// Example demonstrating memory address assignments
// George F. Riley, Georgia Tech, Summer 2006

int g1; // Global variable 1
int g2; // Global variable 2

int sub1()
{
    int s1l1; // Sub1, local variable 1
    int s1l2; // Sub1, local variable 2

    char* s1hello = "Hello";
    printf("Address of s1l1 is %p\n", &s1l1);
    printf("Address of s1l2 is %p\n", &s1l2);
    printf("s1hello is %p\n", s1hello);

}

int sub2()
{
    int s2l1; // Sub1, local variable 1
    int s2l2; // Sub1, local variable 2

    char* s2hello = "Hello";
    printf("Address of s2l1 is %p\n", &s2l1);
    printf("Address of s2l2 is %p\n", &s2l2);
    printf("s2hello is %p\n", s2hello);

}

int main(int argc, char** argv)
{
    int ml1; // Main program, local variable 1
    int ml2; // Main program, local variable 2
    char* p1;
    char* p2;
    char* p3;

    printf("Address of g1 is %p\n", &g1);
    printf("Address of g2 is %p\n", &g2);

    printf("Address of ml1 is %p\n", &ml1);
    printf("Address of ml2 is %p\n", &ml2);

    printf("Address of sub1 is %p\n", sub1);
    printf("Address of sub2 is %p\n", sub2);

    sub1();
    sub2();
    sub3(); // Defined in ex1b.c
    // Get some dynamic memory
    p1 = (char*)malloc(1);
    p2 = (char*)malloc(1);
    p3 = (char*)malloc(1);
    printf("Dynamic mem 1 is %p\n", p1);
    printf("Dynamic mem 2 is %p\n", p2);
    printf("Dynamic mem 3 is %p\n", p3);

}
Example demonstrating memory address assignments, separate compilation

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```c
int g1; // Global variable 1
int g2; // Global variable 2
int g3; // Global variable 3

int sub3()
{
    int s3l1; // Sub1, local variable 1
    int s3l2; // Sub1, local variable 2
    int s3l3; // Sub1, local variable 3
    char* s3hello = "Hello";

    printf("Sub3, Address of g1 is %p\n", &g1);
    printf("Sub3, Address of g2 is %p\n", &g2);
    printf("Sub3, Address of g3 is %p\n", &g3);

    printf("Address of s3l1 is %p\n", &s3l1);
    printf("Address of s3l2 is %p\n", &s3l2);
    printf("Address of s3l3 is %p\n", &s3l3);
    printf("s3hello is %p\n", s3hello);
}
```

Program ex1b.c
// Output from running program ex1
Address of g1 is 0x30dc
Address of g2 is 0x30e0
Address of m1 is 0xbffff8d0
Address of m2 is 0xbffff8d4
Address of sub1 is 0x28f0
Address of sub2 is 0x2964
Address of s1l1 is 0xbffff870
Address of s1l2 is 0xbffff874
s1hello is 0x2df4
Address of s2l1 is 0xbffff870
Address of s2l2 is 0xbffff874
s2hello is 0x2df4
Sub3, Address of g1 is 0x30dc
Sub3, Address of g2 is 0x30e0
Sub3, Address of g3 is 0x30e4
Address of s3l1 is 0xbffff870
Address of s3l2 is 0xbffff874
Address of s3l3 is 0xbffff878
s3hello is 0x2df4
Dynamic mem 1 is 0x500140
Dynamic mem 2 is 0x500150
Dynamic mem 3 is 0x500160

Program ex1-output.c