Code for composition and aggregation	
Diamond problem	
And its solution	

-- oop concept plus inheritance ka code likha tha usnay or uspe Q/A kia, types of inheritance	
String is palindrome	
Sum of digits using recursion	
Diamond Problem (What is it, How to solve)	
Polymorphism	
Inheritance and its Types multi-level and multiple	
4 pilers of oop	
inhe	
string palindrome	
[1,2,3,[5,6,7],7,8] make this 2D array in 1D using recursion	
check number is prime or not	
arrange negative numbers first and postive in last of array	
Q1) array A consisting of N integers is given. A slice of that array is a pair of integers (P, Q) such that 0 ≤ P ≤ Q < N. A slice (P, Q) of an array A is called non-negative if all the elements A[P], A[P+1], ..., A[Q−1], A[Q] are non-negative. The sum of a slice (P, Q) of array A is the value A[P] + A[P+1] + ... + A[Q−1] + A[Q]. For example, the following array A: A[0] = 1 A[1] = 2 A[2] = -3 A[3] = 4 A[4] = 5 A[5] = -6 has non-negative slices (0, 0), (1, 1), (0, 1), (3, 3), (4, 4) and (3, 4). The sum of slice (0, 1) is A[0] + A[1] = 1 + 2 = 3. The sum of slice (3, 4) is A[3] + A[4] = 4 + 5 = 9. The sum of slice (4, 4) is A[4] = 5. You are given an implementation of a function: def solution(A) that, given an array A consisting of N integers, returns the maximum sum of any non-negative slice in this array. The function returns −1 if there are no non-negative slices in the array. For example, given the following array A: A[0] = 1 A[1] = 2 A[2] = -3 A[3] = 4 A[4] = 5 A[5] = -6 the function should return 9, as explained above. The attached code is still incorrect for some inputs. Despite the error(s), the code may produce a correct answer for the example test cases. The goal of the exercise is to find and fix the bug(s) in the implementation. You can modify at most three lines. Assume that: N is an integer within the range [0..1,000]; each element of array A is an integer within the range [−1,000..1,000]. In your solution, focus on correctness. Code is given below..	

def solution(S):
max_sum = 0
current_sum = 0
positive = False
n = len(S)
for i in range(n):
item = S[i]
if item < 0:
if max_sum < current_sum:
max_sum = current_sum
current_sum = 0
else:
positive = True
current_sum += item
if (current_sum > max_sum):
max_sum = current_sum
if (positive):
return max_sum
return -1	

Q2)
 	
We will call a sequence of integers a spike if they first increase (strictly) and then decrease (also strictly, including the last element of the increasing part). For example (4, 5, 7, 6, 3, 2) is a spike, but (1, 1, 5, 4, 3) and (1, 4, 3, 5) are not. Note that the increasing and decreasing parts always intersect, e.g.: for spike (3, 5, 2) sequence (3, 5) is an increasing part and sequence (5, 2) is a decreasing part, and for spike (2) sequence (2) is both an increasing and a decreasing part. Your are given an array A of N integers.
 	
Your task is to calculate the length of the longest possible spike, which can be created from numbers from array A. Note that you are NOT supposed to find the longest spike as a sub-sequence of A, but rather choose some numbers from A and reorder them to create the longest spike. Write a function: def solution(A) which, given an array A of integers of length N, returns the length of the longest spike which can be created from the numbers from A. Examples: 1. Given A = [1, 2], your function should return 2, because (1, 2) is already a spike. 2. Given A = [2, 5, 3, 2, 4, 1], your function should return 6, because we can create the following spike of length 6: (2, 4, 5, 3, 2, 1). 3. Given A = [2, 3, 3, 2, 2, 2, 1], your function should return 4, because we can create the following spike of length 4: (2, 3, 2, 1) and we cannot create any longer spike. Note that increasing and decreasing parts should be strictly increasing/decreasing and they always intersect. Write an efficient algorithm for the following assumptions: N is an integer within the range [1..100,000]; each element of array A is an integer within the range [1..1,000,000].
	And this is the solution of the q2 which I created in the test:
	
