

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  */
```

for_loop_3.c

```
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 */
```