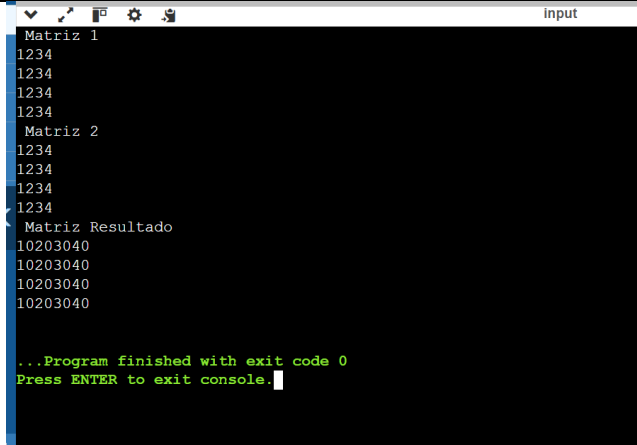


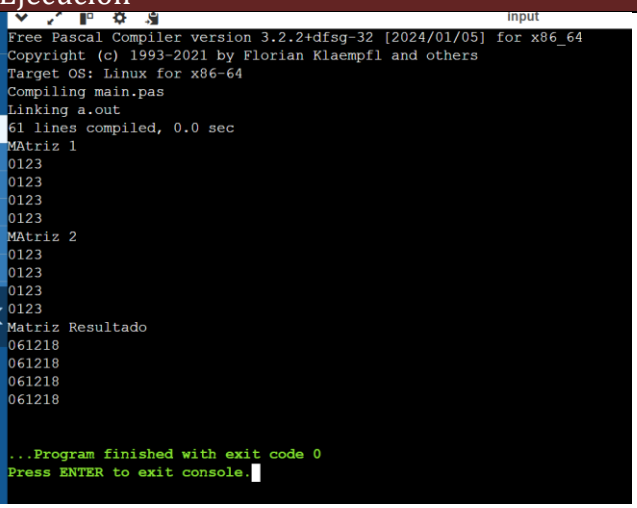
Reporte de Examen práctico.

Problema: Multiplicar dos matrices.

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Código en el lenguaje Fortran	Ejecución
<pre> Program MultiplicacionMatriz INTEGER :: matriz1(4,4) INTEGER :: matriz2(4,4) INTEGER :: matrizRes(4,4) INTEGER :: i,j DO i = 1, 4 DO j = 1, 4 matriz1(i,j) = j matriz2(i,j) = j matrizRes(i,j) = 0 END DO END DO Print *, "Matriz 1" DO i = 1, 4 DO j = 1, 4 WRITE(*, '(I0, A)', ADVANCE='NO') matriz1(i,j) END DO print *, "" END DO Print *, "Matriz 2" DO i = 1, 4 DO j = 1, 4 WRITE(*, '(I0, A)', ADVANCE='NO') matriz2(i,j) END DO print *, "" END DO </pre>	 <p>The screenshot shows a terminal window with the following output:</p> <pre> Matriz 1 1234 1234 1234 1234 Matriz 2 1234 1234 1234 1234 Matriz Resultado 10203040 10203040 10203040 10203040 ...Program finished with exit code 0 Press ENTER to exit console. </pre>

<pre> DO i = 1 , 4 DO j = 1 , 4 DO k = 1, 4 matrizRes(i,j) = matrizRes(i,j) + (matriz1(i,k) * matriz2(k,j)) END DO END DO END DO Print *, "Matriz Resultado" DO i = 1 , 4 DO j = 1 , 4 WRITE(*, '(I0, A)', ADVANCE='NO') matrizRes(i,j) END DO print *, "" END DO End Program MultiplicacionMatriz </pre>	
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Código en el lenguaje Pascal	Ejecución
<pre> program Hello; var matriz1 : ARRAY[0..3,0..3] OF INTEGER; matriz2 : ARRAY[0..3,0..3] OF INTEGER; matrizRes : ARRAY[0..3,0..3] OF INTEGER; i,j,k : INTEGER; begin for i := 0 to 3 do begin for j := 0 to 3 do begin matriz1[i,j] := j; matriz2[i,j] := j; matrizRes[i,j] := 0; end; end; end; end; </pre>	 <p>The screenshot shows the execution of a Pascal program. It starts with the Free Pascal Compiler version 3.2.2+dfsg-32 [2024/01/05] for x86_64. It shows the compilation of main.pas and linking of a.out. The output displays the matrices being processed: Matriz 1, Matriz 2, and Matriz Resultado. The Matriz Resultado shows the result of the multiplication, which is a 4x4 matrix of zeros. The program finishes with exit code 0 and prompts the user to press ENTER to exit the console.</p>

```
end;

writeln('Matriz 1');
for i := 0 to 3 do
begin
  for j := 0 to 3 do
  begin
    write(matriz1[i,j]);
  end;
  writeln;
end;

writeln('Matriz 2');
for i := 0 to 3 do
begin
  for j := 0 to 3 do
  begin
    write(matriz2[i,j]);
  end;
  writeln;
end;

for i := 0 to 3 do
begin
  for j := 0 to 3 do
  begin
    for k := 0 to 3 do
    begin
      matrizRes[i, j] := matrizRes[i, j] +
(matriz1[i, k] * matriz2[k, j]);
    end;
  end;
end;

writeln('Matriz Resultado');
for i := 0 to 3 do
begin
  for j := 0 to 3 do
  begin
    write(matrizRes[i,j]);
  end;
  writeln;
end;
```

end.

