

File - D:\cpl\2023-cpl-coding-0\1-types-io\CMakeLists.txt

```
1 add_executable(circle circle.c)
2
3 add_executable(sphere sphere.c)
4 target_link_libraries(sphere m)
5
6 add_executable(mol mol.c)
7
8 add_executable(admin admin.c)
9 target_link_libraries(admin m)
10
11 add_executable(admin-scanf admin-scanf.c)
12 target_link_libraries(admin-scanf m)
13
14 add_executable(test test.c)
```

```
1 //
2 // Created by hfwei on 2023/9/21.
3 //
4
5 #include <stdio.h>
6
7 int main(void) {
8     // const: constant
9     const double PI = 3.14159;
10
11     int radius = 10;
12
13     double circumference = 2 * PI * radius;
14
15     double area = PI * radius * radius;
16
17     /*
18      * format is composed of zero or more directives:
19      * ordinary characters and conversion specifications introduced
20      by %
21      */
22     printf("radius = %d\ncircumference = %.2f\narea = %.2f\n",
23           radius, circumference, area);
24
25     return 0;
26 }
```

```
1 //
2 // Created by hfwei on 2023/9/21.
3 //
4
5 #include <stdio.h>
6 #include <math.h>
7
8 int main(void) {
9     const double PI = 3.14159;
10
11     int radius = 100;
12
13     double surface_area = 4 * PI * pow(radius, 2);
14     double volume = 4.0 / 3 * PI * pow(radius, 3);
15
16     // .4: precision
17     // 15: minimum width
18     // -: flag
19     printf("%-15.4f : surface_area\n%-15.4f : volume\n",
20           surface_area, volume);
21
22     return 0;
23 }
```

```
1 //
2 // Created by hfwei on 2023/9/21.
3 //
4
5 #include <stdio.h>
6 int main(void) {
7     const double MOL = 6.02E23;
8     const int GRAM_PER_MOL = 32;
9
10    int mass = 6;
11
12    double quantity = mass * 1.0 / GRAM_PER_MOL * MOL;
13
14    printf("quantity = %.3e\nquantity = %.5g\n",
15          quantity, quantity);
16
17    return 0;
18 }
```

```
1 //
2 // Created by hfwei on 2023/9/21.
3 //
4
5 #include <math.h>
6 #include <stdio.h>
7 #include <ctype.h>
8
9 int main(void) {
10     char first_name[] = "Tayu";
11     char last_name[] = "Lo";
12
13     char gender = 'm';
14     // char upper_gender = 'm' + 'A' - 'a';
15     // printf("upper_gender : %c\n", upper_gender);
16
17     int birth_year = 1954;
18     int birth_month = 7;
19     int birth_day = 20;
20     char weekday[] = "Tuesday";
21
22     int c_score = 50;
23     int music_score = 99;
24     int medicine_score = 78;
25
26     double mean = (c_score + music_score + medicine_score) / 3.0;
27     double sd = sqrt((pow(c_score - mean, 2) +
28         pow(music_score - mean, 2) +
29         pow(medicine_score - mean, 2)) / 3.0);
30
31     int rank = 10;
32
33     printf("%s %s \t %c\n"
34         "%.2d-%d-%d \t %.3s.\n"
35         "%d \t %d \t %d\n"
36         "%.1f \t %.2f \t %d%%\n",
37         first_name, last_name, toupper(gender),
38         birth_month, birth_day, birth_year, weekday,
39         c_score, music_score, medicine_score,
40         mean, sd, rank);
41
42     return 0;
43 }
```

```
1 //
2 // Created by hfwei on 2023/9/21.
3 //
4
5 #include <math.h>
6 #include <stdio.h>
7 #include <ctype.h>
8
9 int main(void) {
10     char first_name[10];
11     char last_name[10];
12
13     char gender;
14
15     int birth_year;
16     int birth_month;
17     int birth_day;
18     char weekday[10];
19
20     int c_score;
21     int music_score;
22     int medicine_score;
23     int rank;
24
25     /*
26      * zero or more directives:
27      * (1) one or more white-space characters ( , \t, \n);
28      * (2) ordinary characters (neither % nor white-space characters)
29      * (3) conversion specification introduced by %
30      */
31     scanf("%9s%9s %c %d-%d-%d %9s %d%d%d %*lf%*lf %d%%",
32           first_name, last_name, &gender,
33           &birth_year, &birth_month, &birth_day, weekday,
34           &c_score, &music_score, &medicine_score,
35           &rank);
36
37     double mean = (c_score + music_score + medicine_score) / 3.0;
38
39     double sd = sqrt((pow(c_score - mean, 2) +
40         pow(music_score - mean, 2) +
41         pow(medicine_score - mean, 2)) / 3.0);
42
43
44     printf("%s %s \t %c\n"
45           "%.2d-%d-%d \t %.3s.\n"
46           "%d \t %d \t %d\n"
47           "%.1f \t %.2f \t %d%%\n",
48           first_name, last_name, toupper(gender),
49           birth_month, birth_day, birth_year, weekday,
50           c_score, music_score, medicine_score,
51           mean, sd, rank);
52
53     return 0;
```

File - D:\cpl\2023-cpl-coding-0\1-types-io\admin-scanf.c

```
54  
55     return 0;  
56 }
```

File - D:\cpl\2023-cpl-coding-0\1-types-io\test.c

```
1 //
2 // Created by hfwei on 2023/9/21.
3 //
4
5 #include <stdio.h>
6
7 int main(void) {
8     int num;
9
10    scanf("%d", &num);
11
12    return 0;
13 }
```