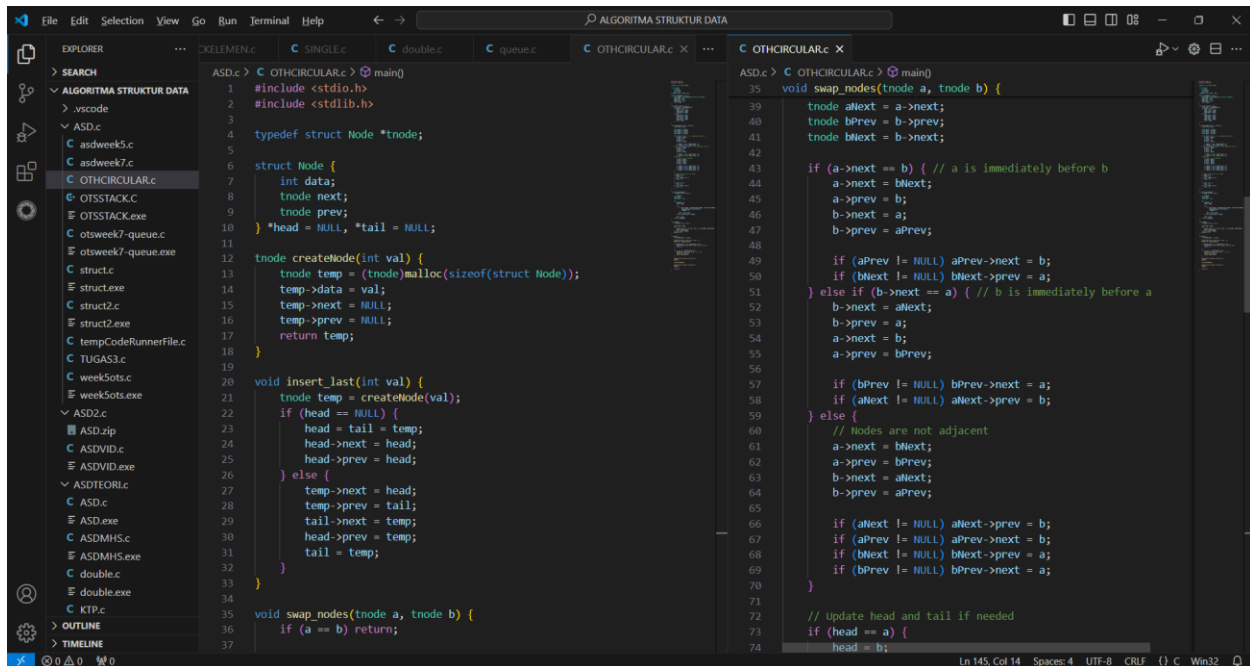


TUGAS PRAKTIKUM

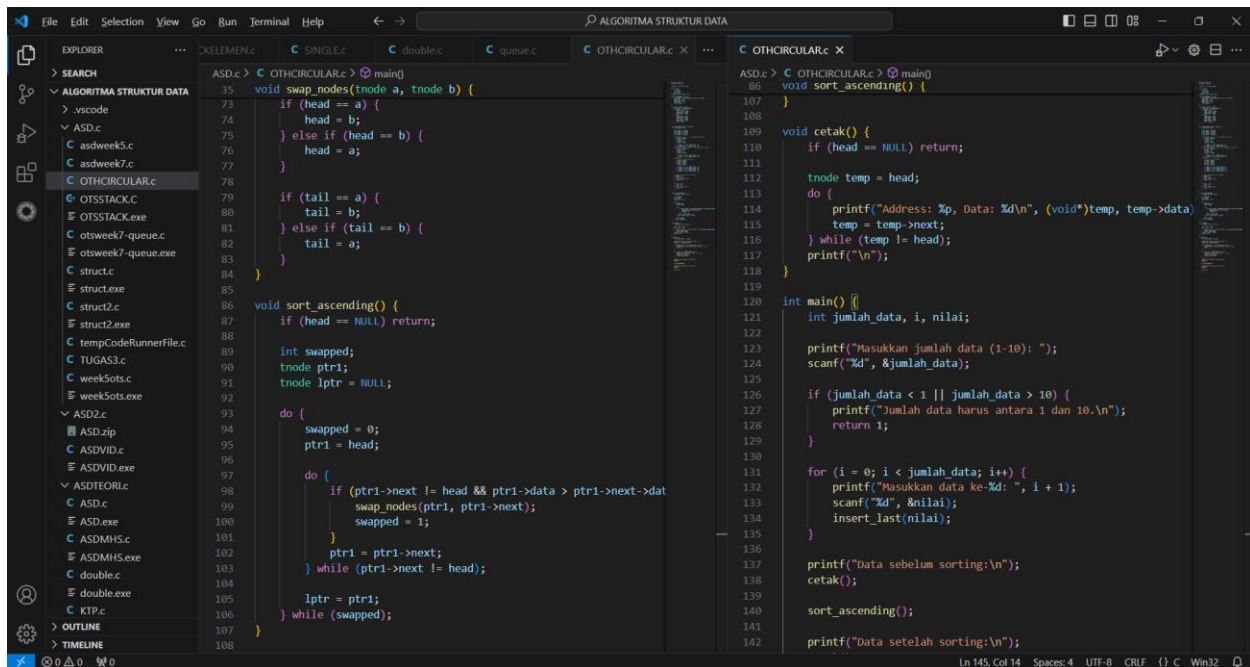
NAMA:KEVIN BETESDA KORNELIUS BANGUN

NIM:1203230019

KELAS:IF 03-02



```
ASD.c > C OTHIRCIRCULAR.c > main()
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 typedef struct Node *tnode;
5
6 struct Node {
7     int data;
8     tnode next;
9     tnode prev;
10 } *head = NULL, *tail = NULL;
11
12 tnode createNode(int val) {
13     tnode temp = (tnode)malloc(sizeof(struct Node));
14     temp->data = val;
15     temp->next = NULL;
16     temp->prev = NULL;
17     return temp;
18 }
19
20 void insert_last(int val) {
21     tnode temp = createNode(val);
22     if (head == NULL) {
23         head = tail = temp;
24         head->next = head;
25         head->prev = head;
26     } else {
27         temp->next = head;
28         temp->prev = tail;
29         tail->next = temp;
30         head->prev = temp;
31         tail = temp;
32     }
33 }
34
35 void swap_nodes(tnode a, tnode b) {
36     if (a == b) return;
37
38     tnode aNext = a->next;
39     tnode bPrev = b->prev;
40     tnode bNext = b->next;
41
42     if (a->next == b) { // a is immediately before b
43         a->next = bNext;
44         a->prev = b;
45         b->next = a;
46         b->prev = aPrev;
47     }
48     if (aPrev != NULL) aPrev->next = b;
49     if (bNext != NULL) bNext->prev = a;
50 } else if (b->next == a) { // b is immediately before a
51     b->next = aNext;
52     b->prev = a;
53     a->next = b;
54     a->prev = bPrev;
55 }
56
57 if (bPrev != NULL) bPrev->next = a;
58 if (aNext != NULL) aNext->prev = b;
59 } else {
60     // Nodes are not adjacent
61     a->next = bNext;
62     a->prev = bPrev;
63     b->next = aNext;
64     b->prev = aPrev;
65
