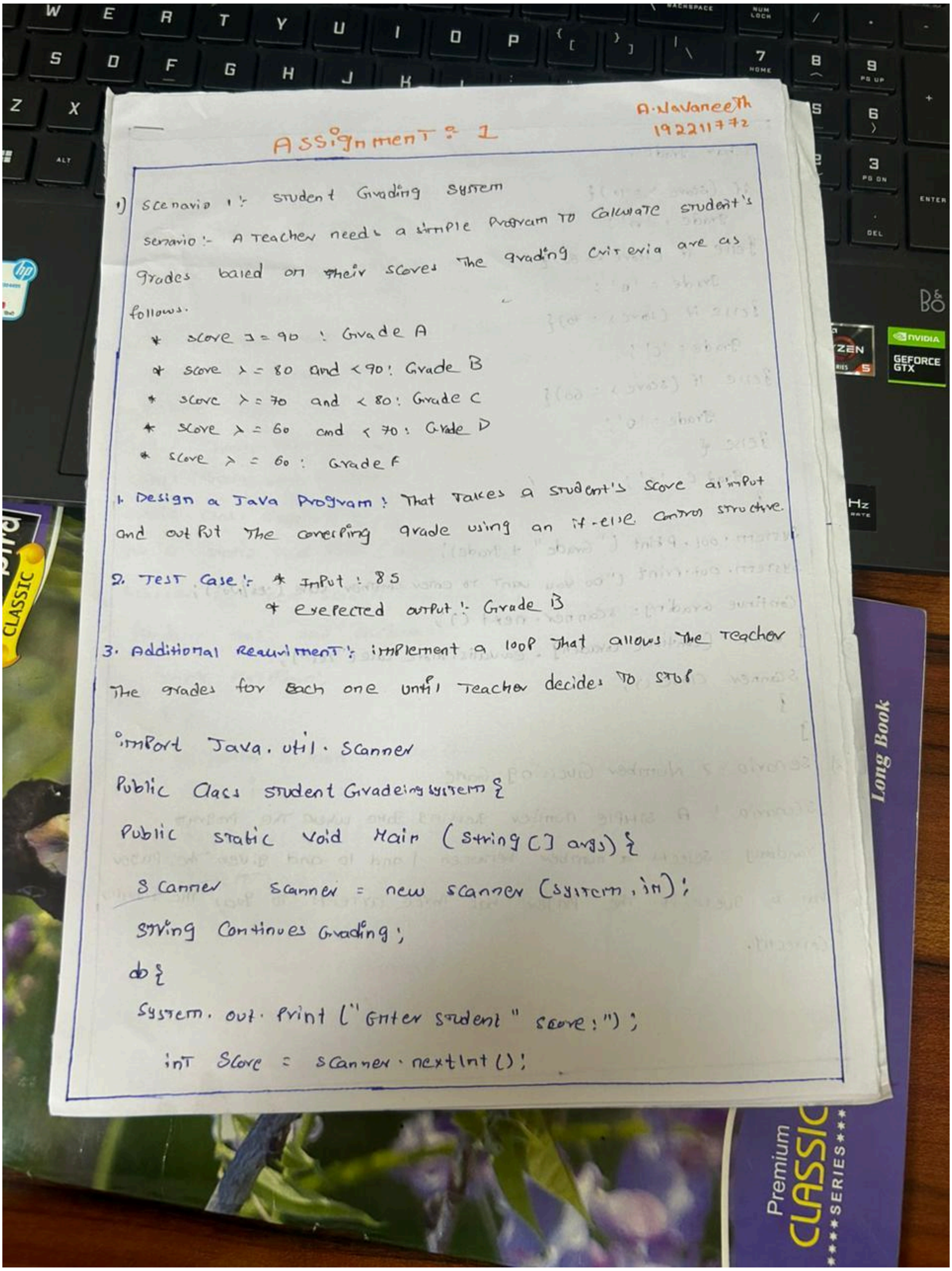


A.Navaneeth
192211772

Assignment : 1

1) Scenario 1 :- Student Grading system

senario :- A Teacher needs a simple Program To Calculate student's grades based on their scores The grading criteria are as follows.

- * score >= 90 : Grade A
- * score >= 80 and <90: Grade B
- * score >= 70 and < 80: Grade C
- * score >= 60 and < 70: Grade D
- * score >= 60 : Grade F

1. Design a Java Program : That Takes a student's score as input and output The corresponding grade using an if-else control structure.

