

Selection Statements

Lecture 3 Assignments

1. The following if statement is unnecessarily complicated. Simplify it as much as possible. (Hint: The entire statement can be replaced by a single assignment.)

```
1  #include <stdio.h>
2
3  int main(void){
4      int age;
5      char teenager[20];
6      printf("Enter age: ");
7      int printf(const char* __restrict __Format, ...)
8
9      /*
10     if (age >= 13){
11         if (age <= 19){
12             strcpy(teenager, "true");
13         }
14         else if (age < 13){
15             strcpy(teenager, "false");
16         }
17     }
18     if (age >= 13 && age <= 19){
19         strcpy(teenager, "true");
20     }
21     else{
22         strcpy(teenager, "false");
23     }
24     printf("Is teenager: %s\n", teenager);
25     return 0;
26 }
27
28
```

```
"C:\Users\John Hamir Karim\Desktop\CMSC21\Lecture3\as1.exe"
Enter age: 10
is teenager: false

Process returned 0 (0x0)   execution time : 5.911 s
Press any key to continue.
```

```
"C:\Users\John Hamir Karim\Desktop\CMSC21\Lecture3\as1.exe"
Enter age: 13
is teenager: true

Process returned 0 (0x0)   execution time : 3.794 s
Press any key to continue.
```

2. Write a C program that does the following:

Enter a two-digit number: 25

Number entered in words: twenty-five

```
Start here X as1.c X as2.c X
1  #include <stdio.h>
2
3  int main(void){
4      int num, ones, tens; char tens_str[10], ones_str[10];
5      printf("Enter a two-digit number: ");
6      scanf("%d", &num);
7      printf("Number entered in words: ");
8
9      ones = num%10; tens = num/10;
10
11     switch (ones){
30
31     switch (tens){
48
49     if (num < 14 || num == 15){
50         switch (ones){
51             case 0:
52                 printf("ten");break;
53             case 1:
54                 printf("eleven"); break;
55             case 2:
56                 printf("twelve"); break;
57             case 3:
58                 printf("thirteen");break;
59             default:
60                 printf("fifteen");break;}}
61
62     else if(num >=14 && num <= 19){
63         printf("%steen", ones_str);}
64
65     else{
64
65         else{
66             if(ones == 0){
67                 printf("%s", tens_str);}
68             else{
69                 printf("%s-%s", tens_str, ones_str);}}
70
71         return 0;
72     }
73
```

```
"C:\Users\John Hamir Karim\Desktop\CMSC21\Lecture3\as2.exe"  
Enter a two-digit number: 47  
Number entered in words: forty-seven  
Process returned 0 (0x0)   execution time : 5.757 s  
Press any key to continue.
```

```
"C:\Users\John Hamir Karim\Desktop\CMSC21\Lecture3\as2.exe"  
Enter a two-digit number: 15  
Number entered in words: fifteen  
Process returned 0 (0x0)   execution time : 4.940 s  
Press any key to continue.
```

Github link: <https://github.com/HelloCigar/CMSC21>