	def Solution(A):
	size = len(A)
	
	max_element = -1
	
	if size < 3:
	return 2;
	
	for i in range(size):
	if A[i] > max_element:
	max_element = A[i]
	
	frequency = {}
	
	for i in range(size):
	if A[i] in frequency:
	frequency[A[i]] += 1
	else:
	frequency[A[i]] = 1
	
	max_size = 1
	
	for key in frequency:
	if frequency[key] == max_element:
	pass
	elif frequency[key] >= 2:
	max_size += 2
	else
	max_size += 1
	
	return max_size

Draw schema of a subsystem of FYP (scenario given)	
Types of relationships in DB	
Given a scenario, explain what relationship holds there (1-many etc)	
What is normalization? and why do it?	
2 NF	
Pillars of OOP	
deadlock and its solutions (mutex v semaphore explain with example)	
polymorphism	
Is vs == in python	
Pillars of Oop with Examples in terms of coding.	
Explain the 4 pillers of OOP with a programmatic approach.	
find missing number from given range	
swap 2 number 3 solutions mangay usny	
leetcode power of 2 problem	
Given string s return the index counting from 0 of a character such that the oart of the string to the left of that chacter is a reversal of tha part of the string to right. For example racecar will return 3*	
find the index whose left most string and right most string are reversible. If not present return 0.	
given a string of A's B's and C's, remove the occurance of AA, BB, CC. The program needs to run until all AA, BB CC gets removed.	
What is copy constructor?	
Why we pass by reference and not by value in copy constructor?	
Difference b/w inheritance and polymorphism?	

What is encapsulation and abstraction?	
Write a function that takes root in parameter and tell whether it is a valid binary search tree or not ?	
Write a function that takes an array and a target in parameter and return the starting and ending index of the target. Example : Array[1,2,3,4,4,4,4,5,6,7,8] , Target =4 Your function should return [3,6] as the starting index is 3 and ending index is 6. The array was sorted you not to worry about that.	
python mixins,	
python decorators	
explain inheritance with code example using constructors	
Print 2D array in spiral	
check if string is anagram	
Total types of inheritance	
abstraction vs encap	
static - inheritence..	
polymorphism	
overloading vs overriding	
string - common letters find	
find second largest number in array	
string is pallindrome or not	
flatten a jaggaed array	
recursion	
- Abstraction and interface	Both are use as blueprint.In abstraction we have abstract class and inside abstract class we can difine abstract methods which can be accessed in drive class. we can't make properties in interface. we cannot make object of interface as we can not make object of abstract class. in abscract we have to minimum one method abstract but in interface we have to abststact all methods.
- Static are overloaded or overridden	A static can be method or variable. A self key world is use for if you want to acces static variable in class. A static member method can be access out side class without creating object of that class.Static methods in C++ can be overloaded but they cannot be overridden.
- Final are overloaded or overridden	overloaded but can not overidden. The final keyword is a non-access modifier used for classes, attributes and methods, which makes them non-changeable (impossible to inherit or override). The final keyword is useful when you want a variable to always store the same value, like PI (3.14159...). The final keyword is called a "modifier".
Func A(int a, float b) Func A(float a, int b) what is happening here? what if I call Func A(1,1). which function will get called? correct answer is upper Func A will get executed.	actually this will give error becasue compiler has ambiguity deciding because both parameters match both intances of overloaded functions

