**malloc() vs new**

**Following are the differences between malloc() and operator new.**:

1. **Calling Constructors:** new calls constructors, while malloc() does not. In fact primitive data types (char, int, float.. etc) can also be initialized with new. For example, below program prints 10.

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| #include<iostream>    using namespace std;    int main()  {     int \*n = new int(10); // initialization with new()     cout << \*n;     getchar();     return 0;  } |

1. **operator vs function:** new is an operator, while malloc() is a function.
2. **return type:** new returns exact data type, while malloc() returns void \*.
3. **Failure Condition:** On failure, malloc() returns NULL where as new Throws.
4. **Memory:** In case of new, memory is allocated from free store where as in malloc() memory allocation is done from heap.
5. **Overriding:** We are allowed to override new operator where as we can not override the malloc() function legally.
6. **Size:** Required size of memory is calculated by compiler for new, where as we have to manually calculate size for malloc().

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| **new** | **malloc** |
| calls constructor | doesnot calls constructors |
| It is an operator | It is a function |
| Returns exact data type | Returns void \* |
| on failure, Throws | On failure, returns NULL |
| Memory allocated from free store | Memory allocated from heap |
| can be overridden | cannot be overridden |
| size is calculated by compiler | size is calculated manually |