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## 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.)

```
if (age >= 13)
    if (age <= 19)
        teenager = true;
    else
        teenager = false;
else if (age < 13)
    teenager = false;
```

Source code file: as1.c

```
1  /*Item 1, Lecture 3 Assignments*/
2
3  #include <stdio.h>
4  #include <stdbool.h>
5  #include <stdlib.h>
6
7  int main(){
8      // declare variables
9      int age;
10     bool teenager;
11
12     printf("Enter age:\n");
13     scanf("%d", &age);
14
15     // test whether age is of a teen or not
16     teenager = ( (age >= 13) && (age <= 19) );
17
18     // if variable 'teenager' is true, then execute body of 'if'
19     if(teenager){
20         printf("Your'e a teenager.\n");
21     }
22     // otherwise, execute this
23     else{
24         printf("Your'e NOT a teenager.\n");
25     }
26
27     system("PAUSE");
28     return 0;
29 }
```

Example Output:

```
C:\Users\Admin\Documents\BS COMSCI AKO\CMSC-21\exercises\lecture3\as1.exe
Enter age:
14
Your'e a teenager.
Press any key to continue . . .
```

2. Write a C program that does the following:

Source code file: as2.c

```
4
5 int main(){
6     int first_dig, second_dig;
7     printf("Enter a two digit number: ");
8     scanf("%d%d", &first_dig, &second_dig);
9
10    printf("Numbers entered in words: ");
11    if(first_dig == 1){
12        switch(second_dig % 10){
13            case 0: printf("Ten"); break;
14            case 1: printf("Eleven"); break;
15            case 2: printf("Twelve"); break;
16            case 3: printf("Thirteen"); break;
17            case 4: printf("Fourteen"); break;
18            case 5: printf("Fifteen"); break;
19            case 6: printf("Sixteen"); break;
20            case 7: printf("Seventeen"); break;
21            case 8: printf("Eighteen"); break;
22            case 9: printf("Nineteen"); break;
23        }
24        printf("\n");
25        system("PAUSE");
26        return 0;
27    }
28    switch(first_dig % 10){
29        case 1: printf("Ten"); break;
30        case 2: printf("Twenty"); break;
31        case 3: printf("Thirty"); break;
32        case 4: printf("Forty"); break;
33        case 5: printf("Fifty"); break;
34        case 6: printf("Sixty"); break;
35        case 7: printf("Seventy"); break;
36        case 8: printf("Eighty"); break;
37        case 9: printf("Ninety"); break;
38    }
39    switch(second_dig % 10){
40        case 0: break;
41        case 1: printf("-one"); break;
42        case 2: printf("-two"); break;
43        case 3: printf("-three"); break;
44        case 4: printf("-four"); break;
45        case 5: printf("-five"); break;
46        case 6: printf("-six"); break;
47        case 7: printf("-seven"); break;
48        case 8: printf("-eight"); break;
49        case 9: printf("-nine"); break;
50    }
51    printf("\n");
52    system("PAUSE");
53    return 0;
54 }
```

Example Output:

```
C:\Users\Admin\Documents\BS COMSCI AKO\CMSC-21\exercises\lecture3\as2.exe
Enter a two digit number: 76
Numbers entered in words: Seventy-six
Press any key to continue . . .
```

Github link: <https://github.com/RedPill-Neo/CMSC21/tree/main/Lecture3/Assignments>