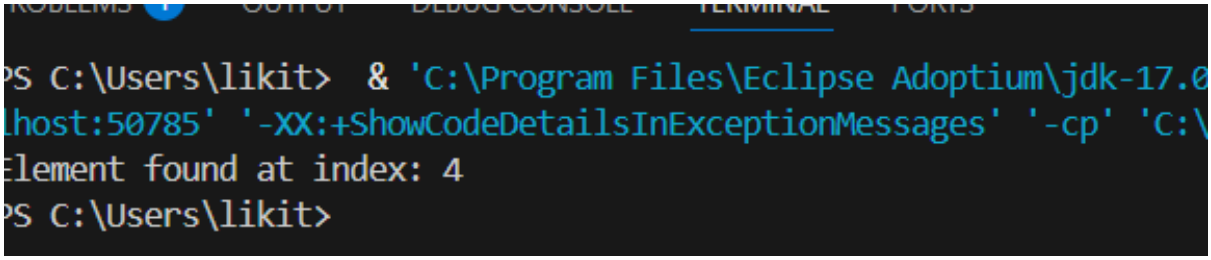
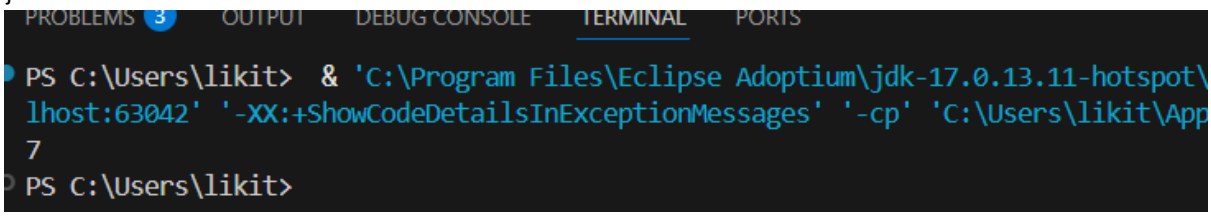
TASK2:

```
class Main {
 public static int binarySearch(int[] arr, int target) {
       int low = 0;
       int high = arr.length - 1;
       while (low <= high) {
          int mid = (low + high) / 2;
              if (arr[mid] == target) {
             return mid;
          }
          else if (arr[mid] > target) {
             high = mid - 1;
          }
          else {
             low = mid + 1;
          }
       }
       return -1;
    }
    public static void main(String[] args) {
       int[] arr = {2, 4, 5, 6, 77, 88, 99};
       int target = 77;
       int result = binarySearch(arr, target);
       if (result != -1)
          System.out.println("Element found at index: " + result);
       else
          System.out.println("Element not found");
    }
}
```



Task3:

```
class Maximum{
    public static void main(String args[]){
        int max=0;
        int arr[]={1,2,3,4,5,6,7};
        for(int i=0;i<arr.length;i++){
            int temp=arr[i];
            if(arr[i]>=max){
                max=arr[i];
            }
        }
        System.out.print(max);
    }
}
```



Task 4

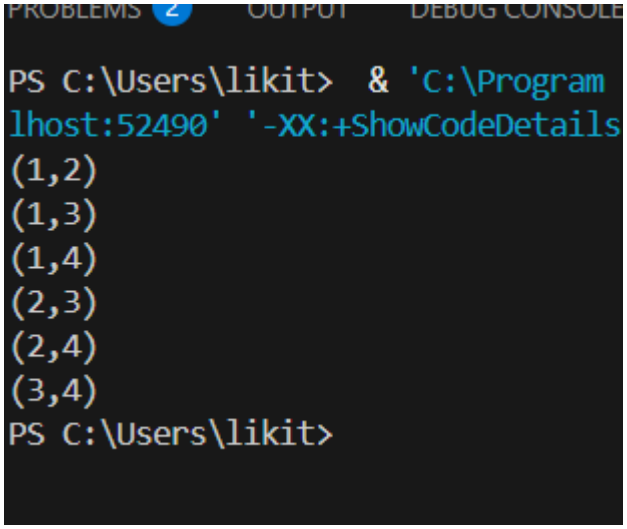
```
class Kthsmallest {
    public static int findsmallest(int[] arr, int k) {
        int n = arr.length;
        for (int i = 0; i < k; i++) {
            int minIndex = i;
            for (int j = i + 1; j < n; j++) {
                if (arr[j] < arr[minIndex]) {
                    minIndex = j;
```

```
            }
            int temp = arr[i];
            arr[i] = arr[minIndex];
            arr[minIndex] = temp;
        }
        return arr[k - 1];
    }
    public static void main(String[] args) {
        int[] arr = {7, 10, 4, 3, 20, 15};
        int k = 3;
        System.out.println("Kth smallest element: " + findsmallest(arr, k));
    }
}
```

```
PS C:\Users\likit> & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.13.11-hotspot\bin\java.exe' '-agentlib:jdwp=tra
lhost:59471' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\likit\AppData\Local\Temp\vscodesws_6a45f\jc
Kth smallest element: 7
PS C:\Users\likit>
```

