

```
switch_1.c

1 #include <stdio.h>
2
3 // This program demonstrates the use of a switch statement in C.
4
5 int main() {
6     int number;
7
8     printf("Enter an integer between 1 and 5: ");
9     scanf("%d", &number);
10
11    switch (number) {
12        case 1:
13            printf("You entered One.\n");
14            break;
15        case 2:
16            printf("You entered Two.\n");
17            break;
18        case 3:
19            printf("You entered Three.\n");
20            break;
21        case 4:
22            printf("You entered Four.\n");
23            break;
24        case 5:
25            printf("You entered Five.\n");
26            break;
27        default:
28            printf("Invalid input! Please enter a number between 1 and 5.\n");
29            break;
30    }
31
32    return 0;
33 }
34
35 /**
36 * write the above code using if-else statements instead of switch-case.
37 */
38
39 /*
40
41 #include <stdio.h>
42
43 int main() {
44     int number;
45
46     printf("Enter an integer between 1 and 5: ");
47     scanf("%d", &number);
48
49     if (number == 1) {
50         printf("You entered One.\n");
51     } else if (number == 2) {
```

```
52     printf("You entered Two.\n");
53 } else if (number == 3) {
54     printf("You entered Three.\n");
55 } else if (number == 4) {
56     printf("You entered Four.\n");
57 } else if (number == 5) {
58     printf("You entered Five.\n");
59 } else {
60     printf("Invalid input! Please enter a number between 1 and 5.\n");
61 }
62
63 return 0;
64 }
65 */
```

```
switch_2.c

1 #include <stdio.h>
2
3 // write a real world program that uses a switch statement in C.
4
5 int main() {
6     int day;
7
8     printf("Enter a day number (1-7): ");
9     scanf("%d", &day);
10
11    switch (day) {
12        case 1:
13            printf("Monday\n");
14            break;
15        case 2:
16            printf("Tuesday\n");
17            break;
18        case 3:
19            printf("Wednesday\n");
20            break;
21        case 4:
22            printf("Thursday\n");
23            break;
24        case 5:
25            printf("Friday\n");
26            break;
27        case 6:
28            printf("Saturday\n");
29            break;
30        case 7:
31            printf("Sunday\n");
32            break;
33        default:
34            printf("Invalid day number!\n");
35            break;
36    }
37
38    return 0;
39 }
40
41 /*
42 * write the above code using if-else statements instead of switch-case.
43 */
44
45 /*
46 include <stdio.h>
47
48 int main() {
49     int day;
50
51     printf("Enter a day number (1-7): ");
```

```
52     scanf("%d", &day);
53
54     if (day == 1) {
55         printf("Monday\n");
56     } else if (day == 2) {
57         printf("Tuesday\n");
58     } else if (day == 3) {
59         printf("Wednesday\n");
60     } else if (day == 4) {
61         printf("Thursday\n");
62     } else if (day == 5) {
63         printf("Friday\n");
64     } else if (day == 6) {
65         printf("Saturday\n");
66     } else if (day == 7) {
67         printf("Sunday\n");
68     } else {
69         printf("Invalid day number!\n");
70     }
71
72     return 0;
73 }
74 */
```

```
switch_5.c

1 #include <stdio.h>
2
3 // write a program to check leap year using switch case in C.
4
5 int main() {
6     int year;
7     int isLeap;
8
9     printf("Enter a year: ");
10    scanf("%d", &year);
11
12    // Determine if the year is a leap year
13    if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
14        isLeap = 1; // Leap year
15    } else {
16        isLeap = 0; // Not a leap year
17    }
18
19    switch (isLeap) {
20        case 1:
21            printf("%d is a leap year.\n", year);
22            break;
23        case 0:
24            printf("%d is not a leap year.\n", year);
25            break;
26        default:
27            printf("Error determining if %d is a leap year.\n", year);
28            break;
29    }
30
31    return 0;
32 }
```