2. Test Case :- * Input : 85
   * expected output :- Grade B

3. Additional Requirement : implement a loop That allows The Teacher The grades for each one until Teacher decides To stop

```
import Java.util.Scanner
Public Class Student Gradeing system {
Public static void Main (String [] args) {
 Scanner  scanner = new scanner (system.in);
 String Continues Grading;
 do {
 System.out.Print ("Enter student" score:");
   int Score = scanner.nextInt();
Char grade;
if (score >= 90){
   grade = 'A';
}else if (score >= 80){
    grade = 'B';
}else if (sore> = 70){
   grade = 'C';
}else if (score > = 60){
     grade = 'D';
}else {
   grad e= 'F';
}
System.out.Print ("Grade" + grade);
System.out.print ("Do you want to enter another score (Yes/No:);
Continue Grading = scanner.next ();
} while (continue Grading.equalsignore Case("Yes"));
Scanner close ();
  }
}
```

2) Senario :- 2 Number Guessing Game

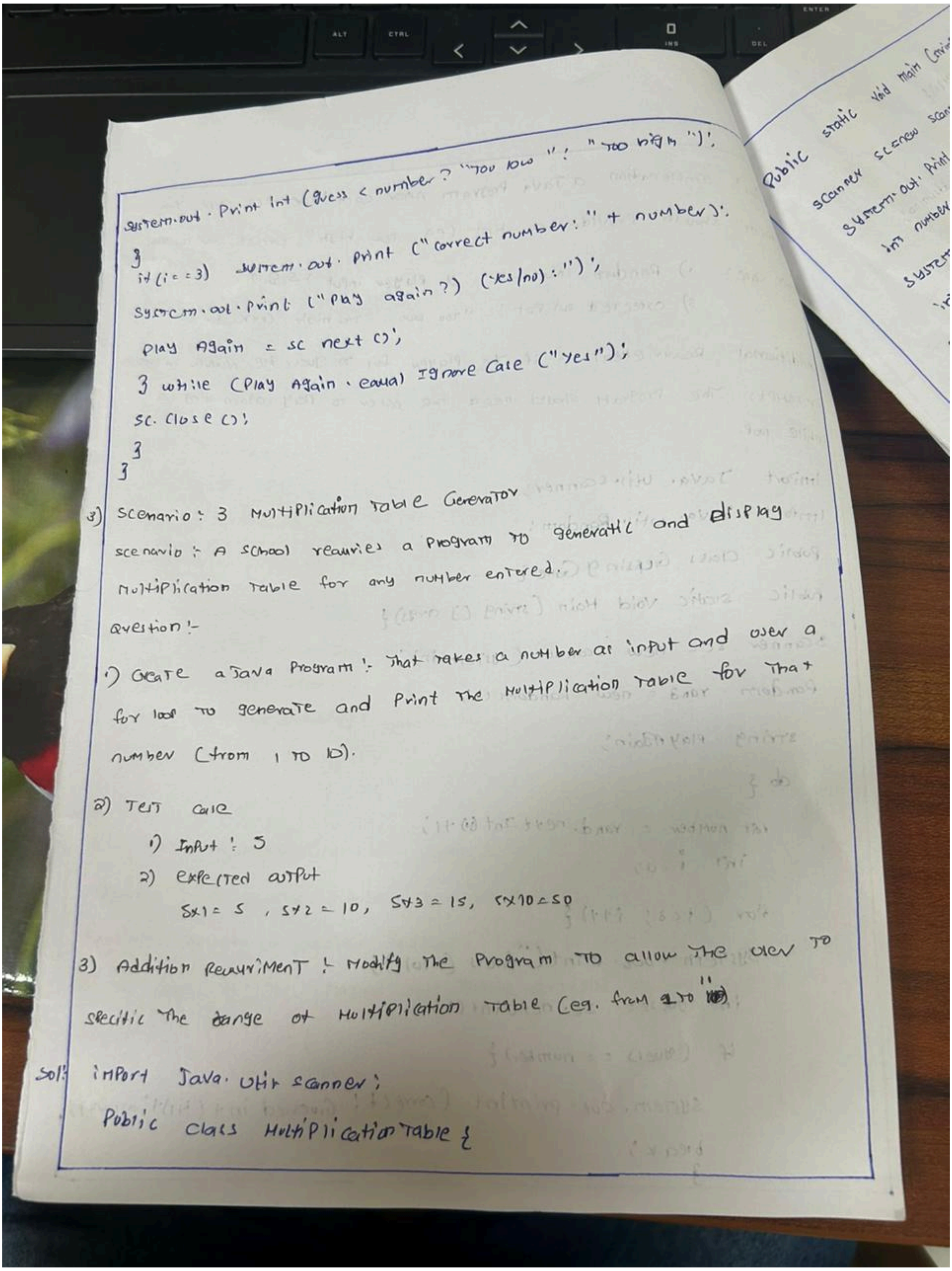
Scenario :- A simple number guessing game where the Program randomly selects a number between 1 and 10 and given the player has to guess it. The Player has three attempts to guess the Number Correctly.

