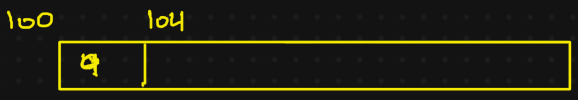
Arrays



An array is a collection of elements stored in contigous memory location.
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All elements of array are of same data type (int, float etc.)

Array allow for eficient access and manipulation of data.

- → fixed size `arr[5]`
- → homogenous `int`

In python we use list instead of array as they provide more flexibility. However, python provide ability to use array via libraries such as numpy and array

Type code	C Type	Python Type	Minimum size in bytes
`'b'`	signed char	int	1
`'B'`	unsigned char	int	1
`'u'`	wchar_t	Unicode character	2
`'h'`	signed short	int	2
`'H'`	unsigned short	int	2
`'i'`	signed int	int	2
`'I'`	unsigned int	int	2
`'l'`	signed long	int	4
`'L'`	unsigned long	int	4
`'q'`	signed long long	int	8
`'Q'`	unsigned long long	int	8
`'f'`	float	float	4
`'d'`	double	float	8

	Array	List
Data type	Homogenous (same type)	Heterogenous (different type)
Flexibity	Fixed size	Dynamic (can grow and shrink)
Performance	More memory efficient for large data.	Slower for larger dataset
Usage in Python	Use array or numpy	Built in