1- Func A(x): x = x + 10 Func B(&x): x = x + 15 driver code: x = 10 FuncA(x) print(x) FuncB(&x) print(x) what will the two print statements print?	
Four pillars of oop ,differnce between encapsulation and abstraction,give examples by writing code.	
assignment and copy constructor.,constructor and destructor.	
run time and compile time polymorphism,overloading and overriding,using virtual keyword what we achieve,run time or compile time polymphsim.	compile time mn overloading and runtime mn overriding.
what is oop. and what is class and instance.	
Four pillars of oop, describe each	
Purpose of virtual =0. Abstract & Interface difference Static variable and Static function	
Diamand problem	
Diamand problem. If java doesnot allow multiple inheritence, then how diamond problem arise	
pillars of OOP	
why do we use & in copy ctr paremeters list?	
memory leakage vs dangling pointer	https://aticleworld.com/dangling-pointer-and-memory-leak/#:~:text=Generally%2C%20dagging%20pointers%20arise%20when,to%20deallocate%20the%20allocated%20memory.
real life examples of OOP's Pillars	
do an inplace swap	
types of inheritence	
multiple inheritance is not supported by every language! why? diamond problem?	
Desgin Patterns?	
What is Singleton pattern? how do you implement it?	
MVC	
defines pillars of OOP by an Example?	
use of "virtual" keyword?	
types of polymorphism?	
why OOP?	
why Inheritence?	
why Inheritence?	
Real life examples of OOP's Pillars	
Difference between Abstraction & Encapsulation	
types of polymorphism	
Operator Overloading and Operator Overriding	
- Function overloading and function overriding - Can we achieve function overloading by just changing the return type?	
Print Even or Odd without using the modulo operator. Can use if statement.	
can we achieve overloading in child class	

shallow vs deep copy	
friend function ? why we use friend function?	
Max sub array problem	
Oop pillars	
Polymorphism	
Instance vs object	
Why oop	
Why not fpp	
Example of abstraction	
Pure virtual	
Virtual	
2d matrix product	
Is java purely on oop?	
polymorphisam pocha os na or oop k questions kia khuch	
aik question tha polymorphisam ma kon sa function call ho ga aik ma parameters int tha aik ma double	
Based on given number, print even or odd. No if else or ternary operator. Print Even or Odd without using the modulo operator. Can use if statement.	
write a function such that if we pass 100 it returns 101 and if we pass 101 it returns 100 without if else and ternary operator	
2d matrix diagonal print	
func that return 3 on 2 and vice versa	
Basic oop mcq	
Inheritance	
Polymorphism	
Overloading vs overriding	
Runtime and compile time polymorphism	
Abstraction vs encapsulation	
Multiple inheritance	
Diamond problem	
Static vs dynamic functions	
Dynamic variables/array with initialization and deletion	
Static vs normal classes	
Method overloading and overriding	
Polymorphism	
What is oop	
Objects and classes	
4 pillars of oop	
Encapsulation	
Try/catch	
Static methods`	
aggregations ---> limits	
resolve senario -------> we execute a function after every 5 seconds	
We have a doubly link link with channing. We have to flat it and have to sort it without using built in functions	
We have an array of objects and in each object we have starting time and ending time. We have to make sure no 2 events overl	
We are given an array with negative and positive values and we have to return those two values whose sum is closet to zero in O(n)	
Write a program to find largest palindrome number from the given case-sensitive string in O(n).string data = “in12321.:[iopoi._6tyt6_:.qWsrGh+Z*+*z+HgH+Z_.AtErEtViiivTe”	

