```
1   // Printing a command-line argument
2
3   #include <cs50.h>
4   #include <stdio.h>
5
6   int main(int argc, string argv[])
7   {
8       if (argc == 2)
9       {
10          printf("hello, %s\n", argv[1]);
11      }
12      else
13      {
14          printf("hello, world\n");
15      }
16  }
```

```c
// Printing command-line arguments

#include <cs50.h>
#include <stdio.h>

int main(int argc, string argv[])
{
    for (int i = 0; i < argc; i++)
    {
        printf("%s\n", argv[i]);
    }
}
```

```
1    // Printing characters in an array of strings
2
3    #include <cs50.h>
4    #include <stdio.h>
5    #include <string.h>
6
7    int main(int argc, string argv[])
8    {
9        for (int i = 0; i < argc; i++)
10       {
11           for (int j = 0, n = strlen(argv[i]); j < n; j++)
12           {
13               printf("%c\n", argv[i][j]);
14           }
15           printf("\n");
16       }
17   }
```

```
1   // Explicitly casts chars to ints
2
3   #include <stdio.h>
4
5   int main(void)
6   {
7       string s = get_string("Name: ");
8       for (int i = 0; i < strlen(s); i++)
9       {
10          printf("%c %i\n", s[i], (int) s[i]);
11      }
12  }
```

```c
// Buggy example for help50

int main(void)
{
    printf("hello, world\n")
}
```

```
1    // Buggy example for help50
2
3    #include <stdio.h>
4
5    int main(void)
6    {
7        string s = get_string("Name: ");
8        printf("hello, %s\n", s);
9    }
```

```c
// Buggy example for eprintf

#include <stdio.h>

int main(void)
{
    for (int i = 0; i <= 10; i++)
    {
        printf("#\n");
    }
}
```

```c
 1    // Buggy example for debug50
 2
 3    #include <cs50.h>
 4    #include <stdio.h>
 5
 6    int get_negative_int();
 7
 8    int main(void)
 9    {
10        int i = get_negative_int();
11        printf("%i\n", i);
12    }
13
14    int get_negative_int(void)
15    {
16        int n;
17        do
18        {
19            printf("n is ");
20            n = get_int("Negative integer: ");
21        }
22        while (n > 0);
23        return n;
24    }
```

```
1   // Capitalizes a string
2
3   #include <cs50.h>
4   #include <stdio.h>
5   #include <string.h>
6
7   int main(void)
8   {
9       string s = get_string("before: ");
10      printf("after:  ");
11      for (int i = 0, n = strlen(s); i < n; i++)
12      {
13          if (s[i] >= 'a' && s[i] <= 'z')
14          {
15              printf("%c", s[i] - ('a' - 'A'));
16          }
17          else
18          {
19              printf("%c", s[i]);
20          }
21      }
22      printf("\n");
23  }
```

```
1    // Capitalizes string using ctype library (and an unnecessary condition)
2
3    #include <cs50.h>
4    #include <ctype.h>
5    #include <stdio.h>
6    #include <string.h>
7
8    int main(void)
9    {
10       string s = get_string("before: ");
11       printf("after:  ");
12       for (int i = 0, n = strlen(s); i < n; i++)
13       {
14           if (islower(s[i]))
15           {
16               printf("%c", toupper(s[i]));
17           }
18           else
19           {
20               printf("%c", s[i]);
21           }
22       }
23       printf("\n");
24   }
```

```
1   // Capitalizes string using ctype library
2
3   #include <cs50.h>
4   #include <ctype.h>
5   #include <stdio.h>
6   #include <string.h>
7
8   int main(void)
9   {
10      string s = get_string("before: ");
11      printf("after:  ");
12      for (int i = 0, n = strlen(s); i < n; i++)
13      {
14          printf("%c", toupper(s[i]));
15      }
16      printf("\n");
17  }
```

```
1    // Returns explicit value from main
2
3    #include <cs50.h>
4    #include <stdio.h>
5
6    int main(int argc, string argv[])
7    {
8        if (argc != 2)
9        {
10            printf("missing command-line argument\n");
11            return 1;
12        }
13        printf("hello, %s\n", argv[1]);
14        return 0;
15   }
```

```c
// Prints four question marks

#include <stdio.h>

int main(void)
{
    printf("????\n");
}
```

```
1   // Prints four question marks using a loop
2
3   #include <stdio.h>
4
5   int main(void)
6   {
7       for (int i = 0; i < 4; i++)
8       {
9           printf("?");
10      }
11      printf("\n");
12  }
```

```c
// Prints any number of question marks, as specified by user

#include <cs50.h>
#include <stdio.h>

int main(void)
{
    int n = get_int("Number: ");
    for (int i = 0; i < n; i++)
    {
        printf("?");
    }
    printf("\n");
}
```

```c
1   // Prints a positive number of question marks, as specified by user
2
3   #include <cs50.h>
4   #include <stdio.h>
5
6   int main(void)
7   {
8       // Prompt user for a positive number
9       int n;
10      do
11      {
12          n = get_int("Positive number: ");
13      }
14      while (n <= 0);
15
16      // Print out that many bricks
17      for (int i = 0; i < n; i++)
18      {
19          printf("#\n");
20      }
21  }
```

```c
 1    // Prints a square of bricks, sized as specified by user
 2
 3    #include <cs50.h>
 4    #include <stdio.h>
 5
 6    int main(void)
 7    {
 8        // Prompt user for a positive number
 9        int n;
10        do
11        {
12            n = get_int("Positive number: ");
13        }
14        while (n <= 0);
15
16        // Print out this many rows
17        for (int i = 0; i < n; i++)
18        {
19            // Print out this many columns
20            for (int j = 0; j < n; j++)
21            {
22                printf("#");
23            }
24            printf("\n");
25        }
26    }
```

```
1    // Prints string char by char
2
3    #include <cs50.h>
4    #include <stdio.h>
5    #include <string.h>
6
7    int main(void)
8    {
9        string s = get_string("input:  ");
10       printf("output: ");
11       for (int i = 0; i < strlen(s); i++)
12       {
13           printf("%c\n", s[i]);
14       }
15   }
```

```
1    // Prints string char by char, one per line
2
3    #include <cs50.h>
4    #include <stdio.h>
5    #include <string.h>
6
7    int main(void)
8    {
9        string s = get_string("input: ");
10       printf("output:\n");
11       for (int i = 0, n = strlen(s); i < n; i++)
12       {
13           printf("%c\n", s[i]);
14       }
15   }
```

```c
1   // Determines the length of a string
2
3   #include <cs50.h>
4   #include <stdio.h>
5
6   int main(void)
7   {
8       // Prompt for user's name
9       string s = get_string("Name: ");
10
11      // Count number of characters up until '\0' (aka NUL)
12      int n = 0;
13      while (s[n] != '\0')
14      {
15          n++;
16      }
17      printf("%i\n", n);
18  }
```