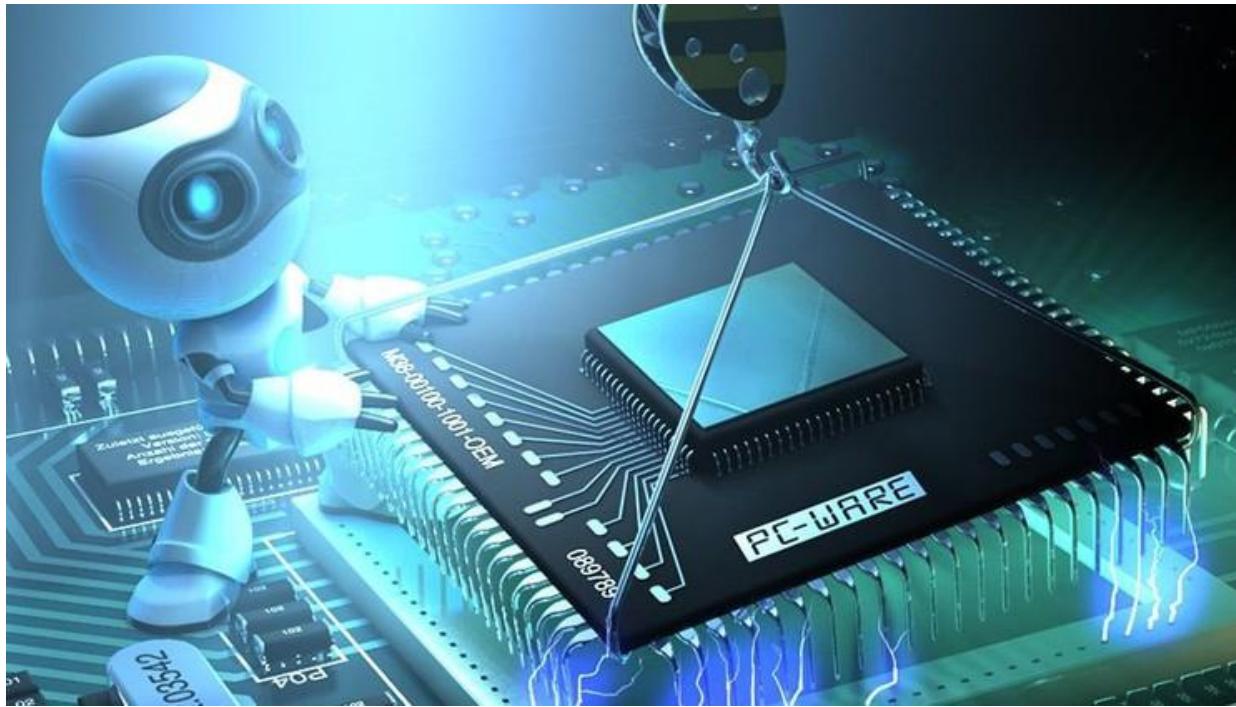


# Matrices





# Structured Data Types

## Matrices

- Declaration in C:

```
type name[NumRows][NumColumns];      // indexed starting at (0,0)
```

- Storage by rows in consecutive memory locations

- Access element A[i][j]: **@start A + (i\*NumColumns + j) \* size**

(size: size of the elements of A)



# Structured Data Types

## Matrices

- Examples:

Declaration in C	Size of Element	Size of Matrix	@element ( i, j )
char A[80][25];	1B	2000B	@start A + i*25 + j
char *B[80][10];	4B	3200B	@start B + (i*10+j)*4
double C[1024][100];	8B	800KB	@start C + (i*100+j)*8
int *D[5][90];	4B	1800B	@start D + (i*90+j)*4
int E[100][30];	4B	12000B	@start E + (i*30+j)*4