Activity 1

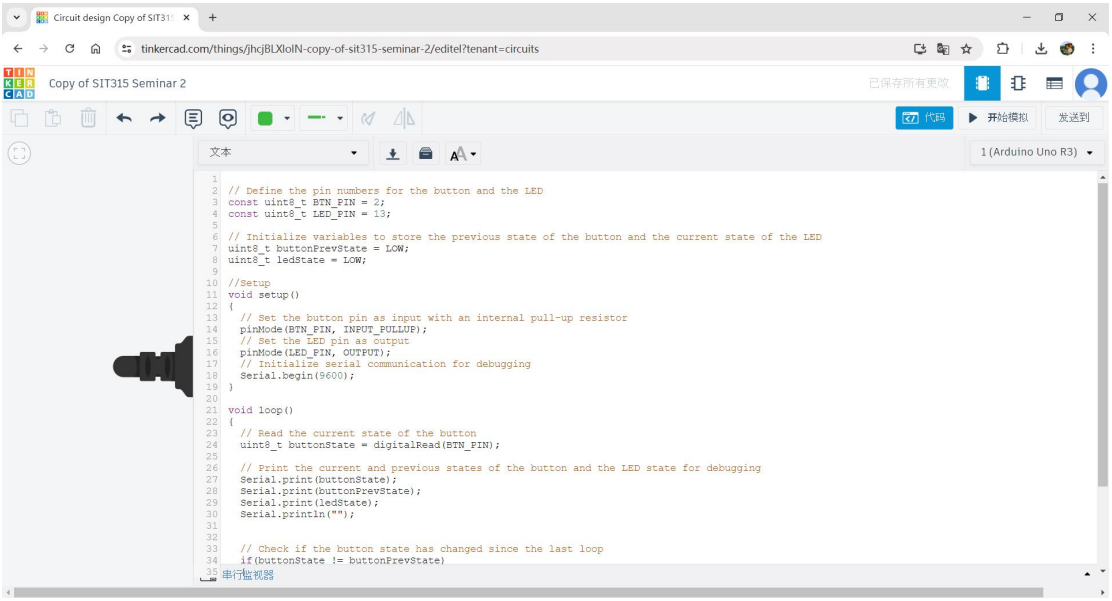
1. **Text Segment:** Stores the executable code of the program, including all functions and instructions.
2. **Data Segment:** Stores the global variable size and the static variable result from the sum function.
3. **Heap Segment:** When line 12 is executed for the third time, the heap stores the first three user input values (e.g., [4, 5, 8, 0]).

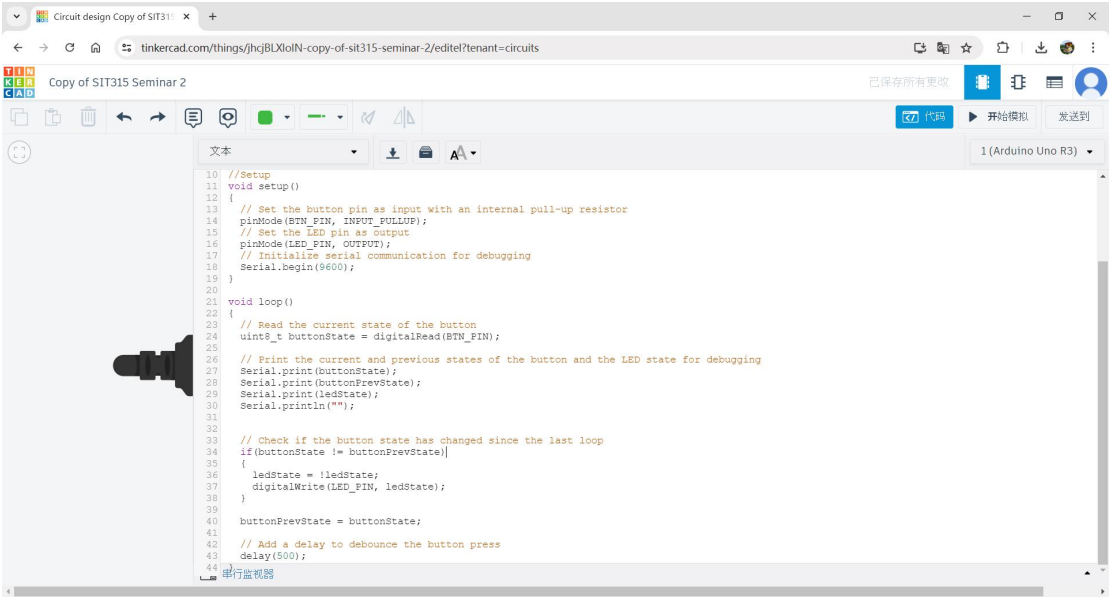
   Stack Segment: The stack stores local variables p, i, and total. At this point, i=2 and total contains the sum of the first three inputs.
4. **Heap Segment:** When line 33 is executed, the dynamically allocated array on the heap has been released.

