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BS Computer Science I

2021-00252

CMSC 21

Assignment 3

1.

```
1  √ #include <stdio.h>
2    #include <stdbool.h>
3
4  √ int main (void){
5      /*Declare the variables*/
6      int age;
7      bool teenager = false;
8
9      printf("Enter Age: ");
10     scanf("%d", &age);           //Prompt user for input
11
12     /*Optimized code*/
13  √ if(age >= 13 && age <= 19){
14     |     teenager = true;
15     | }
16
17     printf("%d", teenager);
18     return 0;
19 }
```

Output:

```
C:\Users\user\Desktop>a
Enter Age: 12
0
C:\Users\user\Desktop>a
Enter Age: 15
1
```

2.

```
1  #include <stdio.h>
2
3  int main(void){
4      int num, fNum, sNum;                                //Declare the variables
5
6      printf("Enter a two-digit number: ");
7      scanf("%d", &num);                                  //Prompt user for input
8
9      if(num/10 >= 1 && num/10 <= 9){
10         /*Determine the number if number is two-digit*/
11         printf("Number entered in words: ");
12
13         if(num >= 10 && num <= 19){                      //Special case for 10 - 19
14             switch(num){
15                 case 10: printf("ten"); break;
16                 case 11: printf("eleven"); break;
17                 case 12: printf("twelve"); break;
18                 case 13: printf("thirteen"); break;
19                 case 14: printf("fourteen"); break;
20                 case 15: printf("fifteen"); break;
21                 case 16: printf("sixteen"); break;
22                 case 17: printf("seventeen"); break;
23                 case 18: printf("eighteen"); break;
24                 case 19: printf("nineteen"); break;
25             }
26         }
27         else{
28             /*Break the number into two digits*/
29             fNum = num/10;                                //Divide the number by 10 to get the first digit
30             sNum = num%10;                                //Get the remainder of the number to get the second digit
31
32             switch(fNum){
33                 case 2: printf("twenty"); break;
34                 case 3: printf("thirty"); break;
35                 case 4: printf("forty"); break;
36                 case 5: printf("fifty"); break;
37                 case 6: printf("sixty"); break;
38                 case 7: printf("seventy"); break;
39                 case 8: printf("eighty"); break;
40                 case 9: printf("ninety"); break;
41             }
42
43             switch(sNum){
44                 case 1: printf("-one"); break;
45                 case 2: printf("-two"); break;
46                 case 3: printf("-three"); break;
47                 case 4: printf("-four"); break;
48                 case 5: printf("-five"); break;
49                 case 6: printf("-six"); break;
50                 case 7: printf("-seven"); break;
51                 case 8: printf("-eight"); break;
52                 case 9: printf("-nine"); break;
53             }
54         }
55     }
56     else{
57         printf("Number is not two-digit!");
58     }
59
60     return 0;
61 }
```

Output:

```
C:\Users\user\Desktop>b
Enter a two-digit number: 11
Number entered in words: eleven
C:\Users\user\Desktop>b
Enter a two-digit number: 99
Number entered in words: ninety-nine
C:\Users\user\Desktop>b
Enter a two-digit number: 56
Number entered in words: fifty-six
C:\Users\user\Desktop>b
Enter a two-digit number: 100
Number is not two-digit!
```

Github Link:

<https://github.com/dreeew05/CMSC21/tree/master/Lecture3/Assignments>