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```
int calculationmatrixsum(int **matrix,int m, int n) {
int i, j, sum=0,row=m,column = n; if((row>0)&&(column>0))
for(i=0;i<row;i++) {
sum = 0; for(j=0;j < column;j++) 
if(i==j) {
if(matrix*[i][j]/2!=0) sum += matrix[i][i];
} }
return sum; }
else return sum; }
The method printpattern(int) of class drawpattern is expected to expected to print the first n
(n > 0) Lines of the pattern
TESTCASES
TestCase 1
Input:
Expected Return value:
11
1111
111111
11111111
TestCase 2:
Input:
Expected Return Value:
11
public class drawpattern {
public static void printpattern(int n) {
```

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```
int i,,j,print = 1; for(i=i;i <= n;i++) for(j=1;j <= 2 * i;j++) System.out.print((print));
System.out.println();
} }
int matrixsum( int &matrix, int m, int n ) {
int i,j,sum=0; for(i=0;i<m;i++) {
for(j=0;j< n;j++)
sum + = matrix(i)(j);
}
return sum; }
TESTCASE 1
Input
5,7,4
Expected return value: 35
TESTCASE 2
Input
11,12,13
Expected return value: 156
public class Multipation {
public ststic int multiplynumber(int a,int b,int c) {
int result, min, max, mid; max=(a>b)?a>c?a:cLb>c)?b:c); min=(a<b)?((a<c)?a:c((b<c)?b:c);
mid=(a+b+c)-(min+max); result=(max*int mid);
return result; }
/*
```

The method allExponent(int base,int exponent) of class All Exponent Accepts two integers base and exponents as inputs it is suppossed

to calculate and return the results of exponents of base raised to power exponent for all the input values

However incomplete code in the method allExponent works only

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positive values of exponent you will have to complete the code and make it works it works for negative values of exponents as well

Another method positiveExponent of class Exponent uses an efficient way for expontenentiation but accepts only possive exponents values .you are suppossed to use this method to complete the code i allExponent function

```
TESTCASE
TestCase 1;
Input
5.2
Expected Return Value:
25.0
TestCase 2:
Input
5,-2
Expected Return Values: 0.04
public calss AllExponent {
public static float allExponent( int base,int exponent ) {
float res=1; if(exponent >=0) {
Exponent exp=new Exponent(base, exponent);
res = (float)exp.positiveExponent(); }
else//odd {
res=0; }
return res;
} }
```

Code Approach: For this question, you will need to correct the given implementation. We do not expect you to modify the approach or incorporate any additional library methods. Lisa always forgets her birthday which is on 5 Th july

In order to help her we have function CheckBirthDay(char *month,int day) which takes day and month as inputs and returns 1 if its her birthday and returns a 0 otherwise The function

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compiles fine but to return desired results for some cases Your task to fix the code so but that it passes at

```
test cases
15(1) TestCase 1;
Input
July 13
Expected Return Value: 0
TestCase 2:
Input
April 3
Expected Return Value: 0
int checkBirthday(char* month,int day) {
if(strcmp(month,"july")||(day-5)) return 1;
else
return 0; }
int main() {
char inp[]="june";
int day=5; if(checkBirthday(inp,day)==1)
printf("Yes"); else
printf("No"); return 0;
}
```

Code Approach: For this question, you will need to correct the given implementation. We do not expect you to modify the approach or incorporate any additional library methods. Lisa always forgets her birthday which is on 5 Th july

In order to help her we have function CheckBirthDay(char *month,int day) which takes day and month as inputs and returns 1 if its her birthday and returns a 0 otherwise The function compiles fine but to return desired results for some cases Your task to fix the code so but that it passes at

```
test cases
15(1) TestCase 1;
Input
```