   Stack Segment: The stack stores local variables p, i, and total. At this point, total contains the sum of all inputs, and i=4.

Activity 2

1.

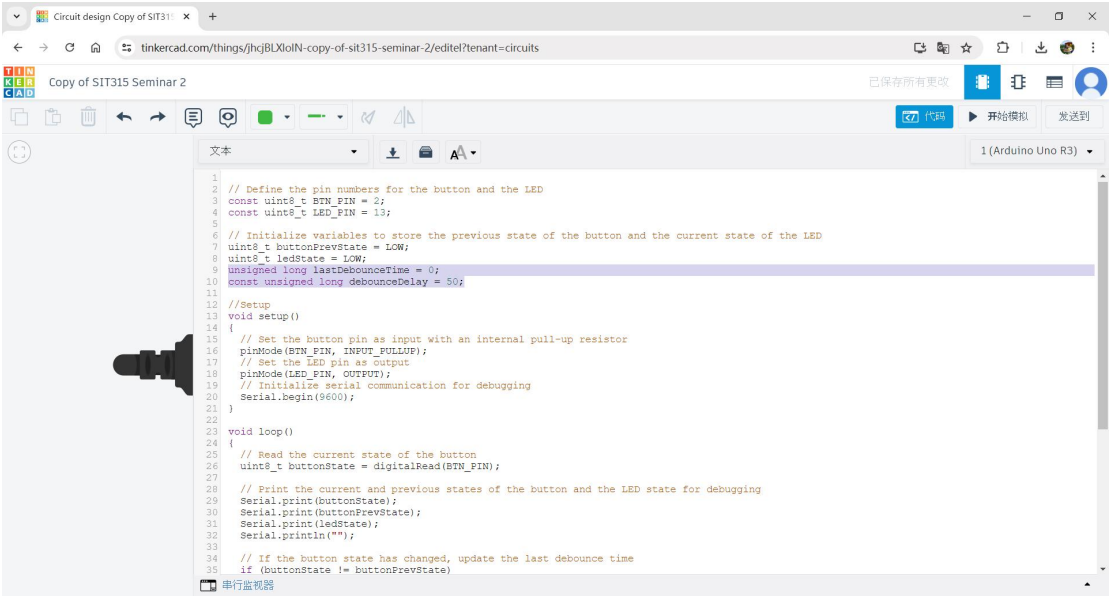


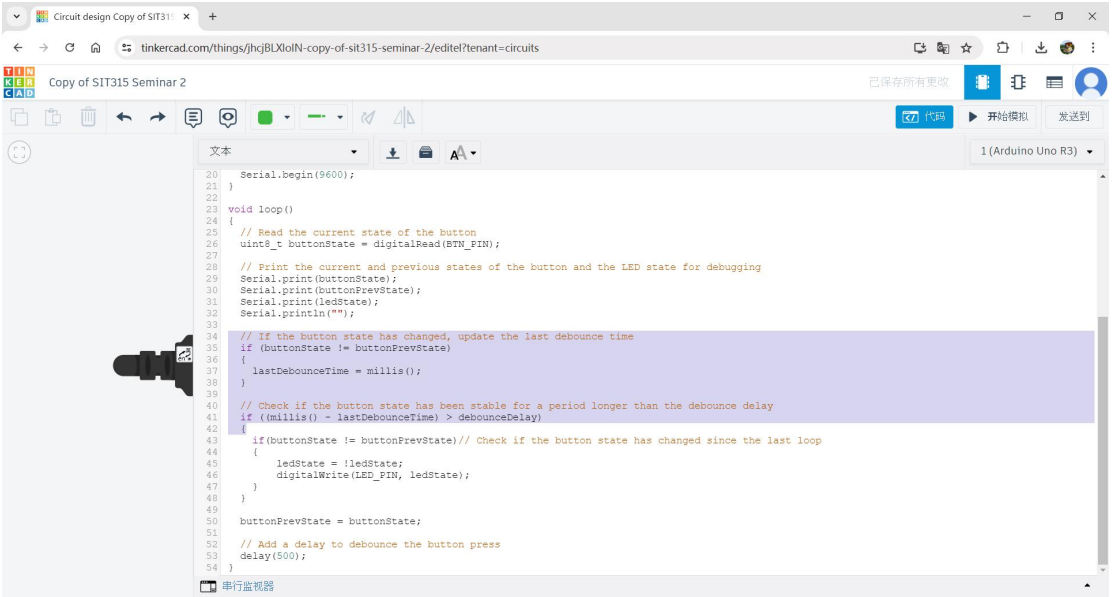


2.

