

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  #include <stdbool.h> // system header file which allows to use Boolean (True/ False)
3
4  int main ()
5  {
6
7      int age;                //declared the variables
8      bool teenager = false;  // set value to false
9      printf("\nage: ");
10     scanf("%d", &age);
11     if (age >=13 && age <=19) // set the condition (assignment = !0);
12     {
13         teenager = true;
14     }
15     printf("Teenager: %s", teenager ? "TRUE" : "FALSE"); //printing of results
16     return 0;
17 }
```

Output

```
age: 14
Teenager: TRUE
```

```
age: 10
Teenager: FALSE
```

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2. Write a C program that does the following:

Enter a two-digit number: 25

Number entered in words: twenty-five

```
1 //program that prints the two-digit number in words
2
3 #include <stdio.h>
4
5 int main()
6 {
7     //declaring variables
8     int num1;
9     int num2;
10
11     //ask the user for the input
12     printf("Enter a two-digit number: ");
13     scanf("%d%d", &num1, &num2);
14
15     //display the results
16     printf("Number entered in words: ");
17
18     /*switch statement which prints the
19     words for the first digit */
20     switch (num1)
21     {
22         case 1:
23             switch (num2)
24             {
25                 /* as stated, 11-19 requires
26                 special treatment thats why it was
27                 enclosed in a nested switch statement */
28                 case 0:
29                     printf("ten");
30                     return 0;
31                 case 1:
32                     printf("eleven");
33                     return 0;
34                 case 2:
35                     printf("twelve");
36                     return 0;
37                 case 3:
38                     printf("thirteen");
39                     return 0;
40                 case 4:
41                     printf("fourteen");
42                     return 0;
43                 case 5:
44                     printf("fifteen");
45                     return 0;
46                 case 6:
47                     printf("sixteen");
48                     return 0;
49                 case 7:
50                     printf("seventeen");
51                     return 0;
52                 case 8:
53                     printf("eighteen");
54                     return 0;
55                 case 9:
56                     printf("nineteen");
57                     return 0;
58             }
59         case 2:
60             printf("twenty");
61             break;
62         case 3:
63             printf("thirty");
64             break;
65         case 4:
66             printf("forty");
67             break;
68         case 5:
69             printf("fifty");
70             break;
71         case 6:
72             printf("sixty");
73             break;
74         case 7:
75             printf("seventy");
76             break;
77         case 8:
78             printf("eighty");
79             break;
80         case 9:
81             printf("ninety");
82             break;
83     }
84 }
```

```
47 case 5:
48     printf("fifteen");
49     return 0;
50 case 6:
51     printf("sixteen");
52     return 0;
53 case 7:
54     printf("seventeen");
55     return 0;
56 case 8:
57     printf("eighteen");
58     return 0;
59 case 9:
60     printf("nineteen");
61     return 0;
62 }
63 case 2:
64     printf("twenty");
65     break;
66 case 3:
67     printf("thirty");
68     break;
69 case 4:
70     printf("forty");
71     break;
72 case 5:
73     printf("fifty");
74     break;
75 case 6:
76     printf("sixty");
77     break;
78 case 7:
79     printf("seventy");
80     break;
81 case 8:
82     printf("eighty");
83     break;
84 case 9:
85     printf("ninety");
86     break;
87 }
88 }
89 }
```

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```
90  /*switch statement which prints the
91  | words for the second digit */
92  switch (num2)
93  {
94      case 1:
95          printf("-one");
96          break;
97      case 2:
98          printf("-two");
99          break;
100     case 3:
101         printf("-three");
102         break;
103     case 4:
104         printf("-four");
105         break;
106     case 5:
107         printf("-five");
108         break;
109     case 6:
110         printf("-six");
111         break;
112     case 7:
113         printf("-seven");
114         break;
115     case 8:
116         printf("-eight");
117         break;
118     case 9:
119         printf("-nine");
120         break;
121 }
122 return 0;
123
124 }
```

Output

```
Enter a two-digit number: 65
Number entered in words: sixty-five
```