66     if (aNext != NULL) aNext->prev = b;
67     if (aPrev != NULL) aPrev->next = a;
68     if (bNext != NULL) bNext->prev = a;
69     if (bPrev != NULL) bPrev->next = b;
70 }
71
72 // Update head and tail if needed
73 if (head == a) {
74     head = b;
```



```
ASD.c > C OTHIRCIRCULAR.c > main()
35 void swap_nodes(tnode a, tnode b) {
36     if (head == a) {
37         head = b;
38     } else if (head == b) {
39         head = a;
40     }
41 }
42
43 if (tail == a) {
44     tail = b;
45 } else if (tail == b) {
46     tail = a;
47 }
48
49 void sortAscending() {
50     if (head == NULL) return;
51
52     int swapped;
53     tnode ptr1;
54     tnode lptr = NULL;
55
56     do {
57         swapped = 0;
58         ptr1 = head;
59
60         do {
61             if (ptr1->next != head && ptr1->data > ptr1->next->data) {
62                 swap_nodes(ptr1, ptr1->next);
63                 swapped = 1;
64             }
65             ptr1 = ptr1->next;
66         } while (ptr1->next != head);
67
68         lptr = ptr1;
69     } while (swapped);
70 }
71
72 void cetak() {
73     if (head == NULL) return;
74     tnode temp = head;
75     do {
76         printf("Address: %p, Data: %d\n", (void*)temp, temp->data);
77         temp = temp->next;
78     } while (temp != head);
79     printf("\n");
80 }
81
82 int main() {
83     int jumlah_data, i, nilai;
84
85     printf("Masukkan jumlah data (1-10): ");
86     scanf("%d", &jumlah_data);
87
88     if (jumlah_data < 1 || jumlah_data > 10) {
89         printf("Jumlah data harus antara 1 dan 10.\n");
90         return 1;
91     }
92
93     for (i = 0; i < jumlah_data; i++) {
94         printf("Masukkan data ke-%d: ", i + 1);
95         scanf("%d", &nilai);
96         insert_last(nilai);
97     }
