

```
#include <iostream>
            Main memory
                               using namespace std;
                 Stack
                               int main(){
                                 int x = 10;
                 main
                                 int* p = NULL;
                   5
                                 p = &x;
            address in heap
                                 *p = 5;
                                                - Allocate memory for an int on the heap
                                   = new int;
                                        -return its address and store it in p
                                 *p = 20;
                                                                prints 20
                                 cout << "Value at p: " << *p << endl;
                   20
Reserved 🕹
                                 cout << "Value of x: " << x << endl;
                 Heap
                                                                prints 7
              Const + Global
                                               Will reveal in the next figure
                 Code
```

```
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         Main memory
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             Stack
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                             int x = 10;
              main
                             int* p = NULL;
               5
      X
                             p = &x;
         address in heap
                             *p = 5;
                             p = new int;
                             *p = 20;
                             cout << "Value at p: " << *p << endl;
Freed *
                             cout << "Value of x: " << x << endl;</pre>
              Heap
          Const + Global
                             delete p; free address stored in p (the heap address)
                                          Will reveal in the next figure
              Code
```

```
#include <iostream>
  Main memory
                   using namespace std;
      Stack
                   int main(){
                     int x = 10;
      main
                     int* p = NULL;
X
                     p = &x;
      NULL
p
                     *p = 5;
                     p = new int;
                     *p = 20;
                     cout << "Value at p: " << *p << endl;
                     cout << "Value of x: " << x << endl;
       Heap
   Const + Global
                     delete p;
                     p = NULL;
                     return 0;
      Code
```