The main problem with the code is the lack of proper debouncing for the button press, which could result in multiple toggles of the LED for a single button press due to the mechanical noise of the button.

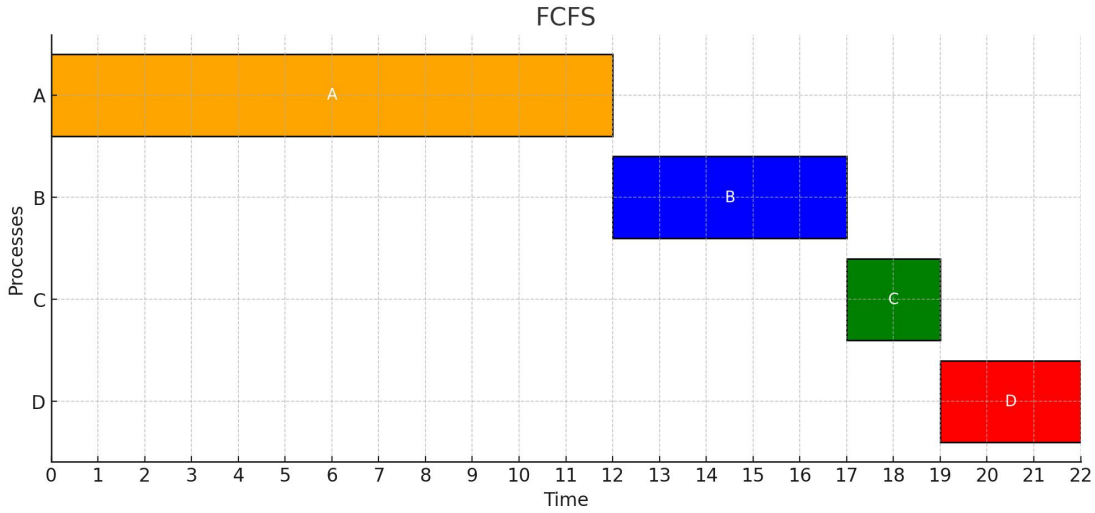
3.