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```
July 13
Expected Return Value: 0
TestCase 2:
Input
April 3
Expected Return Value: 0
*/
int checkBirthday(char* month,int day) {
if(strcmp(month,"july")||(day-5)) return 1;
else
return 0;
}
int main() {
char inp[]="june";
int day=5; if(checkBirthday(inp,day)==1)
printf("Yes"); else
printf("No"); return 0;
}
/*
The function replaceValues(int *arr, int len) accepts an array arr of length len (len>0) as an
input and returns an array of the same length. If the length of arr is odd, all the elements of
arr are supposed to be replaced by 1st and in case it is even, the elements should be replaced
by 0s.
*/
int *replacevalues(int *arr, int len)
int i,j; if(len%2==0) {
for(i=0;i<len;i+=2) arr[i]=0;
} else {
for(j=0;j<len;j+=2) arr[j]=1;
```

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```
} return arr;
/*
Input:
Expected output:
ab
abc
abcd
abcde
testcase 2:
input:
Output:
*/
public class charecterpattern {
public static void printcharecterpattern ( int num) {
int i, j, value = 1;
char ch = 'a';
char print = ch; for(j=0;j<=i;j++) system.out.print( (ch ++ )); system.out.println( ** );
}
} }
The method median(int arr[]) of class Median accepts an integer array arr. It is supposed to
calculate and return the median of elements in the input array.
However, incomplete code in the method median (int arr[]) works only for odd length arrays.
public class Median {
public static int median(int arr[]) {
int start_index=0; int len=arr.length; int end_index=len-1; int res=-1; if(len%2!=0)
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```

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```
int median_order=((len+1)/2);
medianCalculate ob=new medianCalculate(arr,start_index,end_index,median_order);
res=ob.quick_select();
} else {
return res; }
}
The function findMaxElement(int *arr1,int len1,int *arr2,int len2) accepts two integer arrays
arr1,arr2 of length len1,len2 respectively.
It is supposed to return the largest element in both the input arrays. Another function
sortArray(int *arr,int len) sorts the input array arr
of length len in ascending order and returns the sorted array.
Your task is to use sortArray(int *arr,int len) function and
complete the code in findMaxElement(int *arr1,int len1,int *arr2,int len2)
so that it passes all test cases.
TESTCASE 1:
Input:
[2, 5, 1, 3, 9, 8, 4, 6, 5, 2, 3, 11], 12,
[11, 13, 2, 4, 15, 17, 67, 44, 2, 100, 0, 23]11 Expected Return Value:
100
TESTCASE 2:
Input:
[100, 22, 43, 912, 56, 89, 85], 7, [234, 123, 456, 234, 890, 101], 6 Expected Return Value:
912
*/
int *sortArray(int *arr,int *len)
int i=0,j=0,temp=0,index=0; for(i=0;i<len;i++)
for(j=i+1;j<len;j++) {
if(arr[i]>arr[j]) {
```

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```
temp=arr[i]; arr[i]=arr[j]; arr[j]=temp;
} }
return arr; }
findMaxElement(int *arr1,int len1,int *arr2,int len2) {
//write down the code }
void patternPrint(int n) {
int print=1,i,j; for(int i=0;i< n;i++) {
for(j=0;j<=i;j++) {
printf("%d",print); }
print("\n");
} }
The method deleteDuplicate(int arr[]) of class DistinctArray takes an
array as an input it is supposed to remove duplicates integers from
the input array arr such that for each distinct integer the first occurrence
is retained and all the duplicates elements following it are removed for Example given input
array (2,3,2,2,5,6,6,7) the expected output
is (2,3,5,6,7) */
public class DistinctArray {
public static int[] deleteDuplicate (int arr[]) {
int count=0,p,len=arr.length ,i,j,k,originalLength=len; for(i=0;i<len;i++)
for(j=i+1;j<len;j++) {
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```

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```
if(arr[j]==arr[i]) {
  arr[k]=arr[k+1]; }
  len=len-1; count=count+1; j=i;
}
int newlength = originalLength-count;
int newArr[]=new int[newlength];
for(i=0;i<newLength;i++)
  newArr[i]=arr[i];
return newArr;
}
}
/*</pre>
```

The method manchester (int arr) of class signal accepts an array arr as an input. Each element of arr represents a bit 0 or 1. The output is an array

with the following property for each element in the input array arr. If the bit arr[i] is the same as arr[i-1], then the element of the output array is 0, iIf they are different then its 1. For the first bit in the input array, assume

its previous bit to be 0. This encoding is stored and returned in a new array. For e.g if arr is $\{0, 1, 0, 0, 1, 1, 1, 0\}$ the function should return an array $\{0, 1, 1, 0, 1, 0, 0, 1\}$.

The function compiles successfully but fails to return the desired result due to logical errors. Your task is to debug the program to pass all test cases.

