Q.1-> Write a java program to check matrix is identity or not

Program->

```
package com.destination.assignmentoct14;
import java.util.Scanner;
class identity{
	int m[][];
	int row;
	int col;

	void createArray(int a, int b) {
		 row=a;
		 col=b;
		m=new int[row][col];



	}
	void addData() {
		Scanner sc=new Scanner(System.in);
		System.out.println("collecting the array data ");
		for(int i=0;i<row;i++) {
			for(int j=0;j<col;j++) {
				System.out.println("Enterr the array value");
				m[i][j]=sc.nextInt();
			}
		}
	}


	void display() {
		System.out.println("displaying the array");
		for(int i=0;i<row;i++) {
			for(int j=0;j<col;j++) {
				System.out.print("   "+m[i][j]);
			}
			System.out.println();
		}
	}

	void check() {
		 boolean isIdentity = true;
		  for (int i = 0; i < row; i++) {
		      for (int j = 0; j < col; j++) {
		          if (i == j && m[i][j] != 1) {
		              isIdentity = false;
		              break;
		          } else if (i != j && m[i][j] != 0) {
		              isIdentity = false;
		              break;
```

```
                    }
                }
            }

            if (isIdentity)
                System.out.println("The matrix is an identity
matrix.");
             else
                System.out.println("The matrix is not an identity
matrix.");


}
}



public class identityMatrix {
      public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter the row number");
            int a=sc.nextInt();
            System.out.println("Enter the column number");
            int b=sc.nextInt();
            identity ab=new identity();
            ab.createArray(a,b);
            ab.addData();
            ab.display();
            ab.check();

      }
}
```

Q.2-> Write a java program to calculate the sum of given array

Program->

```
package com.destination.assignmentoct14;
import java.util.Scanner;
class sumArray{
      int m[];
      int size;
      int sum=0;

      void CreateArray(int n) {
            size=n;
```

```
            m=new int[size];
            System.out.println("Array is created successfully");
      }

      void addData() {
            Scanner sc=new Scanner(System.in);
            for(int i=0;i<size;i++) {
                  System.out.println("Enter the array element");
                  m[i]=sc.nextInt();
                  }
      }

      void display() {
            System.out.println("Array element is ");
            for(int i=0;i<size;i++) {
                  System.out.print("  "+m[i]);
            }

            System.out.println();
      }

      void sum() {
            for(int i=0;i<size;i++) {
                  sum=sum+m[i];
            }

            System.out.println("Sum of array is "+sum);
      }
}


public class SumOfArray {
      public static void main(String[] args) {
            sumArray ab=new sumArray();
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter the size of array");
            int n=sc.nextInt();
            ab.CreateArray(n);
            ab.addData();
            ab.display();
            ab.sum();
      }

}
```

Q.3-> Write java program to print the highest element from the given array

Program->

```
package com.destination.assignmentoct14;
import java.util.Scanner;
class HighArr{
	int m[];
	int size;
	int min=0;

	void CreateArray(int n) {
		size=n;
		m=new int[size];
		System.out.println("Array is created successfully");
	}

	void addData() {
		Scanner sc=new Scanner(System.in);
		for(int i=0;i<size;i++) {
			System.out.println("Enter the array element");
			m[i]=sc.nextInt();
			}
	}

	void display() {
		System.out.println("Array element is ");
		for(int i=0;i<size;i++) {
			System.out.print("  "+m[i]);
		}

		System.out.println();
	}

	void checkHigh() {
		for(int i=0;i<size;i++) {
			if(min<m[i]) {
				min=m[i];
			}

		}
		System.out.println("The highest value of an array is=
"+min);


	}
}


public class HighestValOfArr {
```

```
	public static void main(String[] args) {
		HighArr ab=new HighArr();
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter the size of array");
		int n=sc.nextInt();
		ab.CreateArray(n);
		ab.addData();
		ab.display();
		ab.checkHigh();
	}

}
```

