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1  /* HW09_HASAN_MEN_131044009_complex.c */
2  /* part2 */
3  #include<math.h>
4  #include<stdio.h>
5  #include "HW09_HASAN_MEN_131044009_complex.h" /* fonksiyon prototipleri*/
6
7  /* output argunamina bi karmasik sayi doldurur */
8  int scan_complex(complex_t *c)
9  {
10
11     int status;
12
13     status=scanf("%lf%lf",&c->real,&c->imag);
14     if(status==2)
15         status=1;
16     else if(status!=EOF)
17         status=0;
18     return status;
19 }
20
21 /* a+bi yada a-bi olarak karmasik sayiyi yazdirir. */
22 /* a<0.005 ise bi , b<0.005 ise a olarak yazar */
23 void
24 print_complex(complex_t c) /* input - complex number to display */
25 {
26     double a, b;
27     char sign;
28
29     a = c.real;
30     b = c.imag;
31
32     printf("(");
33
34     if (fabs(a) < 0.005 && fabs(b) < 0.005) {
35         printf("%.2f", 0.0);
36     } else if (fabs(b) < .005) {
37         printf("%.2f", a);
38     } else if (fabs(a) < .005) {
39         printf("%.2fi", b);
40     } else {
41         if (b < 0)
42             sign = '-';
43         else
44             sign = '+';
45         printf("%.2f %c %.2fi", a, sign, fabs(b));
46     }
47
48     printf(")");
49 }
50
51 /* iki karmasik saiiy topolar ve complex_t turunde return eder */
52 complex_t add_complex(complex_t c1,complex_t c2)
53 {
54     complex_t sum;
55     sum.real=c1.real+c2.real;
56     sum.imag=c1.imag+c2.imag;
57     return sum;
58 }
59
60 /* karmasik sayilarin farkini alir ve complex_t olarak return eder */
61 complex_t subtract_complex(complex_t c1,complex_t c2)
62 {
63     complex_t sub;
64     sub.real=c1.real-c2.real;
65     sub.imag=c1.imag-c2.imag;
66     return sub;
67 }
68
69 /* gonderilen karmasik sayinin mutlagini alir ve complex_t olarak return eder*/
70 complex_t abs_complex(complex_t c)
71 {
72     complex_t abs;
```

```
73     abs.real=sqrt(c.real*c.real+c.imag*c.imag);
74     abs.imag=0;
75     return abs;
76 }
77
78 /* gonderilen iki karmasik sayiyi carpar ve sonucu return eder */
79 complex_t multiply_complex(complex_t c1,complex_t c2)
80 {
81
82     complex_t cmulti;
83
84     cmulti.real= c1.real*c2.real-c1.imag*c2.imag;
85     cmulti.imag= c1.real*c2.imag+c1.imag*c2.real;
86
87     return cmulti;
88 }
89
90 /* karmasik sayilari bolur ve sonucu return eder */
91 complex_t divide_complex(complex_t c1,complex_t c2)
92 {
93     complex_t cdivide;
94
95     double fractional = ((c2.imag)*(c2.imag)+(c2.real)*(c2.real));
96
97     cdivide.real = ((c1.real)*(c2.real)+(c1.imag)*((c2.imag))) / fractional;
98     cdivide.imag = (((-1)*(c1.real)*(c2.imag))+(c1.imag)*(c2.real))/fractional);
99
100     return cdivide;
101 }
```