```
TESTCASE 1:
Input:
[1, 1, 0, 0, 1, 0] Expected Return Value: [1, 0, 1, 0, 1, 1] TESTCASE 2:
Input:
[0, 0, 0, 1, 0, 1, 1, 1] Expected Return Value: [0, 0, 0, 1, 1, 1, 0
*/
public class Signal {

public static int[] manchester(int arr[]) {

int len=arr.length; int res=new int[len]; boolean result; res[0]=arr[0]; for(int i=1;i<len;i++) {
```

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```
result=(arr[i]==arr[i-1]); res[i]=(result)?1:0;
} }
return res; }
/*You are required to fix all logical errors in the given code. You can click on Compile
& Run anytime to check the compilation/execution status of the program. You can use
System.out.println to debug your code. The submitted code should be logically/syntactically
correct and pass all test cases. Do not write the main() function as it is not required.
Code Approach: For this question, you will need to correct the given implementation We do
not expect you to modify the approach or incorporate any additional library methods.
The function sortArray(int * arr,int len) accepts an integer array
arr of length (len>0) as an input and perform an in place sort operation
on it. The function is expected to return the input array sorted in
descending order The function complies successfully but fails to return
the desired results due to logical errors
Your task is to debug the program to pass all the test cases TESTCASE 1:
Input:
[23, 12, 14, 24, 21], 5
Expected Return Value:
[24, 23, 21, 14, 12]
TESTCASE 2:
[1, 1, 1, 1, 1], 5 Expected Return Value: [1, 1, 1, 1, 1]
int * sortArray(int *arr,int len ) {
int i,max,location,j,temp; for(i=0;i<len;i++)
{
\max=\arctan[i]; location=i; for(j=i+1;j<len;j++) 
if(max<arr[j]) {</pre>
max=arr[j];
```

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```
location=j; }
} temp=arr[location]; arr[location]=arr[i]; arr[i]=temp;
return arr;
} }
TESTCASE 1:
Input:
[2, 5, 8, 11, 3], 5 Expected Return Value: [11, 11, 11, 11, 11]
TESTCASE 2:
Input:
[3, 2, 5, 8, 9, 11, 23, 45, 63], 9 Expected Return Value:
[63, 63, 63, 63, 63, 63, 63, 63, 63] */
int* maxReplace(int *arr, int len) {
int i; if(len>0) {
int max=arr[0]; for(i=0;i<len;i++) {
if(max<arr[i]) max=arr[i];</pre>
} }
for(i=0;i<len;i++) arr[i]=max; return arr;
}
/*This method countOccurance (int arr[], int value) of class occurrence is supposed to return
the count of occurrences of a number value in the
input array arr. The function compiles successfully but fails to return the
desired result due to logical errors.
Your task is to debug the program to pass all test cases. */
public class Occurrence
public static int Occurrence (int arr[], int value) {
```

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```
int i=0, count=0, len=arr.length; while(i<len)
{

if(arr[i]==value) count++;
}

return count; }
}
/*</pre>
```

The function getarraysum(int * arr,int len)is supported to calculation and return the sum of elements of the input array arr of length len(len>0)

The function compiles successfully but fails to return the desired result due to logical errors.

```
*/
int getarraysum(int *arr,int len)
{
  int sum = 0; for(i=0;i<len;i-i-1) {
  sum = arr[i]; }
  return sum; }</pre>
```

/* The Least-Recently-Used(LRU) cache algorithm exists the element from the cache(when it's full) that was least-recently-used. After an element is requested from the cache, it should be added to the cache (if not already there) and considered the most-recently-used element in the cache.

Given the maximum size of the cache and a list of integers(to request from the cache), calculate the number of cache misses using the LRU cache algorithm. A cache miss occur when the requested integer does not exist in the cache.

Initially, the cache is empty.

The input to the function lruCountMiss shall consist of an integer max_cache_size, an array pages and its length len.

The function should return an integer for the number of cache misses using the LRU cache algorithm.

Assume that the array pages always has pages numbered from 1 to 50.

```
37. TESTCASE 1:
```

Input:

3,[7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0],16

Expected Return Value:

11

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```
TESTCASE 2:
Input:
2,[2,3,1,3,2,1,4,3,2],9
Expected Return Value:
Explanation:
The following page numbers are missed one after the other 2,3,1,2,1,4,3,2. This results in 8
page misses.
/*You are a software developer at ABC technologies. You are supposed to enhance the
functionality of a particular module which control a functionality based on date of logging.
Given two date, your task is to write a method which calculates the difference between them.
The difference (which shall always be zero o0r a positive number) would then be used by
another module to perform checks on logging.
Developer at ABC technologies already use a pre-defined class date containing day, month
and year as members and also a collection of method for performing some common
operations. You are supposed to make use of these methods to calculate and return the
difference.
(Please refer to the Helper Code tab for details regarding the class)
The method difference in dates has to be completed which takes two date instances as inputs
and returns the difference.
TESTCASE 1:
Input:
2/5/2013, 2/6/2013
Expected Return Value:
31
TESTCASE 2:
Input:
1/6/2011, 1/6/2012 Expected Return Value: 366
Public class DateComparer
Public static int difference_in_dates(Date date1, Date date2)
//write your code
return 0:
```

The methods GetDigitSum(int arr[]) of class DigitSum accepts an integers array arr it is supposed to calculate the sum of digits of the even of the smallest elements in the input array it returns 1 if the calculated sum is even and returns 0 otherwise

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However there is a compliation error in the code your task is to fix it so that the program works for all the input values