Given an integer array and an integer k, return the k most frequent elements. You may return the answer in any order. input: array = [1,1,1,2,2,3], k = 2 output: [1,2] input: array = [7,7,6,7,4,6,4,6,6], k = 3 output: [7,6]	
You are given an array of integers. There is a sliding window of size k which is moving from the very left of the array to the very right. You can only see the k numbers in the window. Each time the sliding window moves right by one position. Your task is to return the maximum value in each window. input: array = [1,3,-1,-3,5,3,6,7], k = 3 output: [3,3,5,5,6,7] Window position Max [1 3 -1] -3 5 3 6 7 3 1 [3 -1 -3] 5 3 6 7 3 1 3 [-1 -3 5] 3 6 7 5 1 3 -1 [-3 5 3] 6 7 5 1 3 -1 -3 [5 3 6] 7 6 1 3 -1 -3 5 [3 6 7] 7	
Given a string containing characters and brackets '()','{(3)}'. Determine if the input string is valid. An input string is valid if: Open brackets must be closed by the same type of brackets. Open brackets must be closed in the correct order. Every close bracket has a corresponding open bracket of the same type. Precedence of brackets (,{, [does not matter. input: equation = "()" output: true input: equation = "{(2+3)}" output: true input: equation = "[{(1+3)^4}/2]" output: true input: equation = "[{(1+3)^4}/2)" output: false	
What difference between normal and es6 function	
What exactly This Is Pattern =[1,2,3,11,55,6,77] sub-pattern =[11,55,6]	
Write function which take two arg and give index if sub pattern exist in pattern	
Write function which take hours and minutes and return angle	
Find even maximum sum of array	
Find sum of non duplicated elements of a array	
Aik question mein recursive code given tha ussay iterative karna tha.	
Baki tha composition aur inheritance mein se konsa ise karna chahie	
Write Code to convert binary into decimal.	
Interface	
Abstract class vs Interface.	
Static keyword	
Private vs protected	
Sum of digits of a number untill single digit is left.	
find the pair that has maximum sum in an array.	
check two words anagram or not	
find minimum difference between two numbers in unsorted array	
string="pentaloop" find first non-repeating character	
First least repeating character in string.	
Question1: write a cpp or python code to check if a string is palindrome or not	
Question2: Write a cpp or python code to check if a given number is Fibonacci or not	
Also you have to mention time complexity	

There were 2 questions for coding round	
1) Find Second Largest and Second Smallest numbers from an array	
2) Factorial of a number	
Also write time complexities of both programs	
2. String -> change 'K' letters in a string and find the maximum substring of the same letters from that string. matlab 1 string may aap 'K' number of times characters change ker skty aur esi substring btani jo same letters sy mil ker bni ho.	
1. Given two strings find they if are anagrams	
Find the nth fibonacci	
Write a function that finds out if a given number is strong or not, a number is strong if the sum of the factorial of its digits is equal to the number itself, e.g 145 is a strong number because 1!+4!+5!=145	
Four pillars of oop	
Max of a n array	
Find which string in array of string is pallindrome	
5. What is a friend function?	
6. What are access modifiers?	
7. Explain protected access modifiers?	
8. Composition, aggregation	
Coding questions like Multilevel Inhertiance is protected called in class E or accesiible in E or not?	
A is abstract class inherited by B and B is inherited by C. B did not implement the function is this arise an error or not or is Class C going to implement it or not. How errors resolved?	
Overloading vs Overridng	
Compile vs Runtime	
oop basic questions	
What are pillars of oop	
Abstraction vs encapsulation	
Association	
Aggregation	
Composition vs inheritance	
Types of inheritance	
Define multiple and multilevel inheritance	
What is operator overloading	
What is function overloading	
Operator overloading vs function overloading	
What is function overriding	
What is polymorphism and give its real life example	
Static vs dynamic polymorphism	
Describe public private and protected inheritance	
Define frnd functions why we use this	
Can we make constructor and destructor private	
What happens when we make them private	
What is virtual keyword why we use it .	
What is diamond problem and how we can solve it	
What is virtual vs pure virtual function	
What is abstract class	
What is interface class	