Question : Implenation a Java Program After each incorrect gues the program should provide a hint (eg. Too high" correct" or Too low).

2) Test case : 1) Random Num : 7 2) player input : 5, 8, 7
3) expected out Put : "Too low, "Too high "correct.

3) Additional Requriement : if the player fail to gues the Number in three attempts. The Program should need the offer to Play again using a while loop.

```
import Java. util. scanner;
import Java. util. Random:
Public class Gessing Game {
Public static void Main (string [] args) {
scanner sc = new scanner (system.in);
 Random rand = new Random ();
   string playAgain;
    do {
     int number = rand. next Int (10) +1;
      int i = 0;
     for (i<3; i++) {
     system . out. print ("Guess (1-10):);
       int guess = sc. next int ();
       if (guess = = number) {
         system. out. printint (correct! Guessed in + (i+1)+" attempt);
         break;
         }
```



```
system.out.Print int (guess < number ? "Too low " : "Too high ");
}
if (i = = 3)  system.out.print ("correct number:" + number);
system.out.print ("Play again?) (yes/no) :");
 play Again = sc next ();
} while (Play Again.equal) Ignore Case ("yes");
sc. close ();
 }
}
```

3) Scenario: 3 Multiplication Table Generator

Scenario :- A school requries a Program to generatic and display Multiplication Table for any number entered.

Question :-

1) Create a Java Program :- That takes a number as input and over a for loop to generate and Print the Multiplication Table for That number (from 1 To 10).

