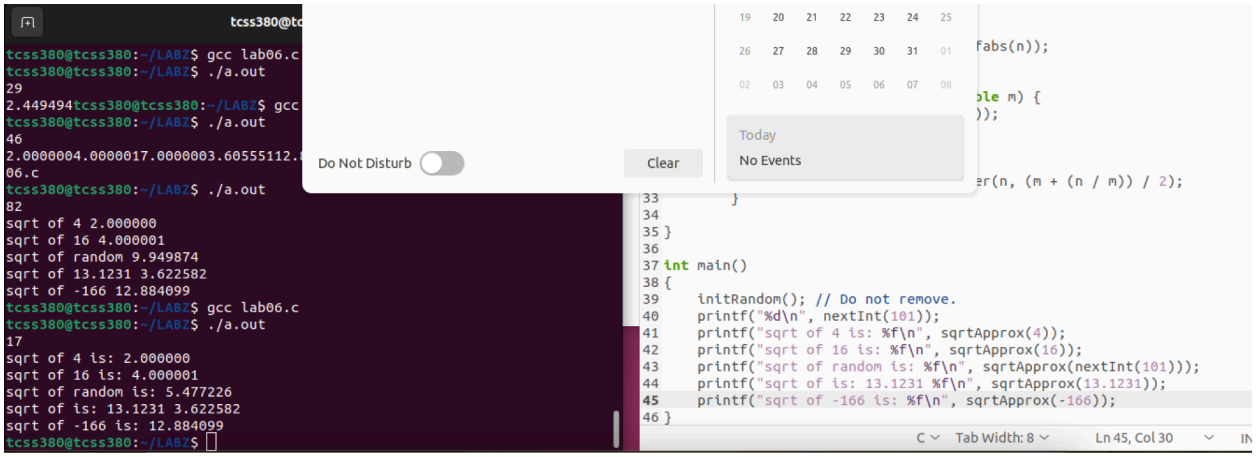
1-3



```
tcss380@tcss380:~/LABZ$ gcc lab06.c
tcss380@tcss380:~/LABZ$ ./a.out
29
2.449494tcss380@tcss380:~/LABZ$ gcc
tcss380@tcss380:~/LABZ$ ./a.out
46
2.0000004.0000017.0000003.60555112.
06.c
tcss380@tcss380:~/LABZ$ ./a.out
82
sqrt of 4 2.000000
sqrt of 16 4.000001
sqrt of random 9.949874
sqrt of 13.1231 3.622582
sqrt of -166 12.884099
tcss380@tcss380:~/LABZ$ gcc lab06.c
tcss380@tcss380:~/LABZ$ ./a.out
17
sqrt of 4 is: 2.000000
sqrt of 16 is: 4.000001
sqrt of random is: 5.477226
sqrt of is: 13.1231 3.622582
sqrt of -166 is: 12.884099
tcss380@tcss380:~/LABZ$
```