What is static member function and static data member	
Can we access non static data members in static function	
Dynamic vs static binding	
What is copy constructor	
What are templates	
Class vs struct	
What is virtual table in oop	
Difference between private and protected	
can we overload constructor and destructor	
Composition vs aggregation	
What are frnd functions how they are used	
OOP pillars in details	
Polymorphism	
Static and Dynamic Polymorphism	
Overriding	
Difference b/w overloading and overriding	
Inheritance	
Type of inheritance	
Access Modifier/ Specifier	
Diff b/w Abstraction and Encapsulation	
Diff b/w Abstract Class and Interface	
Diffference between class and struct	
Can we declare a static class	
Dynamic vs static binding	
What is copy constructor	
What are templates	
Heap memory allocation vs stack memory allocation	
What is virtual table in OOP?	
Difference between private and protected	
Can we overload a constructor and destructor?	
Composition vs aggregation	
anagram code	
Aik probability k sawal th	
Find the sum of numbers which are arithmetically correct	
a function to calculate the square root of a number	
a function which returns 3 if receives 4 and returns 4 if receives 3.	
a function which returns 3 if receives 4 and returns 4 if receives 3.	
Q1: shape is a parent class square and circle are child classes	
Shape *sh=new Circle() ;	
Is it valid statement? And explain why?	
Q4: what is denormalization and what are its advantages?	
Q8: print 2dimensional array of NxN size using one loop and one variable	
Q9: Given an array of five positive integers. Calculate the mininum and maximum sum of 4 out of 5 integers. Calculate this in minimum time complexity	

Q10: replace a digit in a number without using string or character typecasting	
Example input=replace(423567,6,0)	
Output=423507	
How to Prevent SQL Injection	
Class	
Parent class child class	
Polymorphism	
Accessors, Mutators, Add Operator	
PB-8 in Python	
How can we implement the switch structure of C++ in Python	
What is recursion and what we need to make sure before implementing it	
Pickling in Python	
Diff b/w encapsulation and abstraction	
Diff b/w tuple and attribute	
Filtering in Python	
What is number and why do we use it	
replace a digit in a number without using string or character typecasting	
10. shape is a parent class square and circle are child classes	
Shape *sh=new Circle(); Is it valid statement? And explain why?	
5. Write a function that takes in an integer and returns the sum of its digits. The function should continue summing the digits until a single-digit number is obtained.	
Example: Input: 9875 Output: 2 9 + 8 + 7 + 5 = 29 2+9=11, 1+1=2)	
9. Check if a string is a palindrome? A string is a palindrome when it reads the same forward and backward.	
Example:	
Input: str = "1122334455667788990000009988776655443322 11";	
Output: " Yes "	
Input: : str ="123"	
Output: "No"	
10. shape is a parent class square and circle are child classes	
Shape *sh=new Circle(); Is it valid statement? And explain why?	
1.Inheritance, polymorphism, encapsulation, abstractions ka baray ma pocha tha	
2.Real life example of polymorphism	
3.Types of polymorphism and their example	
1.given list of string find the one with maximum size	
2.given 2 strings find if they are anagrams	
Aur phir oop ma access modifiers poche aur poocha agr 1 class ki privage members ko access krna ho to kese krte access	
diff btw oop and structural programming	
classes and objects	
four pillars in detail with real word example	
diff between abstarction and encapsulation	
virtual func and pure virtual functions	

multivel inheritence	
Their is an app whatsapp isme user ki profile h...ar dp hide krni h kase krenge... whatsapp ki all possible classes kia bnegi....contact details kase store hongi....in classes ka apa mai relation kia hoga one to many etc...ar chat history maintain kase krenge hr day ki...	
Slowest key press	
Balance parenthesis	
(hacker rank)	
Slowest key press	
Balance parenthesis	
(hacker rank)	
-Pillars of oop	
-Oop vs functional programming	
-Types of polymorphism	
-Encapsulation kese achieve hoti he	
-Dependency injection	
-Diamond problem	
-Singleton pattern with use case	
Given a string "[(){}]" tell whether its a balanced brackets or not	
Find Longest Palindromic subsequence or a sequence in a string	
Climb():	
#number of stairs is given, a person can move to 1 step of 2 steps at a time, we have to find combinitions of how many ways a person can climb up	
for example	
1 stair only 1 way	
2 stairs 2 ways (1+1 step or 2 steps)	
3 stairs 3 ways(1+1+1 or 2+1 or 1+2)	
4 stairs 5 ways(1+1+1+1 or 2+1+1 or 1+2+1 or 1+1+2 or 2+2)	
Match Pairs	
A list of odd numbers is given 2 times. Only 1 number occurs 1 time, find that number	
For example 9 11 13 3 11 9 13	
Ans 3	
Q1. Check if given number is an Armstrong or not. Armstrong is a number in which sum of each number raise to power total count of numbers present in it equals itself e.g 371=3^3+7^3+1^3	
Q3. Write a method toGenerate a random number without using any built in random generator method	
Interview ma sawal thy k OOP kiu bnai thi, zaroorat kiya thi.	
Abstraction aur Incapsulation ka faraq btao. Private Memeber ko access krwao (getter setter).	
Pillars of oop	
Abstract vs interface	
Can abstract class extend single or multiple abstract classes?	
Real world examples of objects, OOP and four pillars	
Oop pillars with examples?	
1) Interface vs abstract class with example	
2) Polymorphism (example must be from the room you are currently sitting.)	
3) Class, object, reference ma difference	