2) Test case

   1) Input : 5

   2) expected output

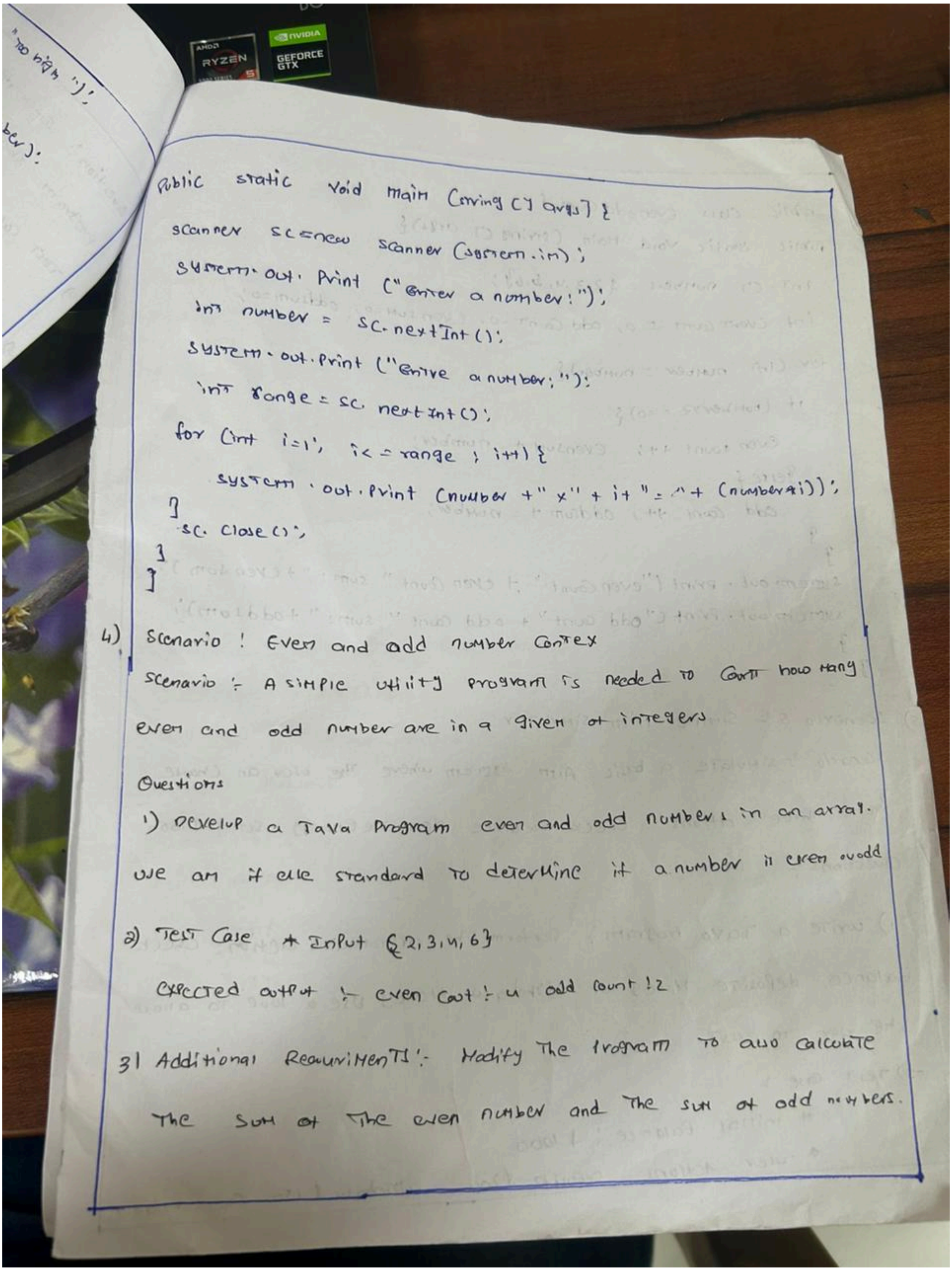
      5x1 = 5 , 5x2 = 10, 5x3 = 15, 5x10 = 50

3) Addition Requriment :- Modify The Program To allow The user To specific The range of Multiplication Table (eg. from 1 To 11)

Sol:

```
import Java.util scanner;
 Public class MultiPlication Table {
```

```
Public static void main (Strin
Scanner sc=new Scan
System.out.Print
int number
System
```



```
Public static void main (string [] args] {
 scanner sc=new scanner (system.in);
 system.out.Print ("Enter a number:");
  int number = sc.nextInt();
 system.out.print ("Entre a number:"):
  int range = sc. next Int();
 for (int i=1', i<=range ; i++) {
    system.out.Print (number +" x" + i+ "= "+ (number*i));
 }
  sc. close();
 }
}
```

4) Scenario ! Even and add number Contex

Scenario :- A simple utility program is needed to Cont how many even and odd number are in a given of integers