Do Not Disturb

Clear

Today

No Events

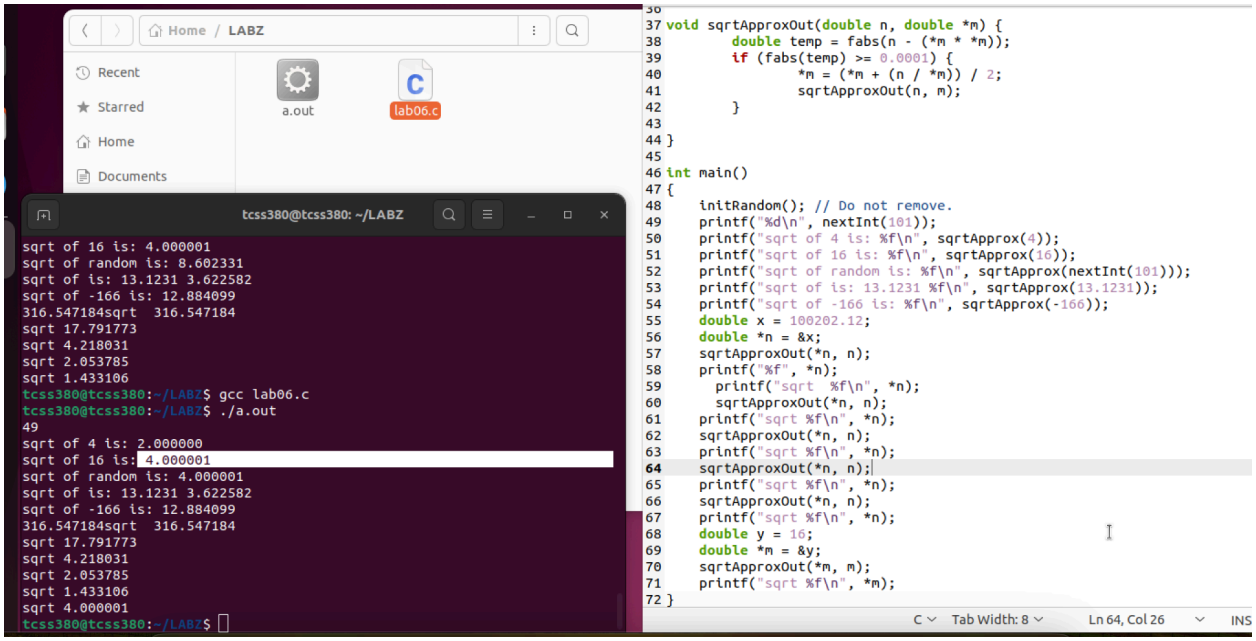
```
fabs(n));

ble m) {
));

er(n, (m + (n / m)) / 2);
    }
}
int main()
{
    initRandom(); // Do not remove.
    printf("%d\n", nextInt(101));
    printf("sqrt of 4 is: %f\n", sqrtApprox(4));
    printf("sqrt of 16 is: %f\n", sqrtApprox(16));
    printf("sqrt of random is: %f\n", sqrtApprox(nextInt(101)));
    printf("sqrt of is: 13.1231 %f\n", sqrtApprox(13.1231));
    printf("sqrt of -166 is: %f\n", sqrtApprox(-166));
}
```

C Tab Width: 8 Ln 45, Col 30

4-5



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a.out

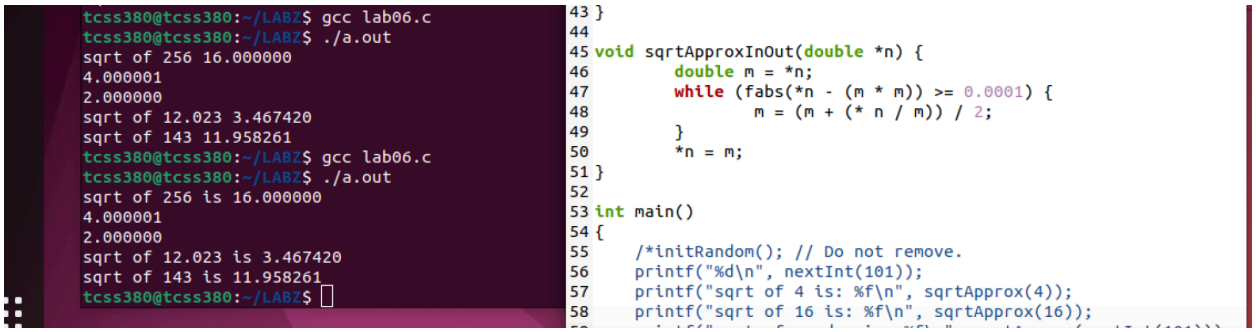
lab06.c

```
tcss380@tcss380: ~/LABZ
sqrt of 16 is: 4.000001
sqrt of random is: 8.602331
sqrt of is: 13.1231 3.622582
sqrt of -166 is: 12.884099
316.547184sqrt  316.547184
sqrt 17.791773
sqrt 4.218031
sqrt 2.053785
sqrt 1.433106
tcss380@tcss380:~/LABZ$ gcc lab06.c
tcss380@tcss380:~/LABZ$ ./a.out
49
sqrt of 4 is: 2.000000
sqrt of 16 is: 4.000001
sqrt of random is: 4.000001
sqrt of is: 13.1231 3.622582
sqrt of -166 is: 12.884099
316.547184sqrt  316.547184
sqrt 17.791773
sqrt 4.218031
sqrt 2.053785
sqrt 1.433106
sqrt 4.000001
tcss380@tcss380:~/LABZ$
```

```
void sqrtApproxOut(double n, double *m) {
        double temp = fabs(n - (*m * *m));
        if (fabs(temp) >= 0.0001) {
                *m = (*m + (n / *m)) / 2;
                sqrtApproxOut(n, m);
        }

}

int main()
{
    initRandom(); // Do not remove.
    printf("%d\n", nextInt(101));
    printf("sqrt of 4 is: %f\n", sqrtApprox(4));
    printf("sqrt of 16 is: %f\n", sqrtApprox(16));
    printf("sqrt of random is: %f\n", sqrtApprox(nextInt(101)));
    printf("sqrt of is: 13.1231 %f\n", sqrtApprox(13.1231));
    printf("sqrt of -166 is: %f\n", sqrtApprox(-166));
    double x = 100202.12;
    double *n = &x;
    sqrtApproxOut(*n, n);
    printf("%f", *n);
      printf("sqrt  %f\n", *n);
      sqrtApproxOut(*n, n);
    printf("sqrt %f\n", *n);
    sqrtApproxOut(*n, n);
    printf("sqrt %f\n", *n);
    sqrtApproxOut(*n, n);
    printf("sqrt %f\n", *n);
    double y = 16;
    double *m = &y;
    sqrtApproxOut(*m, m);
    printf("sqrt %f\n", *m);
}
```