6) BinaryEquivalent ka function	
7) Palindrome (string must be of 5 char length)	
And OOP all pillars and their examples.	
Strings are mutable or immutable?	
1) factorial of a number without using recurssion.	
3) Create a class constructor which also initialize a variable name . No call that constructor from child class.	
5) 2D array treversal using for each loop.	
You are given an integer number e.g. 345 and a number k e.g. 12.	
You have to make 345 999 starting from 3->9 4->9 5->9.	
You have to subtract the difference from k. i.e. After 3->9 k=12-6 =6. After 4->9 k=12-5=1. After 5->6 k=0.	
Second question was to remove duplicates from an array.	
backtracking,recursion and 1d,2d dynamic programing.	
Also for these you have to draw the recursion tree.	
In my case the questions are Print largest subsequence palindrone?	
Then then ask you to change it using oop.	
In 2nd interview they ask Print all possible combinations of a string.	
Game of fly problem of leetcode without using extra memory and also a class diagram related to any game scenario given.	
Q1: shape is a parent class square and circle are child classes	
Shape *sh=new Circle() ;	
Is it valid statement? And explain why?	
Q4: what is denormalization and what are its advantages?	
Q8: print 2dimensional array of NxN size using one loop and one variable	
Q9: Given an array of five positive integers. Calculate the mininum and maximum sum of 4 out of 5 integers. Calculate this in minimum time complexity	
Q10: replace a digit in a number without using string or character typecasting	
Example input=replace(423567,6,0)	
Output=423507	
static binding vs dynamic binding	
Print diagonals of 3*3 matrix	
Inheritance,and types	
Prime number code	
Anagram without sorting	
2 3 10 1 4 ,find leader	
A leader is number , whose next all elements are less than it.forexample here is 10 and 4 are leaders	
Multiple and multilevel inheritance	
Pass by reference and value	
Print a Matrix in Spiral	
Flip a matrix horizontaly and verticaly (mirror)	
Given an array and a window size w, find w consecutive elements with minimum repetitive chracters	

Find if the number is palindrome or not.	
2)Print stairs of n by n matrix in O(n).	
Input=	
[[1,2,3,4],	
[5,6,7,8],	
[9,10,11,12],	
[13,14,15,16]]	
Output= 1,5,6,10,11,15	
Input= [1,3,6,15,4,7,9,13,2] ,k=3	
Output= 2	
For sub array [1,2,3] max=3 min=1 difference=2 which is minimum among all the subarrays.	
Find if string 2 is an anagram of string 1 or not.	
Find median in array	
Find the longest substring of a given string such that the substring does not have any repeating characters.	
Explain public , protected and private inheritance?	
We have a class company and another class school. So both of these classes have same method.	
In this case, is overriding possible or not?	
Strings Anagram	
String Palindrome	
Longest non repeating substring (no code just logic)	
What is opp	
Class vs Object	
Encapsulation Example	
Abstraction	
Inheritance and types	
Overloading and Overriding	
Abstract Class vs Interface Class	
interfaces, abstract class, interfaces vs abstract class	
pillers of OOP	
pointer, swap and other common interview questions	
polymorphism along with code examples, overriding overloading	
FINAL keyword, FINALLY KEYWORD	
what to write in class so that it cant be inherited	
DIFFERENCE between ABSTRACT CLASS and INTERFACE	
Reverse string	
interfaces, abstract class, interfaces vs abstract class	
pillers of OOP	
pointer, swap and other common interview questions	
polymorphism along with code examples, overriding overloading	