switch_4.c

```
1 #include <stdio.h>
2
3 // write a program to check the number is even or odd using switch case in C.
4
5 int main() {
6     int num;
7
8     printf("Enter an integer: ");
9     scanf("%d", &num);
10
11    switch (num % 2) {
12        case 0:
13            printf("%d is even.\n", num);
14            break;
15        case 1:
16            printf("%d is odd.\n", num);
17            break;
18        default:
19            printf("Error: %d is not a valid integer.\n", num);
20            break;
21    }
22
23    return 0;
24 }
```

```
switch_3.c

1 #include <stdio.h>
2
3 // write a program to check the grade of a student using switch case in C.
4
5 int main() {
6     char grade;
7
8     printf("Enter the grade (A, B, C, D, F): ");
9     scanf(" %c", &grade);
10
11    switch (grade) {
12        case 'A':
13            printf("Excellent!\n");
14            break;
15        case 'B':
16            printf("Good job!\n");
17            break;
18        case 'C':
19            printf("You passed.\n");
20            break;
21        case 'D':
22            printf("You need to work harder.\n");
23            break;
24        case 'F':
25            printf("Failed. Better luck next time.\n");
26            break;
27        default:
28            printf("Invalid grade entered.\n");
29            break;
30    }
31
32    return 0;
33 }
34
35
36 /*
37 * write the above code using if-else statements instead of switch-case.
38 */
39
40 /*
41 #include <stdio.h>
42
43 int main() {
44     char grade;
45
46     printf("Enter the grade (A, B, C, D, F): ");
47     scanf(" %c", &grade);
48
49     if (grade == 'A') {
50         printf("Excellent!\n");
51     } else if (grade == 'B') {
```

```
52     printf("Good job!\n");
53 } else if (grade == 'C') {
54     printf("You passed.\n");
55 } else if (grade == 'D') {
56     printf("You need to work harder.\n");
57 } else if (grade == 'F') {
58     printf("Failed. Better luck next time.\n");
59 } else {
60     printf("Invalid grade entered.\n");
61 }
62
63 return 0;
64 }
65 */
```

leap_year.c

```
1 #include <stdio.h>
2
3 int main() {
4     int year;
5
6     printf("Enter a year: ");
7     scanf("%d", &year);
8
9     if (year % 400 == 0) {
10         printf("%d is a leap year.\n", year);
11     }
12     else if (year % 100 == 0) {
13         printf("%d is NOT a leap year.\n", year);
14     }
15     else if (year % 4 == 0) {
16         printf("%d is a leap year.\n", year);
17     }
18     else {
19         printf("%d is NOT a leap year.\n", year);
20     }
21
22     return 0;
23 }
24 }
```

for_loop.c

```
1 #include <stdio.h>
2
3 // print_numbers function prints numbers from 1 to n using a for loop
4
5 int main() {
6     int n;
7     // Prompt user for input
8     printf("Enter a positive integer: ");
9     scanf("%d", &n);
10    // Print numbers from 1 to n
11    for (int i = 1; i <= n; i++) {
12        printf("%d\n", i);
13    }
14
15    return 0;
16}
17
18 /*
19 * output example:
20 * Enter a positive integer: 5
21 * 1
22 * 2
23 * 3
24 * 4
25 * 5
26 */
```

countdown.c

```
1 #include <stdio.h>
2 // prints a countdown from 5 to 1 using a for loop
3 int main() {
4     for (int i = 5; i >= 1; i--) {
5         printf("%d\n", i);
6     }
7     return 0;
8 }
9
10 /*
11 * output example:
12 * 5
13 * 4
14 * 3
15 * 2
16 * 1
17 */
```

for_loop_2.c

```
1 #include <stdio.h>
2
3 // create a program that counts to 100 by tens
4 int main() {
5     for (int i = 0; i <= 100; i += 10) {
6         printf("%d\n", i);
7     }
8     return 0;
9 }
10
11 /*
12 * output example:
13 * 0
14 * 10
15 * 20
16 * 30
17 * 40
18 * 50
19 * 60
20 * 70
21 * 80
22 * 90
23 * 100
24 */
```

```
1 #include <stdio.h>
2 // create a program that only print even numbers between 0 and 10 (inclusive)
3 int main() {
4     /*
5         for (int i = 0; i <= 10; i++) {
6             if (i % 2 == 0) {
7                 printf("%d\n", i);
8             }
9         }
10    */
11
12    int i;
13    for (i = 0; i <= 10; i = i + 2) {
14        printf("%d\n", i);
15    }
16
17    return 0;
18 }
19
20 /*
21 * output example:
22 * 0
23 * 2
24 * 4
25 * 6
26 * 8
27 * 10
28 */
```