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## 3.1 Assignment 1

What is printed out? Are there any problems (errors)?

```
int a = 3;  
int *b = &a;  
  
cout << b << endl;  
cout << *b << endl;  
cout << &b << endl;  
  
cout << a << endl;  
cout << &a << endl;
```

`cout << b << endl;` will print out the memory address of variable a, because the pointer b is holding the memory address of variable a.

`cout << *b << endl;` will print out 3, because the pointer b is pointing to the value inside the address of variable a, which is 3

`cout << &b << endl;` will print out the memory address of the pointer b

`cout << a << endl;` will print out the value inside variable a, which is 3;

`cout << &a << endl;` will print out the memory address of variable a, similar to `cout << b << endl;`

### 3.3 Assignment 3

What is printed out? Are there any problems (errors)?

5

```
int *a = new int;
int *b = new int;
*a = 2;
b = a;
cout << *a << endl;
cout << *b << endl;
delete a;
delete b;
```

```
int *a = new int;
```

```
int *b = new int;
```

```
*a = 2;
```

```
b = a; → *b = *a;
```

```
cout << *a << endl;
```

```
cout << *b << endl;
```

```
delete a;
```

```
delete b;
```

After allocating the new variables new int on both of the pointers a and b, we'll have to sign on the value on the pointer \*a with the new value of \*b, with \*b = \*a, not b = a

The result is

2

2

## 3.4 Assignment 4

What is printed out? Are there any problems (errors)?

```
int a = 3;
int *p = &a;
cout << *p << endl;
p = new int(5);
cout << *p << endl;
```

```
int a = 3;
    int* p = &a;
    cout << *p << endl;
    p = new int(5);
    cout << *p << endl;
```

The results will be:

3

5

Because the first `cout << *p << endl;` points to the value inside variable `a`, which is 3, the second `cout << *p << endl;` was asking a memory cell of 5 bytes, which is also signed with a new value of 5.

After using the given memory cell, we'll have to return the memory cell, using `delete p`.

## 3.7 Assignment 7

1. Point out the compile time error in the program given below.

```
#include<stdio.h>

int main()
{
    int *x;
    *x=100;
    return 0;
}
```

- A.** Error: invalid assignment for x
- B.** Error: suspicious pointer conversion
- C.** No error
- D.** None of above

Uninitialized pointer x so we will have to dynamically allocate a single variable to the pointer x

Fixed code:

```
#include <stdio.h>
```

```
Int main() {
```

```
    int *x = new int;
```

```
    *x =100;
```

```
    return 0;
```

```
}
```

So the answer is B.Invalid assignment for x

## 3.9 Assignment 9

16. What will be the output of the program ?

```
#include<stdio.h>

int main()
{
    char str[] = "peace";
    char *s = str;
    printf("%s\n", s++ +3);
    return 0;
}
```

- A. peace
- B. eace
- C. ace
- D. ce

The answer is D. ce. There are 5 characters in the char str[] = "peace".

And the printf commands to skip the first 3 characters(+3) and print the rest of the characters (s++)