FINAL keyword, FINALLY KEYWORD	
what to write in class so that it cant be inherited	
DIFFERENCE between ABSTRACT CLASS and INTERFACE	
Reverse string	
Find sum of diagonal elements of matrix	
Find strong number between two numbers	
Interface ki implementation Diamond problem ko solve krny k liy	
Abstraction or encapsulation m diff	
Indexing or uski types detail m	
Abstract class vs interfaces	
Overriding overloading	
Is a/has a relation	
Dangling pointers, memory leak	
Why OOP?	
4 pillars of OOP	
How do we achieve encapsulation and abstraction?	
How do we achieve inheritance?	
Can we make an object of abstract class?	
Abstract class vs interface	
Overloading vs overriding	
Static vs dynamic binding	
Polymorphism types	
Diamond problem and its solution	
association	
Aggregation	
Composition	
- Explain Oop to an illiterate person.	
- Inheritance and its Types	
- Diamond problem and solution	
- Overload vs Override	
- Early and late binding	
- polymorphism	
- Abstraction and encapsulation	
- Implementation of encapsulation	
- Constructor and destructor	
- Pointers and how they work	
- Dangling pointers	
- Memory Leaks	
• Why we use oop?	
• Difference between overloading and overwriting	
• Inheritance	
• Polymorphism	
• Difference between static binding and dynamic binding	

• what are static variables	
• What are pointers, dangling pointer, memory leakage	
Abstract aur interface me difference	
Polymorphism thore se Bht zada detail me ni	
Overriding overloading	
Interface ki implementation Diamond problem ko solve krny k liy	
Abstraction or encapsulation m diff	
Abstract class vs interfaces	
Is a/has a relation	
Dangling pointers, memory leak	
Array ka size 10 hai 11th index pr value kese insert hogi	
Destructors in python	
Oop pillars	
Destructors q use krtay	
difference between static and dynamic	
Kia pointers ka size same hota	
If you are in a desert, create a UML diagram (showing the four pillars of OOP) of whatever you see.	
Difference between abstract class and interface?	
Can we create member variables in interfaces?	
Can we define methods in abstract class?	
What is Abstraction?	
If a parent class has protected member variables and a child class inherits it and then another class inherits the child class, so can the grandchild class will be able to access the grandparent memebers?	
Object vs class	
Abstract vs interface	
Polymorphism in detail incl overloading, overriding concepts	
Inheritance vs composition (diff in relation bw classes in both)	
How will you explain OOP to someone new to programming?	
Data types, Oop, Why e use it what if we cant, Interfaces extreme concepts, types of inheritance, overloading, overriding	
Problem:	
input array={1,2,3,4}	
Output array= {24,12,8,6}	
Flask questions	
After that a senior developer came and asked me to solve matrix multiplication problem. Then he gave me a leetcode question of jump game (min number of jumps to reach the end). (1.5 hrs long).	
-compile time binding	
Pillars of OOP	
Coding Round:	
Reverse an integar.	
Example:	
Input-> 567	