98
99     printf("Data sebelum sorting:\n");
100     cetak();
101
102     sortAscending();
103
104     printf("Data setelah sorting:\n");
105 }
```

```
File Edit Selection View Go Run Terminal Help
ALGORITMA STRUKTUR DATA
C struct.c C queue2.c C STACKELEMEN.c C SINGLE.c C double.c C queue.c C OTHIRCIRCULAR.c x
> SEARCH
ALGORITMA STRUKTUR DATA
> .vscode
ASD.c
  asdweek5.c
  asdweek7.c
  OTHIRCIRCULAR.c
  OTSSTACK.C
  OTSSTACK.exe
  otsweek7-queue.c
  otsweek7-queue.exe
  struct.c
  struct.exe
  struct2.c
  struct2.exe
  tempCodeRunnerFile.c
  TUGAS3.c
  week5ots.c
  week5ots.exe
  ASD2.c
    ASD.zip
    ASDVID.c
    ASDVID.exe
    ASDTEORIL.c
    ASD.c
    ASD.exe
    ASDMHS.c
    ASDMHS.exe
    double.c
    double.exe
    KTP.c
  OUTLINE
  TIMELINE
ASD.c > C OTHIRCIRCULAR.c > main()
109 void cetak() {
110     if (head == NULL) return;
111
112     tnode temp = head;
113     do {
114         printf("Address: %p, Data: %d\n", (void*)temp, temp->data);
115         temp = temp->next;
116     } while (temp != head);
117     printf("\n");
118 }
119
120 int main() {
121     int jumlah_data, i, nilai;
122
123     printf("Masukkan jumlah data (1-10): ");
124     scanf("%d", &jumlah_data);
125
126     if (jumlah_data < 1 || jumlah_data > 10) {
127         printf("Jumlah data harus antara 1 dan 10.\n");
128         return 1;
129     }
130
131     for (i = 0; i < jumlah_data; i++) {
132         printf("Masukkan data ke-%d: ", i + 1);
133         scanf("%d", &nilai);
134         insert_last(nilai);
135     }
136
137     printf("Data sebelum sorting:\n");
138     cetak();
139
140     sort_ascending();
141
142     printf("Data setelah sorting:\n");
143     cetak();
144
145     return 0;
Ln 145, Col 14 Spaces: 4 UTF-8 CRLF {} C Win32
```