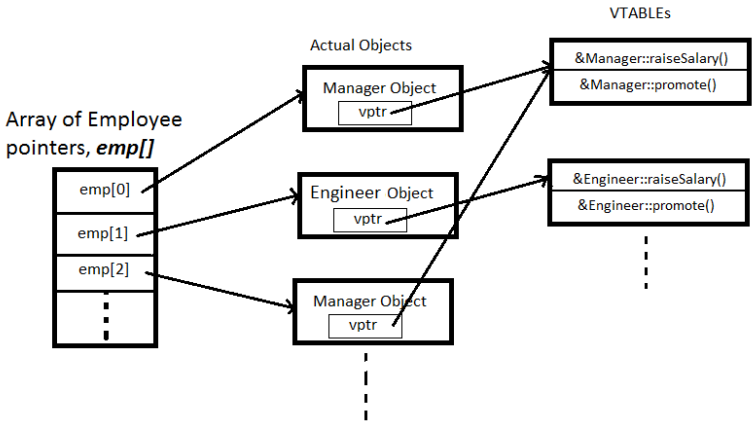
How Late Binding Works

Virtual member functions are implemented by adding a new pointer to every object that contains at least one virtual function. This pointer is called a ***vptr*** and it points to a table of functions, called a ***vtable*** or Virtual Method Table. The ***vtable*** contains the actual addresses of the functions to be called for that class.



Using this illustration, let's see how late binding, or dynamic dispatch works:

1. You call `emp[0]->raiseSalary()`
2. Your call is routed though the ***vptr*** in `emp[0]`, which is actually a `Manger`, and your call eventually finds the address of the `Manager::raiseSalary()` function inside the `Manager` ***vtable***.
3. You call `emp[1]->promote()`
4. Your call is routed through the ***vptr*** in `emp[1]`, which is actually an `Engineer`. This ***vptr*** points to the `Engineer` ***vtable*** where it finds the `Engineer::promote()` function.