Q.4-> write a java program to print the duplicate element of given array

Program->

```
package com.destination.assignmentoct14;
import java.util.Scanner;
class duplicate{
	int m[];
	int size;
	int dub[];
	int count;



	void createArray(int n){
		size=n;
		m=new int[size];
		System.out.println("Array is created successfully");
	}

	void addData() {
		Scanner sc=new Scanner(System.in);
		for(int i=0;i<size;i++) {
			System.out.println("Enter the array element");
			m[i]=sc.nextInt();
			}
	}

	void display() {
		System.out.println("Array element is ");
		for(int i=0;i<size;i++) {
			System.out.print("  "+m[i]);
		}

		System.out.println();
```

```
	}

	void checkdup(){
	    dub=new int[size];
	    count=0;
	     boolean value=false;
	     System.out.println("found duplicate elemenent is ");
	     for(int i=0;i<size;i++) {
	          for(int j=i+1;j<size;j++) {
	                    if(m[i]==m[j]) {
	                       boolean alreadyadded=false;
	                       for(int k=0;i<count;i++) {
	                          if(dub[k]==m[i]) {
	                               alreadyadded=true;
	                               break;
	                          }

	                        }

	                       if (!alreadyadded) {
	                        dub[count] = m[i];
	                        System.out.print(" " + dub[count]);
	                        count++;
	                    }
	                    value = true;
	                    }
	               }


	          }
	     if(value==false) {
	          System.out.println("Duplicate element not found");
	     }


	}


}


public class duplicateElmOfArr {
	public static void main(String[] args) {
	     duplicate ab=new duplicate();
	     Scanner sc=new Scanner(System.in);
	     System.out.println("Enter the size of array");
	     int n=sc.nextInt();
	     ab.createArray(n);
	     ab.addData();
```

```
            ab.display();
            ab.checkdup();
      }


}
```

Q.4-> Write a java program to sort the given array

Program->

```
package com.destination.assignmentoct14;
import java.util.Arrays;
import java.util.Scanner;
class sort{
      int m[];
      int size;

      void CreateArray(int n) {
            size=n;
            m=new int[size];
            System.out.println("Array is created successfully");
      }

      void addData() {
            Scanner sc=new Scanner(System.in);
            for(int i=0;i<size;i++) {
                  System.out.println("Enter the array element");
                  m[i]=sc.nextInt();
                  }
      }

      void display() {
            System.out.println("Array element is ");
            for(int i=0;i<size;i++) {
                  System.out.print("  "+m[i]);
            }

            System.out.println();
      }

      void sorted() {
             Arrays.sort(m);
                System.out.println("Array in ascending order:");
                for (int i = 0; i < size; i++) {
                    System.out.print(m[i] + " ");
                }
                System.out.println();
```

```
                System.out.println("Array in descending order:");
                for (int i = size - 1; i >= 0; i--) {
                    System.out.print(m[i] + " ");
                }
}

}
public class sorting {
      public static void main(String[] args) {
            sort ab=new sort();
            Scanner sc=new Scanner(System.in);
            System.out.println("Enter the size of array");
            int n=sc.nextInt();
            ab.CreateArray(n);
            ab.addData();
            ab.display();
            ab.sorted();
      }

}
```

Q.5-> Write a java program to create an array from existing array by the removing duplicate

Program->

```
package com.destination.assignmentoct14;
import java.util.Scanner;
class unique{
      int m[];
      int size;
      int uniq[];
      int count;



      void createArray(int n){
            size=n;
            m=new int[size];
            System.out.println("Array is created successfully");
      }

      void addData() {
            Scanner sc=new Scanner(System.in);
            for(int i=0;i<size;i++) {
                  System.out.println("Enter the array element");
```

```
                m[i]=sc.nextInt();
                }
    }

    void display() {
         System.out.println("Array element is ");
         for(int i=0;i<size;i++) {
              System.out.print("  "+m[i]);
         }

         System.out.println();
    }

    void uniqu() {
        uniq = new int[size];
        count = 0;
        boolean value = false;

        System.out.println("After removing duplicate elements:");

        for (int i = 0; i < size; i++) {
            boolean alreadyAdded = false;


            for (int k = 0; k < count; k++) {
                if (uniq[k] == m[i]) {
                    alreadyAdded = true;
                    break;
                }
            }


            if (alreadyAdded==false) {
                uniq[count] = m[i];
                count++;
            }
        }


        System.out.println("Array after removing duplicates:");
        for (int k = 0; k < count; k++) {
            System.out.print(uniq[k] + " ");
        }
        System.out.println();
    }


}
```

```java
public class removeDupArr {
	public static void main(String[] args) {
		unique ab=new unique();
		Scanner sc=new Scanner(System.in);
		System.out.println("Enter the size of array");
		int n=sc.nextInt();
		ab.createArray(n);
		ab.addData();
		ab.display();
		ab.uniqu();
	}


}
```