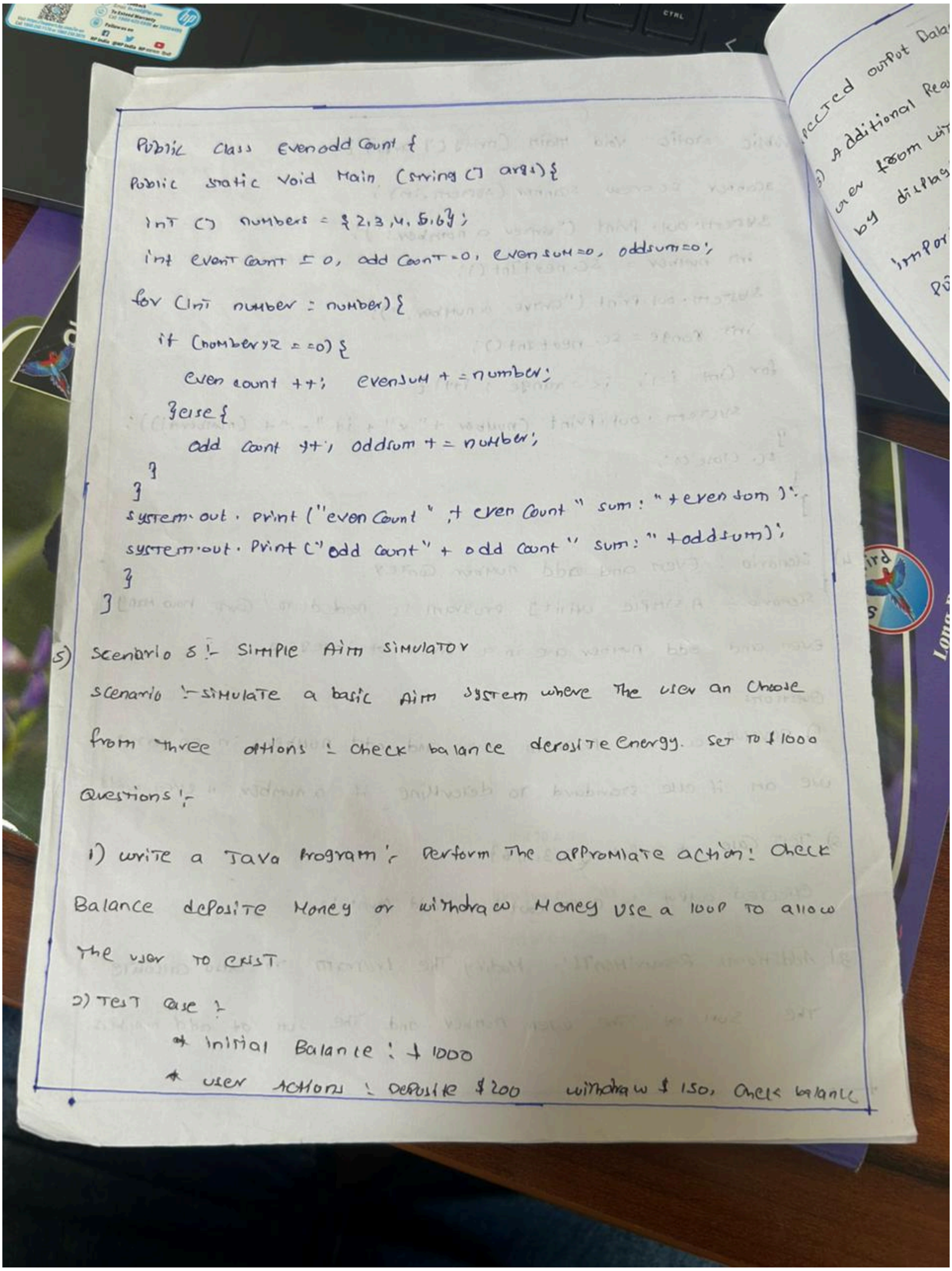
Questions

1) Develup a Java Program even and odd numbers in an array. we am if else standard to determine if a number is even or odd

2) Test Case * Input {2,3,4,6}

Expected output :- even Cout :- 4 odd count !2

3) Additional Requirments :- Modify The Program To also Calculate The sum of The even number and The sum of odd numbers.



```
Public Class Evenodd Count {
Public static Void Main (string [] args){
 int [] numbers = {2,3,4,5,6};
 int evenT Count = 0, add CounT =0, evenSuM=0, oddsum=0;
for (int number : number) {
   if (numbery2 = =0) {
     even count ++;   evenSuM + = number;
   }else{
     odd Cont ++;  oddsum + = number;
   }
 }
systemout. print ("even Count ",+ even Count " sum: "+even sum ):
systemout. Print ("odd Count" + odd Count " sum: " +oddsum);
 }
}
```

