

10-01-05-B

```
public static void stampaVettore(int[] V1, int[] V2)
{
    int maxV2 = max(V2);
    for (int i=0; i < V1.length; i++)
        if (V1[i] > maxV2)
            System.out.println(V1[i]);
}
```

```
public static int max(int[] V)
{
    int max = V[0];
    for (int i=0; i < V.length; i++)
        if (V[i] > max)
            max = V[i];
    return max;
}
```

```
public class Appello100105_ESE3_B
{
```

```
    public static int[][] transpose(int[][] M)
    {
        int[][] T = new int[M[0].length][M.length];
        for (int i = 0; i < T.length; i++)
            for (int j = 0; j < T[0].length; j++)
                T[i][j] = M[j][i];
        return T;
    }
```

```
    public static int[][] product(int[][] M1, int[][] M2)
    {
        if (M1.length != M2[0].length) return null;
        int[][] P = new int[M1.length][M2[0].length];
        int s = 0;
        for (int i = 0; i < P.length; i++)
            for (int j = 0; j < P[0].length; j++)
            {
                s = 0;
                for (int k = 0; k < M1[0].length; k++)
                    s += M1[i][k]*M2[k][j];
                P[i][j] = s;
            }
        return P;
    }
```

```
    public static int[] getTrace(int[][] M)
    {
        if (M.length != M[0].length) return null;
        int[] W;
        int[] vett = new int[M.length];
        int count = 0;
        for (int i = 0; i < M.length; i++)
            if (M[i][i] != 0)
            {
                vett[count] = M[i][i];
                count++;
            }
        if (count == 0)
            return null;
    }
```

```

else
{
    W = new int[count];
    for (int i = 0; i < count7; i++)
        W[i] = vett[i];
}
return W;
}

public static void stampaMatrice(int[][] M)
{
    for (int i = 0; i < M.length; i++)
    {
        for (int j = 0; j < M[0].length; j++)
            System.out.print(M[i][j]+"\\t");
        System.out.println();
    }
}

public static int[][] leggiMatrice()
{
    int h = Console.readInt("Inserisci il numero di righe ");
    int k = Console.readInt("Inserisci il numero di colonne ");
    int[][] M = new int[h][k];
    for (int i = 0; i < M.length; i++)
        for (int j = 0; j < M[0].length; j++)
            M[i][j] = Console.readInt("Inserisci valore M["+i+""]["+j+"]");
    return M;
}

public static void main(String[] args)
{
    //int[][] A = new
    int[][]
    {{1,2,3,4,1},{2,3,4,5,2},{3,4,5,6,3},{8,9,10,11,8},{2,4,5,6,0}};
    int[][] A = leggiMatrice();
    int[][] T = transpose(A);
    System.out.println("Trasposta");
    stampaMatrice(T);
    int[][] P = product(A,T);
    if (P != null)
    {
        System.out.println("Prodotto");
        stampaMatrice(P);
        int[] V = getTrace(P);
        if (V != null)
        {
            System.out.println("getTrace");
            for (int i = 0; i < V.length; i++)
                System.out.println(V[i]+" ");
        }
    }
}
}

```