TASK 5

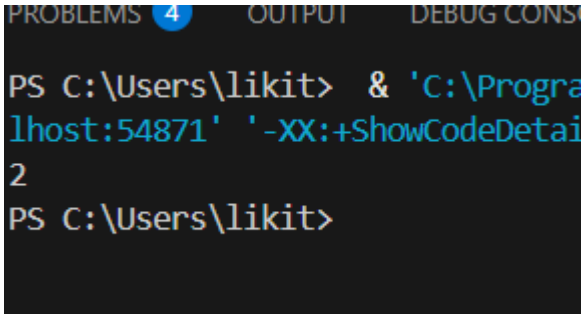
```
public class Pairs {
    public static void main(String args[]){
        int arr[]={1,2,3,4};
        int n=arr.length;
        for(int i=0;i<n;i++){
            for(int j=i+1;j<n;j++){
                System.out.println("("+arr[i]+","+arr[j]+")");
            }
        }
    }
}
```



Task6

```
public class Sumofdigits {
    public static void sumofevenandodd(int num){
        int sum=0;
        while(num > 0){
        if(num%2==0){
            int reminder=num%10;
            if(reminder%2==0){
                sum=reminder+sum;
                num=num/10;
            }
        }
        else{
            int reminder=num%10;
            if(reminder%2!=0){
                sum=reminder+sum;
                num=num/10;
            }
        }
    }
    System.out.print(sum);
}
```

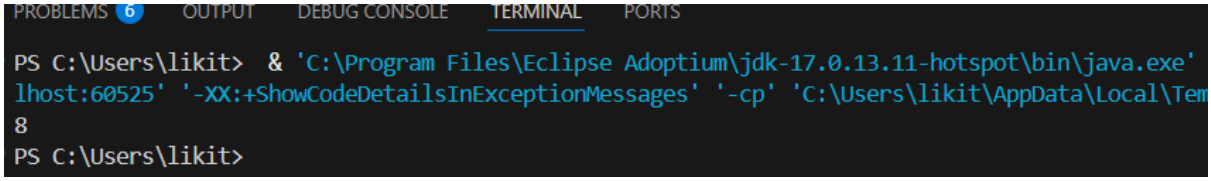
```
    public static void main(String args[]){
        Sumofdigits s1=new Sumofdigits();
        s1.sumofevenandodd(11);
    }
}
```



Task7:

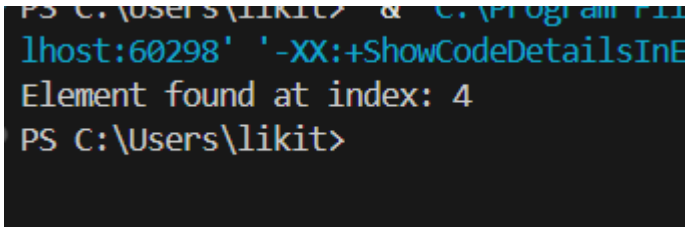
```
public class Nthfibonacci {
    public static void fibonacci(int num) {
        int firstnum = 0;
        int secondnum = 1;
        int result;
        if (num == 0) {
            System.out.println(firstnum);
            return;
        }
        else if (num == 1) {
            System.out.println(secondnum);
            return;
        }
        for (int i = 2; i <= num; i++) {
            result = firstnum + secondnum;
            firstnum = secondnum;
            secondnum = result;
        }
        System.out.print(secondnum);
```

```
    }
    public static void main(String[] args) {
        Nthfibonacci n1 = new Nthfibonacci();
        n1.fibonacci(6);
    }
}
```



TASK9:

```
class Main {
    public static boolean isPalindrome(int num) {
        int original = num;
        int rev = 0;
        while (num > 0) {
            int digit = num % 10;
            rev = rev * 10 + digit;
            num = num / 10;
        }
        return original == rev;
    }
    public static void main(String[] args) {
        int num = 121;
        if (isPalindrome(num))
            System.out.println("Palindrome Number");
        else
            System.out.println("Not a Palindrome Number");
    }
}
```



TASK10

```
public class Sumoflast2 {
   public static void main(String args[]){
      int num=128;
      int sum=0;
      int count=1;
      while(num != 0&&count<=2){
         int res=num%10;
         sum=res+sum;
         count++;
         num=num/10;
      }
      System.out.print(sum);
   }
}
```