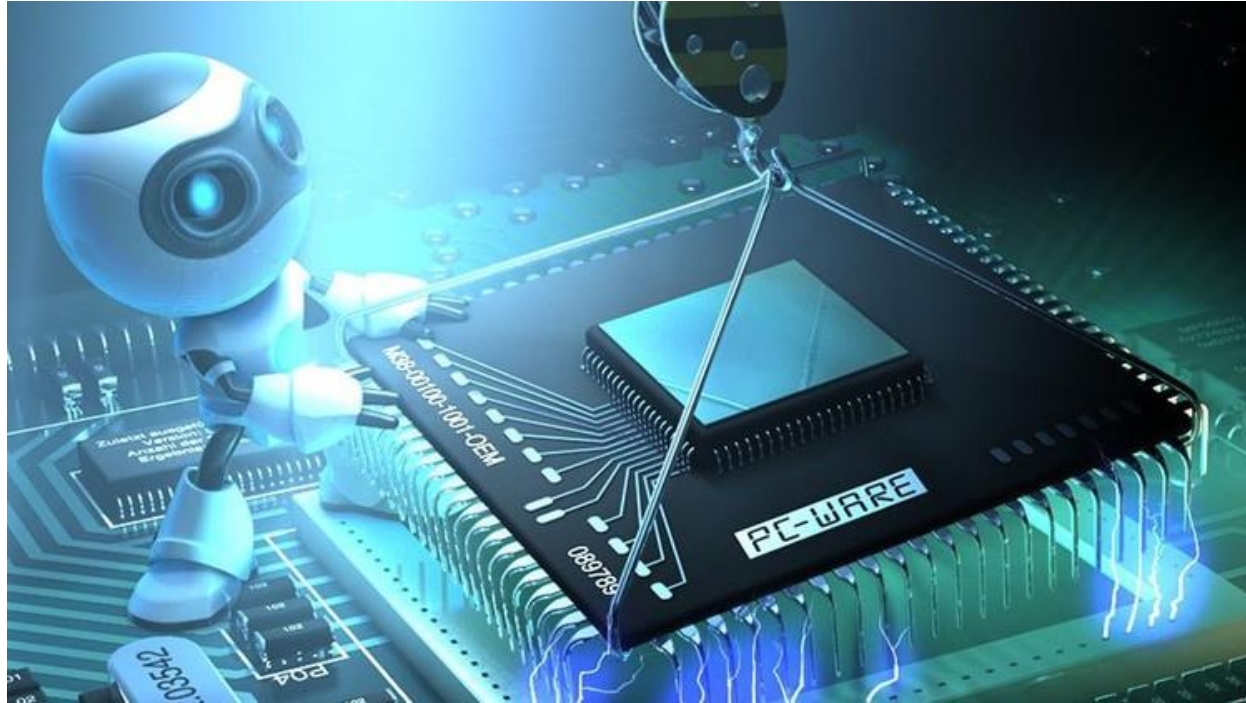


# Matrices



# 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 <b>A</b> [80][25];	1B	2000B	@start A + i*25 + j
char * <b>B</b> [80][10];	4B	3200B	@start B + (i*10+j)*4
double <b>C</b> [1024][100];	8B	800KB	@start C + (i*100+j)*8
int * <b>D</b> [5][90];	4B	1800B	@start D + (i*90+j)*4
int <b>E</b> [100][30];	4B	12000B	@start E + (i*30+j)*4