

```
1.  /*****
2.   * adder.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Adds two numbers.
8.   *
9.   * Demonstrates use of CS50's library.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      // ask user for input
18.      printf("Give me an integer: ");
19.      int x = GetInt();
20.      printf("Give me another integer: ");
21.      int y = GetInt();
22.
23.      // do the math
24.      printf("The sum of %d and %d is %d!\n", x, y, x + y);
25.
26.      return 0;
27.  }
```

```
1.  /*****
2.   * conditions1.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Tells user if his or her input is positive or negative (somewhat
8.   * inaccurately).
9.   *
10.  * Demonstrates use of if-else construct.
11.  *****/
12.
13.  #include <cs50.h>
14.  #include <stdio.h>
15.
16.  int main(void)
17.  {
18.      // ask user for an integer
19.      printf("I'd like an integer please: ");
20.      int n = GetInt();
21.
22.      // analyze user's input (somewhat inaccurately)
23.      if (n > 0)
24.          printf("You picked a positive number!\n");
25.      else
26.          printf("You picked a negative number!\n");
27.
28.      return 0;
29.  }
```

```
1.  /*****
2.   * conditions2.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Tells user if his or her input is positive or negative.
8.   *
9.   * Demonstrates use of if-else if-else construct.
10.  *****/
11.
12. #include <cs50.h>
13. #include <stdio.h>
14.
15. int main(void)
16. {
17.     // ask user for an integer
18.     printf("I'd like an integer please: ");
19.     int n = GetInt();
20.
21.     // analyze user's input
22.     if (n > 0)
23.         printf("You picked a positive number!\n");
24.     else if (n == 0)
25.         printf("You picked zero!\n");
26.     else
27.         printf("You picked a negative number!\n");
28.
29.     return 0;
30. }
```

```
1.  /*****
2.   * f2c.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Converts Fahrenheit to Celsius.
8.   *
9.   * Demonstrates arithmetic.
10.  *****/
11.
12. #include <cs50.h>
13. #include <stdio.h>
14.
15. int main(void)
16. {
17.     // ask user user for temperature in Fahrenheit
18.     printf("Temperature in F: ");
19.     float f = GetFloat();
20.
21.     // convert F to C
22.     float c = 5 / 9.0 * (f - 32);
23.
24.     // display result
25.     printf("%.1f F = %.1f C\n", f, c);
26.
27.     return 0;
28. }
```

```
1.  /*****
2.   * hello1.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Says hello to the world.
8.   *
9.   * Demonstrates use of printf.
10.  *****/
11.
12.  #include <stdio.h>
13.
14.  int main(void)
15.  {
16.      printf("hello, world!\n");
17.      return 0;
18.  }
```

```
1.  /*****
2.   * hai2.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Says hello to just David.
8.   *
9.   * Demonstrates use of CS50's library.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      string name = "David";
18.      printf("hello, %s!\n", name);
19.      return 0;
20.  }
```

```
1.  /*****
2.   * hai3.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Says hello to whomever.
8.   *
9.   * Demonstrates use of CS50's library and standard input.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      printf("State your name: ");
18.      string name = GetString();
19.      printf("hello, %s!\n", name);
20.      return 0;
21.  }
```

```
1.  /*****
2.   * nonswitch.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Assesses the size of user's input.
8.   *
9.   * Demonstrates use of Boolean ANDing.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      // ask user for an integer
18.      printf("Give me an integer between 1 and 10: ");
19.      int n = GetInt();
20.
21.      // judge user's input
22.      if (n >= 1 && n <= 3)
23.          printf("You picked a small number.\n");
24.      else if (n >= 4 && n <= 6)
25.          printf("You picked a medium number.\n");
26.      else if (n >= 7 && n <= 10)
27.          printf("You picked a big number.\n");
28.      else
29.          printf("You picked an invalid number.\n");
30.      return 0;
31.  }
```



```
1.  /*****
2.   * positive1.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Demands that user provide a positive number.
8.   *
9.   * Demonstrates use of do-while.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      // loop until user provides a positive integer
18.      int n;
19.      do
20.      {
21.          printf("I demand that you give me a positive integer: ");
22.          n = GetInt();
23.      }
24.      while (n < 1);
25.      printf("Thanks for the %d!\n", n);
26.      return 0;
27.  }
```

```
1.  /*****
2.   * positive2.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Demands that user provide a positive number.
8.   *
9.   * Demonstrates use of bool.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      // loop until user provides a positive integer
18.      bool thankful = false;
19.      do
20.      {
21.          printf("I demand that you give me a positive integer: ");
22.          if (GetInt() > 0)
23.              thankful = true;
24.      }
25.      while (thankful == false);
26.      printf("Thanks for the positive integer!\n");
27.      return 0;
28.  }
```

```
1.  /*****
2.   * positive3.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Demands that user provide a positive number.
8.   *
9.   * Demonstrates use of !.
10.  *****/
11.
12.  #include <cs50.h>
13.  #include <stdio.h>
14.
15.  int main(void)
16.  {
17.      // loop until user provides a positive integer
18.      bool thankful = false;
19.      do
20.      {
21.          printf("I demand that you give me a positive integer: ");
22.          if (GetInt() > 0)
23.              thankful = true;
24.      }
25.      while (!thankful);
26.      printf("Thanks for the positive integer!\n");
27.      return 0;
28.  }
```

```
1.  /*****
2.   * switch1.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Assesses the size of user's input.
8.   *
9.   * Demonstrates use of a switch.
10.  *****/
11.
12. #include <cs50.h>
13. #include <stdio.h>
14.
15. int main(void)
16. {
17.     // ask user for an integer
18.     printf("Give me an integer between 1 and 10: ");
19.     int n = GetInt();
20.
21.     // judge user's input
22.     switch (n)
23.     {
24.         case 1:
25.         case 2:
26.         case 3:
27.             printf("You picked a small number.\n");
28.             break;
29.
30.         case 4:
31.         case 5:
32.         case 6:
33.             printf("You picked a medium number.\n");
34.             break;
35.
36.         case 7:
37.         case 8:
38.         case 9:
39.         case 10:
40.             printf("You picked a big number.\n");
41.             break;
42.
43.         default:
44.             printf("You picked an invalid number.\n");
45.     }
46.
47.     return 0;
48. }
```

```
1.  /*****
2.   * switch2.c
3.   *
4.   * David J. Malan
5.   * malan@harvard.edu
6.   *
7.   * Assesses a user's grade.
8.   *
9.   * Demonstrates use of a switch.
10.  *****/
11.
12. #include <cs50.h>
13. #include <stdio.h>
14.
15. int main(void)
16. {
17.     // ask user for a char
18.     printf("Pick a letter grade: ");
19.     char c = GetChar();
20.
21.     // judge user's input
22.     switch (c)
23.     {
24.         case 'A':
25.         case 'a':
26.             printf("You picked an excellent grade.\n");
27.             break;
28.
29.         case 'B':
30.         case 'b':
31.             printf("You picked a good grade.\n");
32.             break;
33.
34.         case 'C':
35.         case 'c':
36.             printf("You picked a fair grade.\n");
37.             break;
38.
39.         case 'D':
40.         case 'd':
41.             printf("You picked a poor grade.\n");
42.             break;
43.
44.         case 'E':
45.         case 'e':
46.             printf("You picked a failing grade.\n");
47.             break;
48.
```

```
49.         default:
50.             printf("You picked an invalid grade.\n");
51.         }
52.
53.     return 0;
54. }
```