Output-> 765	
given a string remove duplicates	
Reverse an integar. Example: Input-> 567 Output-> 765	
Run time vs compile Time error	
Aggregation vs Composition	
Polymorphism	
How to prevent a class from further inheritance	
What is virtual Keyword	
Overloading and overriding	
If return type is changed is it still Overriding?	
Can a child class points to its parent or a parent class points to its child e.g. A a = new B() or B b = new A() A is parent B is child	
What are static vairables	
Can Static members call regular members	
What is upcasting and downcasting	
Parent p = new Child() this is upcasting or downcasting	
Pillars of OOP	
Encapsulation and write a code	
What is polymorphism	
Give Real life example of polymorphism	
Overloading and overriding	
If return type is change is the function still overloaded	
If return type is change is the function still overridden	
class vs interface	
abstract classes (can we create objects of it?)	
virtual and pure virtual	
polymorphism	
Diamond problem	
1. Find the average of an array excluding the max and min of the array.	
2. Find the index of last occurance of a target number from the given array.	
4. Swap the values of two variables without using 3rd variable.	
1 array say maximum find	
1 longest sequence [1,2,3,4,0,1,2,3,4,5,6,7,8,9,1,2,3] is say longest find karny hongay sequence theek or	
String say character a ki occurnce	
OOp pillars	
Difference between INHERITANCE and POLYMORPHISM	
dono me code re use ability hai how do they differ	
Function overloading and overriding me difference	
Difference between static bindings and dynamic binding	
1,2,3,0,1,2,3,4,5,7,8,9	
Longest subsequence ka code likh ke daina tha (PROPER CODE)	

1. Check if string is palindrom	
2. Reverse a string	
3. Find longest continuous subconsequence in an array of numbers	
1 array say maximum find	
1 longest sequence [1,2,3,4,0,1,2,3,4,5,6,7,8,9,1,2,3] is say longest find karny hongay sequence theek or	
String say character a ki occurnce	
Why oop?	
4 pillars of oop?	
Static variables?	
Access modifiers?	
aik problem di jis me aik element repeated tha...wo find krna tha	
opp ke 4 pillars	
Abstraction kiya	
Encapsulation kiya	
Given a 4x4 matrix	
C stands for Charlie (dog)	
F for Food	
H for home	
You need to compute minimum moves for Charlie such that it first eats all the food before going to home	
For example [FOOF],[OCOOH],[OOOO],[FOOO]	
Amswer is 11.	
What does a garbage collection do in C#	
Other mcqs were easy related to basic OOP concepts	
Given a string of integers, if two odd consecutive number exist add a * between them. If two even consecutive number exists add a / sign.	
For example str="457764"	
Output = 45*7*76/4	
Final output = **/	
Interview was totally about OOP and it's importance over procedural programming.	
One question about making object oriented approach for a game (chess) and then comparing it with procedural programming approach. Importance of OOP of procedural programming.	
-Why OOP?	
-Real life example which can cover 4 pillars of oop.	
encapsulation vs abstraction...most important	
- Polymorphism	
- Runtime vs static polymorphism	
- Why static classes	
- difference bw static classes and functions	
- overloading vs overriding	
- private inheritance	
- protected keyword	
- overloading is static polymorphism?	
- final vs constant keywords	

Overloading vs Overriding	
Dry run the given oop code	
give 2 return 5 and vice versa	
Shallow copy vs deep copy, write its code	
Static Members	
Object vs class x 2	
pillars of oop x 2	
define classes for animals in a zoo.	
Runtime and Compile time errors?	
Oop real-world example	
Polymorphism real-world example	
Draw class diagram for a restaurant	
Diff between final and const	
Access modifier	
How to access a private attribute of class	
What is multilevel inheritance	
Should multilevel inheritance be preferred	
What is encapsulation	
What is abstraction give real life example	
What is polymorphism give example	
Why do we use oop?	
pillars of oop?	
what is polymorphism.	
what is array?	
Which datatypes can be stored in Array?	
Write a program to calculate the sum of elements in array.	
Write a program, You are given an integer, return true if that integer ispalindrome and false otherwise.	
Write code for factorial using iterative and recursive approach	
What is agregation and composition	
What is function overloading	
OOP Basic concepts.	
Give an example from your experience where you have used conposition and inheritence in any of your project.	
Reverse Function kya hoty hain?	