```
public class Digitsum {
public static int getDigitSum(int arr[]) {
int result, len=arr.length;
for(int i=0;min=arr[0];i<len;i++) {
if(arr[i]<min) min=arr[i];</pre>
} results=getSum(min); if(results%2==0)
return 1; else
min==arr[i]; }
} }
int getsum(int num) {
int sum=0;
while (num) {
sum=sum+(num%10);
num=num/10; }
return sum; }
/*The function patternPrint(int n) supposed to print n number of lines in
the following pattern
For n=4 the pattern should be:
1
11
111
The function complies successfully but fails to return the desired results due to logical errors
Your task is to debug the program to pass all the testcases
```

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```
void patternPrint(int n)
int print=1,i,j; for(int i=0;i< n;i++) {
for(j=0;j<=i;j++) {
printf("%d",print);} }
print("\n"); }
/*The function countDigits (int num) is supposed to reurn the remainder
when the input argument num (num>0) is divided by the number of digits
The function compiles successfully but fails to return the desired result due to logical errors.
Your task is to debug the program to pass all test cases
int countDigits(int num)
int count=0; while(num!=0) {
num=num/10;
count++; }
return (num%count); }
TESTCASE 1:
Input:
[-2, -4, -3, -5, -6, -7, -8], 7, 3 Expected Return Value:
TESTCASE 2:
Input:
[22, 55, 66, 33, 44, 77], 6,13 Expected Return Value:
*/
int countElement(int arr,int len,int n) {
int i,count=0;
for(int i=0;i< len;i++) {
```

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```
if(arr[i]>(2*n)) {
count=+1;
return count;
/*
TESTCASE 1:
Input:
[1, 2, 3, 4, 5, 6, 7] Expected Return Value: [7, 6, 5, 4, 3, 2, 1] TESTCASE 2:
[2, 8, 4, 6]
Expected Return Value: [6, 4,8, 2]
public class SortArray {
public static int[] reverseArray(int arr[]) {
int i, temp, orginallen=arr.length; int len=orginallen; for(i=0;i<orginallen/2;i++)
temp=arr[len-1]; arr[len-1]=arr[i]; arr[i]=temp; len+=1;
}
return arr; }
}
The function removeElement( int *arr,int len,int index)takes an array arr of length len as an
input. It is supposed to return an array len-1 after
removing the integer at the given index in the input arrayarr. If the given index is out of
bounds, then this function should return the input
array arr.
The function compiles successfully but fails to return the desired result due to logical errors
int* removeelement( int *arr,int len,int index)
int i,j;
```

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```
if(index<len) {
for(i=index;i<len-1;i++)
arr[i]=arr[i++];
int *rarr =(int*)malloc(sizeof(int)*(len-1)); for(i=0;i<len-1;i++)
rarr[i]=arr[i];
return rarr:
}
else return arr; }
/*Problem
The method sortArray(int arr[]) of class Selection sort an integer array arr as input and
perform an in place selection sort. The function an input array sorted as ascending order
The function compiles fine but to return desired results for some cases
Your task to fix the code so but that it passes at test cases
Assumption:
In this particular implementation sort the smallest elements in the array is swapped with the
elements of the next index and so on
Program
*/
public class SelectionSort
public static int[] sortArray(int arr[])
int x=0,y=0,n=arr.length;
for(x=0;x< n;x++)
int index_of_min = x;
for(y=x;y< n;y++)
If(arr[index_of_min]>arr[x])
Index_of_min=y;
Int temp=arr[x];
Arr[x]=arr[index_of_min];
arr[index_of_min]=temp;
```

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```
return arr;
Public class arrayCount
Public static int sameElementCount(int arr[])
int len=arr.length,i,count=0;
for(i=0;i<len;i++) {
if((arr[i]\%2==0)\&\&(arr[i]==arr[i++])) count++;
return count;
public class color {
public static void printcolor(int num) {
switch (num) {
case 1: system.out.println("red");
case 2: system.out.println("black");
case 3: system.out.println("white");
case 4: system.out.println("green");
default:
system.out.println("no color");
break; }
} }
public calss Array {
public static int[] sortArray(int arr[]) {
int len=arr.lemgth;
int small,pos,i,j,temp; for(i=0;i<=len-1;i++)
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```