Código en el lenguaje C/C++

```
#include <stdio.h>
#include <iostream>

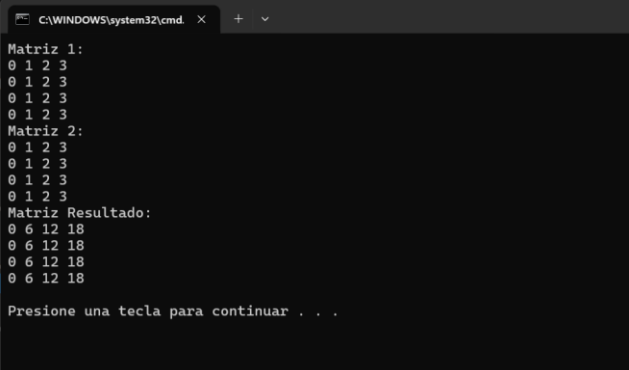
int main()
{
    int matriz1[4][4], matriz2[4][4],
    matrizRes[4][4]; //matriz 1,2 y en la que se
    guardara el resultado
    int i,j; //contadores

    for (i = 0; i < 4; i++) { //asigna valor a las
    matrices
        for (j = 0; j < 4; j++) {
            matriz1[i][j] = j;
            matriz2[i][j] = j;
            matrizRes[i][j] = 0;
        }
    }

    std::cout << "Matriz 1: " << std::endl;
    for (i = 0; i < 4; i++) { //imprime la matriz 1
        for (j = 0; j < 4; j++) {
            std::cout << matriz1[i][j] << " ";
        }
        std::cout << std::endl;
    }

    std::cout << "Matriz 2: " << std::endl;
    for (i = 0; i < 4; i++) { //imprime la matriz 2
        for (j = 0; j < 4; j++) {
            std::cout << matriz2[i][j] << " ";
        }
        std::cout << std::endl;
    }
}
```

Ejecución



```
C:\WINDOWS\system32\cmd. X + v
Matriz 1:
0 1 2 3
0 1 2 3
0 1 2 3
0 1 2 3
Matriz 2:
0 1 2 3
0 1 2 3
0 1 2 3
0 1 2 3
Matriz Resultado:
0 6 12 18
0 6 12 18
0 6 12 18
0 6 12 18
Presione una tecla para continuar . . .
```

```

for (i = 0; i < 4; i++) {
    for (j = 0; j < 4; j++) {
        for(int k = 0; k < 4; k++) { //multiplica las
dos matrices
            matrizRes[i][j] += matriz1[i][k] *
matriz2[k][j];
        }
    }
}

std::cout << "Matriz Resultado: " << std::endl;
for (i = 0; i < 4; i++) { //imprime la matriz
resultado
    for (j = 0; j < 4; j++) {
        std::cout << matrizRes[i][j] << " ";
    }
    std::cout << std::endl;
}

return 0;
}

```

Código en el lenguaje Java

```

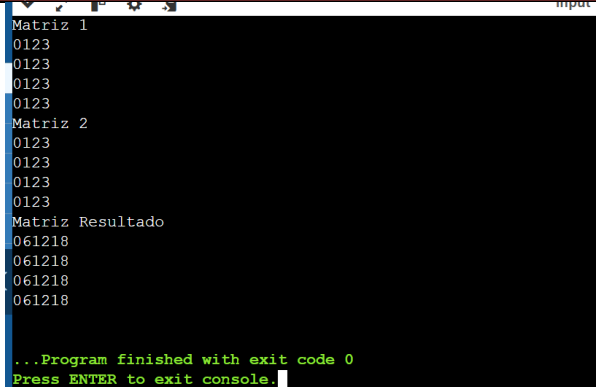
public class Multimatriz
{
    public static void main(String[] args) {

        int[][] matriz1 = new int[4][4];
        int[][] matriz2 = new int[4][4];
        int[][] matrizRes = new int[4][4];
        int i,j;

        for(i = 0;i < 4;i++){
            for(j = 0;j < 4;j++){
                matriz1[i][j] = j;
                matriz2[i][j] = j;
            }
        }
    }
}

```

Ejecución



```

Matriz 1
0123
0123
0123
0123
Matriz 2
0123
0123
0123
0123
Matriz Resultado
061218
061218
061218
061218

...Program finished with exit code 0
Press ENTER to exit console.

```

```
System.out.println("Matriz 1");
for(i = 0;i < 4;i++){
    for(j = 0;j < 4;j++){
        System.out.print(matriz1[i][j]);
    }
    System.out.println("");
}

System.out.println("Matriz 2");
for(i = 0;i < 4;i++){
    for(j = 0;j < 4;j++){
        System.out.print(matriz2[i][j]);
    }
    System.out.println("");
}

for(i = 0;i < 4;i++){
    for(j = 0;j < 4;j++){
        for(int k = 0; k < 4;k++){
            matrizRes[i][j] += matriz1[i][k] *
matriz2[k][j];
        }
    }
}

System.out.println("Matriz Resultado");
for(i = 0;i < 4;i++){
    for(j = 0;j < 4;j++){
        System.out.print(matrizRes[i][j]);
    }
    System.out.println("");
}

}
```