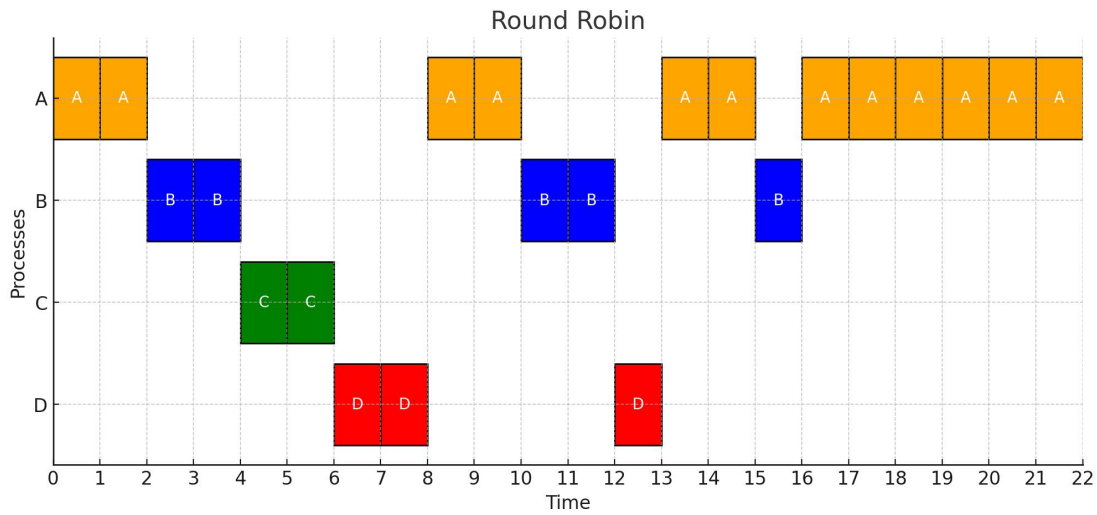


Activity 3

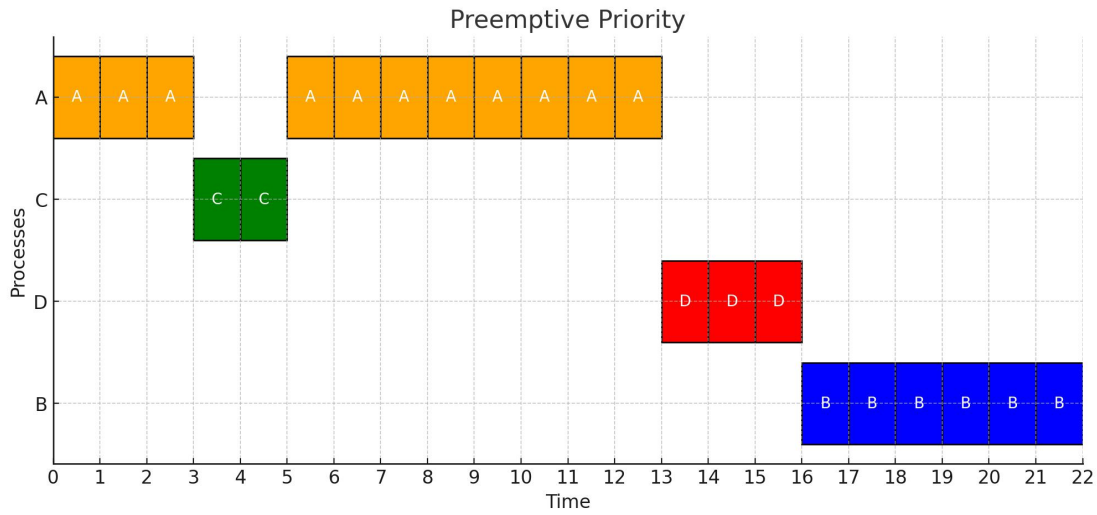
FCFS



Round-Robin



Preemptive Priority-Based



Waiting Time	A	B	C	D	Total	Average
FCFS	0	11	14	15	40	10
RR	10	10	1	6	27	6.75
PP	2	16	0	10	28	7

A scheduling algorithm with a lower waiting time is the Shortest Remaining Time First (SRTF). SRTF always selects the process with the shortest remaining burst time to execute next, minimizing the average waiting time.