

```
/* 2-D Array example arr2D05.F2018.c - Matrix x Vector Product */
```

```
/* A * X => V 4x3 * 3x1 => 4x1 */
```

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

```
main( )
```

```
{
```

```
    int v [ 4 ], x [ 3 ] = { 1, 2, 2 };
```

```
    int arr [ 4 ] [ 3 ] = { { 1, 1, 1 }, { 2, 3, 1 }, { 1, -1, -1 }, { 0, 1, 2 } };
```

```
    int i, j;
```

```
    for( i = 0 ; i < 4 ; i++ )          /* do all vi */
```

```
    {
```

```
        v [ i ] = 0 ;                  /* sum = 0 initialization */
```

```
        for( j = 0 ; j < 3 ; j++ )
```

```
            v [ i ] = v [ i ] + arr [ i ] [ j ] * x [ j ] ; /* Note x runs over j */
```

```
    }
```

```
    for( i = 0 ; i < 4 ; i++ )
```

```
        printf( "%5d \n", v [ i ] );
```

```
}
```