Instituto Federal da Bahia-IFBa
Curso: Engenharia Elétrica
Curso da Linguagem C

Vetor e Matrizes

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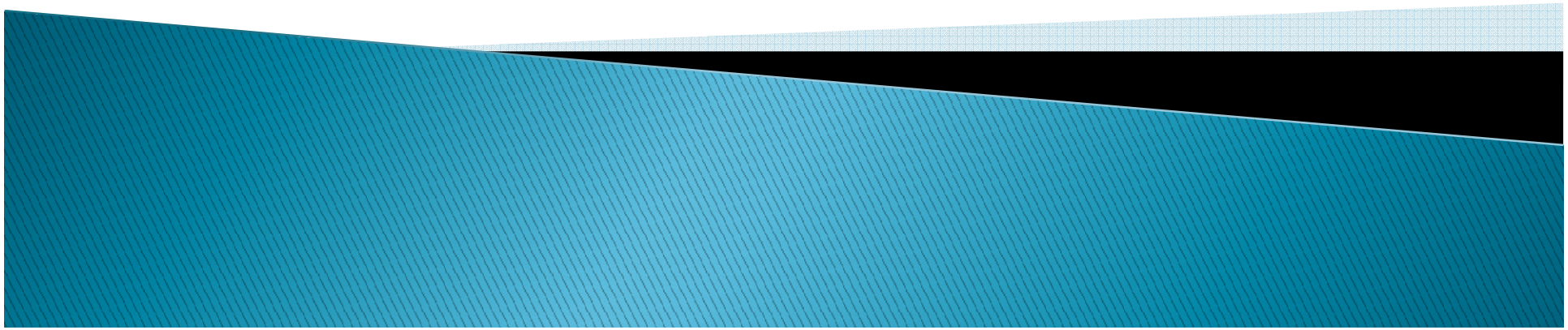
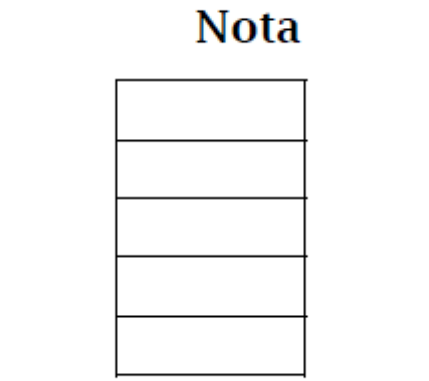


Vetor

- Um vetor representa então conjuntos indexados de elementos de um mesmo tipo.



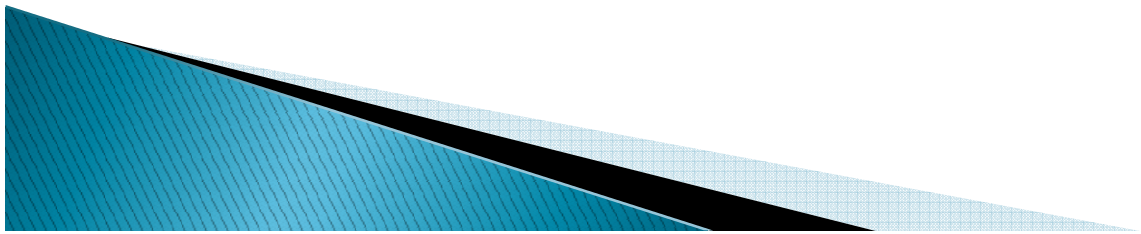
Vetor Nota com 5 posições

Vetor

- Declarando um vetor

- #define DIM 5

- int i, vetor1[DIM], vetor2[DIM];



