

Memory - Errors

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- 1 Introduction
 - Memory - Errors

```
#include <stdio.h>

int main(void) {

    int    a = 40;
    int    *p = &a;

    printf("a = %d \n", a);

    printf("p = %p \n", p);
    printf("p = %d \n", p);

    printf("*p= %p \n", *p);
    printf("*p= %d \n", *p);

}
```

```
$ !g
gcc -Wall t.c
t.c: In function 'main':
t.c:12:10: warning: format '%d' expects
argument of type 'int', but argument 2
has type 'int *' [-Wformat=]
    printf("p = %d \n", p);
           ^
t.c:14:10: warning: format '%p' expects
argument of type 'void *', but argument 2
has type 'int' [-Wformat=]
    printf("*p= %p \n", *p);
           ^
$ ./a.out
a = 40
p = 0x7ffd56431ffc
p = 1447239676
*p= 0x28
*p= 40
```

Ex2 : Segmentation Fault

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

```
int main(void) {  
  
    int  a = 40;  
    int  *p = &a;  
  
    printf("a = %d \n", a);  
    printf("p = %p \n", p);  
    printf("*p= %d \n", *p);  
  
    p = 4000;  
  
    printf("a = %d \n", a);  
    printf("p = %p \n", p);  
    printf("*p= %d \n", *p);  
  
}
```

```
gcc -Wall t.c  
t.c: In function 'main':  
t.c:13:5: warning: assignment makes pointer  
from integer without a cast [-Wint-conversion]  
    p = 4000;  
    ^  
young@usys-bb4 ~ $ ./a.out  
a = 40  
p = 0x7fff8a1b806c  
*p= 40  
a = 40  
p = 0xfa0  
Segmentation fault
```

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

```
int main(void) {
    int a = 40;
    int *p = &a;

    printf("a = %d \n", a);
    printf("p = %p \n", p);
    printf("*p= %d \n", *p);

    a = &p;

    printf("a = %d \n", a);
    printf("p = %p \n", p);
    printf("*p= %d \n", *p);
}
```

```
gcc -Wall t.c
t.c: In function 'main':
t.c:13:5: warning: assignment makes integer
from pointer without a cast [-Wint-conversion]
    a = &p;
    ^
young@usys-bb4 ~ $ ./a.out
a = 40
p = 0x7ffcca229a1c
*p= 40
a = -903701984
p = 0x7ffcca229a1c
*p= -903701984
```