C Tab Width: 8 Ln 64, Col 26 INS

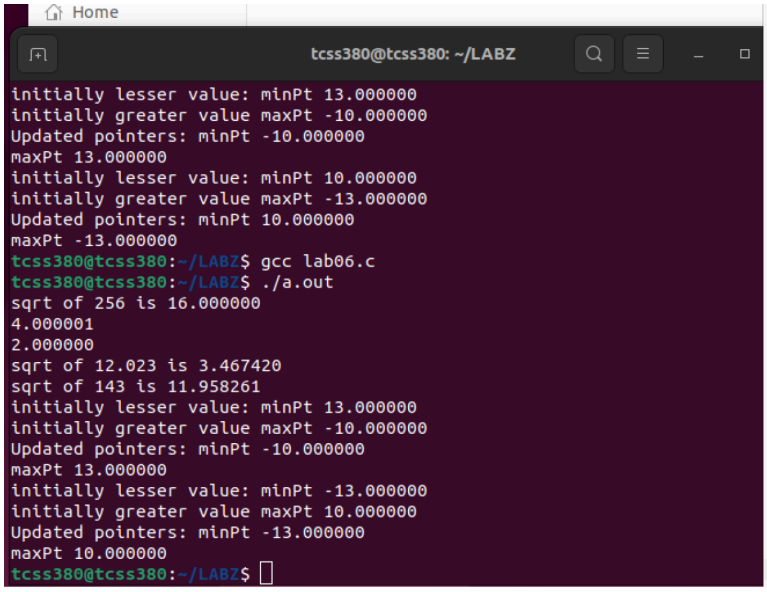
6-7



```
tcss380@tcss380:~/LABZ$ gcc lab06.c
tcss380@tcss380:~/LABZ$ ./a.out
sqrt of 256 16.000000
4.000001
2.000000
sqrt of 12.023 3.467420
sqrt of 143 11.958261
tcss380@tcss380:~/LABZ$ gcc lab06.c
tcss380@tcss380:~/LABZ$ ./a.out
sqrt of 256 is 16.000000
4.000001
2.000000
sqrt of 12.023 is 3.467420
sqrt of 143 is 11.958261
tcss380@tcss380:~/LABZ$
```