5) Scenario 5 :- Simple Atm simulator

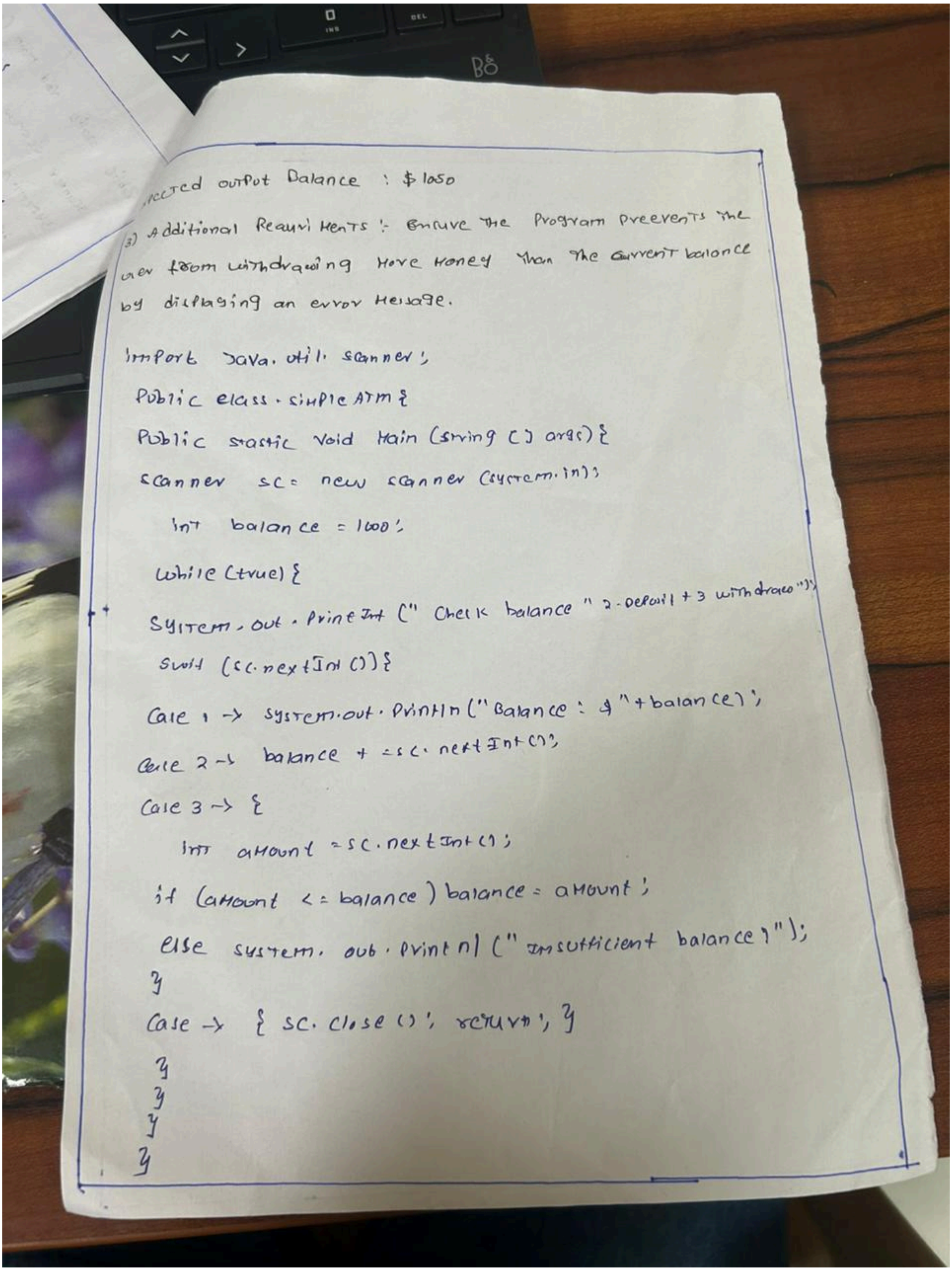
scenario :- simulate a basic Atm system where The user an Choose from three ottions : check balance derosiTe energy. Set To $ 1000

Questions :-

1) write a Java Program :- Perform The appromiaTe action: check Balance dePosiTe Money or withdraw Money use a loop To allow The user TO exist.

2) Test Case :-

- Initial Balance : $ 1000
- user Actions : Deposite $ 200 withdraw $ 150, Check balance



pecTed output Balance : $ 1050

3) Additional Reaurimants :- Ensure the Program preevents the uer from withdrawing More Money than the Current balance by displaying an error Message.

```
import Java. util. scanner;
 Public class. simple ATM {
 Public static void Main (string [] args) {
 scanner  sc = new scanner (system. in);
   int  balance = 1000;
  while (true) {
  Sytem. out. print Int (" Check balance " 2-Depoil + 3 withdraw");
   swit (sc.nextInt ()) {
  Case 1 -> system.out. Println (" Balance : $ "+ balance);
 Case 2 -> balance + = sc. nextInt ();
 Case 3 -> {
    int  aMount = sc. nextInt ();
  if (aMount <= balance ) balance = aMount ;
  else  system. out. printnl (" Insufficient balance ) ");
  }
  Case -> { sc. close (); return; }
  }
  }
  }
 }
```