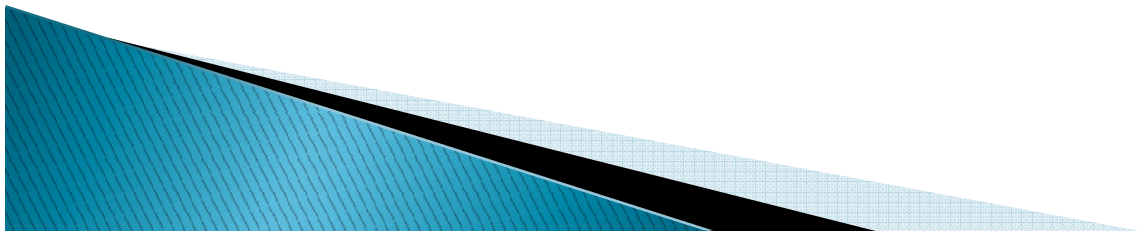
Vetor- Exemplo Prático

```
/* programa exemplo de vetor */
   #define DIM 5
   #include <stdio.h>
   /* Corpo principal do programa */
   main ( )
   {
          int i, vetor1[DIM], vetor2[DIM];
          for ( i=0; i<DIM; i++ )
          {
          printf ("vetor1[%d]=", i);
          scanf ("%d", &vetor1[ i ]);
          }
          for ( i=0; i<DIM; i++ )
          {
          printf ("vetor2[%d]=", i);
          scanf ("%d", &vetor2[ i ]);
          }
          for ( i=0; i<DIM; i++ )
          printf ("vetor1[%d] + vetor2[%d] = %d\n", i, i, vetor1[ i ] + vetor2[ i ]);
   }
```

Vetor Estático

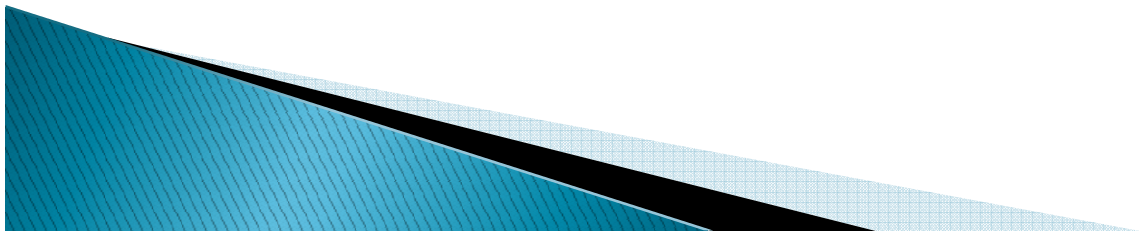
- Veja o exemplo abaixo:

```
static int
vetor[5] = {0, 1, 2, 3, 4 };

ou

static int
vetor[ ] = {0, 1, 2, 3, 4};
```



Matriz

```
#define NumeroDeProvas 5
#define MaximoDeAlunos 50

float
boletim[ MaximoDeAlunos ] [ NumeroDeProvas ];
```



Matriz

```
/* exemplo de MATRIZ */
#include “stdio.h”
main ( )
{
static int
a[3] [4] = {      {-14, -36, -62, 78},
                  {-77, 14, -92, 17},
                  {67, -51, 18, -60} },
b[4] [2] = {      {7, 34},
                  {-23, 69},
                  {32, -1} };
int i, j, k,
c[3] [2];
for ( i=0; i<3; i++ )
        for ( j=0; j<2; j++ )
{
        for( c[ i ] [ j ] = 0, k = 0; k<4; k++ )
        c[ i ] [ j ] += a[ i ] [ k ] * b[ k ] [ j ];
                printf (“c[%d] [%d] = %d\n”, i, j, c[ i ] [ j ]);
}
}
```

Matriz

Exemplo 2:

```
#include <stdio.h>
#define LIN 2
#define COL 2
main ( )
{
int
mat[LIN][COL],
i, j;
for ( i=1; i<3; i++ )
for ( j=1; j<3; j++ )
{
printf (“\nEntre com o elemento[%d][%d]”, i, j);
scanf (“%d”, &mat[ i ][ j ]);
}
for ( i=1; i<3; i++ )
for ( j=1; j<3; j++ )
if ( i == j )
printf (“\n%d”, mat[ i ][ j ]);
}
```