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```
{ for(j=i;j<len;j++) {
Temp=0; if(arr[i]>arr[j])
temp=arr[i]; arr[i]=arr[j];
return arr;
public calss Array {
public static int[] sortArray(int arr[]) {
int len=arr.lemgth;
int small,pos,i,j,temp;
for(i=0;i<=len-1;i++) {
for(j=i;j< len;j++)
Temp=0; if(arr[i]>arr[j]) {
temp=arr[i]; arr[i]=arr[j];
return arr;
Problem
```

You are required to complete the given code by reusing existing functions .you can click on complie and run any time to check the compilation / execution status of the program you can use System.out.println to debug your code. The submitted code should be logically/syntactically correct and pass all testcases .do not write the main() function has it is not required

Code Approach For this question you will need to complete the code as in given implementation.we don't expect you to modify the approach

You are given a pre-defined structure Point and also a collection of related functions which can be used toperform some basic operations on the structure. You will have to implement the function isRightTriangle(Ppoint *P1, Point *P2,Point *P3) which accepts 3 points as input and checks whether the given 3 points can make a right angle triangle or not.

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If they make a right angle triangle the function returns 1 else if returns 0.

/*You are required to complete the given code by reusing existing functions.click on the helper code tab to find out the details of functions/classess provided for reuse you can click on compile&run anytime to check the compilation /execution status of the program you can use system,out,println to debug your code The submitted code should be logically/syntactically correct and pass all testcase . . Do not write the main() function as it is not required.

Code Approach: For this question, you will need to correct the givenimplementation. We do not expect you to modify the approach or incorporate any additional library methods. You are given a pre defined class PrimeBank containing of methods to perform some basic operations

You will have to implement the methods PrintPrime(int num,int n)which accepts initial number num and number of digits n as inputs and prints all the numbers of n digits starting from the initial number num

you supposed to use Prime Bank class and associated methods of task */
/*

The function findMinElement(int *arr1,int len1,int *arr2,int len2)

accepts two integer arrays arr1,arr2 of length len1,len2 respectively. It is supposed to return the smallest element in both the input arrays. Another function sortArray(int *arr,int len) sorts the input array arr of

length len in ascending order and returns the sorted array. Your task is to use sortArray(int *arr,int len) function and complete the code in findMinElement(int *arr1,int len1,int *arr2,int len2)

so that it passes all test cases.

```
*/
Public class MinArray {

Public static int[] sortArray(int[] arr) {

int i=0,j=0,temp=0,index=0; for( i=0;i<arr.length;i++) {

for(j=i+1;j<arr.length;j++) {

if(arr[i]>arr[j]) {

temp=arr[i]; arr[i]=arr[j]; arr[j]=temp;
```

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```
} }
} return arr;
public static int findMinElement(int arr1[],int len1 , int arr2[],int len2) {
//your code
} }
#include<stdio.h> Int main()
int num,count=0; scanf("%d",num); while(num)
Num=num/10;
Count++;
Printf("%d",count);
/*Input
[1,1,1,0,1,1,1,1],2
Expected return value: [0,0,0,0,0,1,1,0]
int* cellcompete(int* cells, int days) {
}
int main() {
int cells[8]=\{1,1,1,0,1,1,1,1\};
int days=2,index; cellcompete(cells,days); for(index=0; index < 8; index++)
printf("%d ",cells[index]); }
/*•
```

You are required to complete the given code by reusing existing functions.click on the helper code tab to find out the details of functions/classess provided for reuse you can click on compile&run anytime to check the compilation /execution status of the program you can use system,out,println to debug your code The submitted code should be logically/syntactically correct and pass all testcase . Do not write the main() function as it is not required. Code Approach: For this question, you will need to correct the givenimplementation. We do not expect you to modify the approach or incorporate any additional library methods.

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The function countElement(int *arr,int len,int n) is supposed to return the numbers of elements in the inputs array arr of length len,which are greater than input number n

The function looks fine but given a compilation error

Your task is to fix the program so that it passes all the testcases PROGRAM:

```
*/
int countElement(int arr,int len,int n) {

Int i,count=0;
For(int i=0;i<len;i++) {

If(arr[i]>2n)
{

Count=-1;
}

Return count; }
```

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