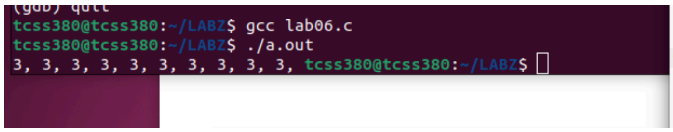
```
}

void sqrtApproxInOut(double *n) {
        double m = *n;
        while (fabs(*n - (m * m)) >= 0.0001) {
                m = (m + (* n / m)) / 2;
        }
        *n = m;
}

int main()
{
    /*initRandom(); // Do not remove.
    printf("%d\n", nextInt(101));
    printf("sqrt of 4 is: %f\n", sqrtApprox(4));
    printf("sqrt of 16 is: %f\n", sqrtApprox(16));
```

8-9



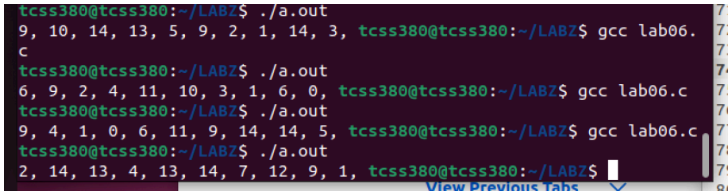

```
44
45 void sqrtApproxInOut(double *n) {
46         double m = *n;
47         while (fabs(*n - (m * m)) >= 0.0001
48                 m = (m + (* n / m)) / 2;
49         }
50         *n = m;
51 }
52
53 void minMax(double *a, double *b) {
54         if (*a > *b) {
55                 double temp = *a;
56                 *a = *b;
57                 *b = temp;
58         }
59 }
60
61 int main()
62 {
63     /*initRandom(); // Do not remove.
64     printf("%d\n", nextInt(101));
65     printf("sqrt of 4 is: %f\n", sqrtApprox
66     printf("sqrt of 16 is: %f\n", sqrtAppro
67     printf("sqrt of random is: %f\n", sqrtA
68     printf("sqrt of is: 13.1231 %f\n", sqrt
69     printf("sqrt of -166 is: %f\n", sqrtApp
70     double x = 100202.12;
71     double *n = &x;
```

10-11



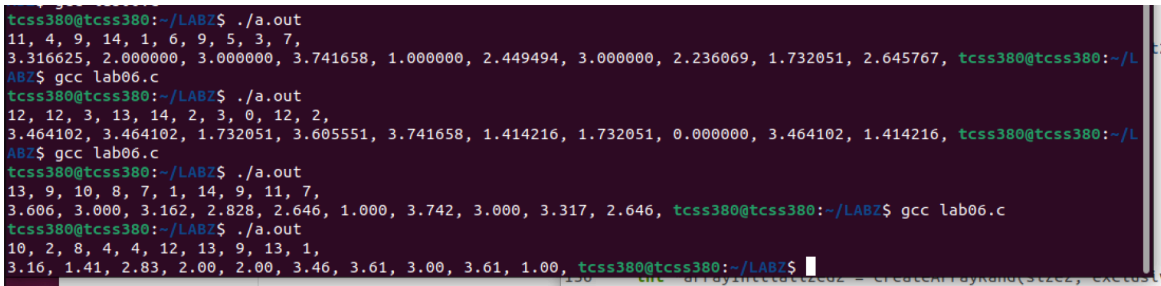

```
131     int *arrayInitialized = createArray(size, initVal);
132     for (unsigned int i = 0; i < size; i++) {
133         printf("%d, ", *(arrayInitialized + i));
134     }
135     free(arrayInitialized);
136
```

12-13




```
71 int* createArrayRand(int size, int exclusiveN) {
72         int *result  = malloc(size * sizeof(int));
73         int i;
74         initRandom();
75         for (i = 0; i < size; i++) {
76                 result[i] =  rand() % exclusiveN;
77         }
78         return result;
79 }
```

14-15




```
157     for (unsigned int i = 0; i < size2; i++) {
158         printf("%d, ", *(arrayInitialized2 + i));
159     }
160     printf("\n");
161     double *arrayOfSqrts = sqrtArray(size2, arrayInitialized2);
162     for (unsigned int i = 0; i < size2; i++) {
163         printf("%.2f, ", arrayOfSqrts[i]);
164     }
165     free(arrayOfSqrts);
166     free(arrayInitialized2);
```