Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Session 2025-2026

Vision: Dream of where you want.	**Mission:** Means to achieve Vision

Program Educational Objectives of the program (PEO): (broad statements that describe the professional and career accomplishments)

PEO1	**Preparation**	**P: Preparation**	**Pep-CL abbreviation pronounce as Pep-si-lL easy to recall**
PEO2	**Core Competence**	**E: Environment (Learning Environment)**	
PEO3	**Breadth**	**P: Professionalism**	
PEO4	**Professionalism**	**C: Core Competence**	
PEO5	**Learning Environment**	**L: Breadth (Learning in diverse areas)**	

Program Outcomes (PO):

Keywords of POs:
Engineering knowledge, Problem analysis, Design/development of solutions, Conduct Investigations of Complex Problems, Engineering Tool Usage, The Engineer and The World, Ethics, Individual and Collaborative Team work, Communication, Project Management and Finance, Life-Long Learning

PSO Keywords: Cutting edge technologies, Research

"I am an engineer, and I know how to apply engineering knowledge to investigate, analyse and design solutions to complex problems using tools for entire world following all ethics in a collaborative way with proper management skills throughout my life." *to contribute to the development of cutting-edge technologies and Research*.

Integrity: I will adhere to the Laboratory Code of Conduct and ethics in its entirety.

Name and Signature of Student and Date
(Signature and Date in Handwritten)

Session	**2025-26 (ODD)**	**Course Name**	**Operating System Lab**

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Semester	**5**	**Course Code**	**23IOT1504**
Roll No	**53**	**Name of Student**	**Parth Dighade**

Practical Number	**MSPA**
Course Outcome	1. Understand Computer System Configuration and Simulate system resources efficiently using Linux Commands (CO1) 2. Analyse operating system functionalities utilizing system calls, thread programming and process scheduling algorithms (CO2) 3. Apply Synchronization primitives to implement a Deadlock-free solution(CO3) 4. Simulate Disk scheduling, Memory allocation, File allocation, page replacement algorithms (CO4)
Aim:	1. Train 2. Process creation using system calls 3.CPU Scheduling
Program:	

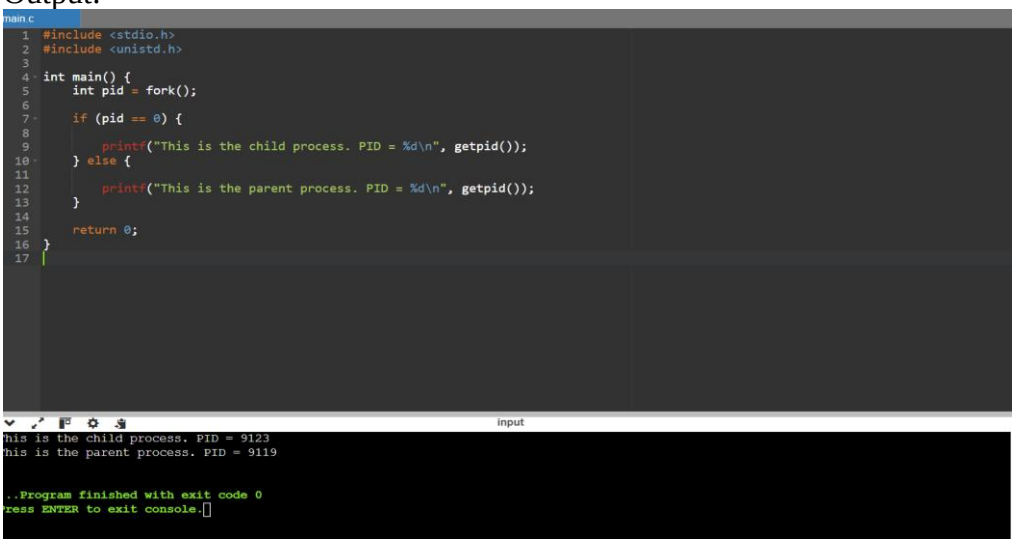
	Code:
	2.
	#include <stdio.h>
	#include <unistd.h>
	
	int main() {
	int pid = fork();
	
	if (pid == 0) {
	
	printf("This is the child process. PID = %d\n", getpid());
	} else {
	
	printf("This is the parent process. PID = %d\n", getpid());
	}
	
	return 0;
	}

3.

```
#include <stdio.h>

int main() {
    int n;
    printf("Enter number of processes: ");
    scanf("%d", &n);

    int bt[20], at[20], rt[20];
    int wt[20], tat[20];
    int done[20];
    int time = 0, finished = 0;


    for (int i = 0; i < n; i++) {
        printf("Enter Arrival Time and Burst Time for Process %d: ", i + 1);
        scanf("%d %d", &at[i], &bt[i]);
        rt[i] = bt[i];
        done[i] = 0;
    }


    while (finished < n) {
        int shortest = -1;
        int min_rt = 9999;


        for (int i = 0; i < n; i++) {
            if (at[i] <= time && rt[i] > 0 && rt[i] < min_rt) {
                min_rt = rt[i];
                shortest = i;
            }
        }

        if (shortest == -1) {
            time++;
            continue;
        }


        rt[shortest]--;


        if (rt[shortest] == 0) {
```

```
            finished++;
            int completion = time + 1;
            tat[shortest] = completion - at[shortest];
            wt[shortest] = tat[shortest] - bt[shortest];
            done[shortest] = 1;
        }

        time++;
    }


    printf("\nProcess\tAT\tBT\tWT\tTAT\n");
    float total_wt = 0, total_tat = 0;
    for (int i = 0; i < n; i++) {
        printf("P%d\t%d\t%d\t%d\t%d\n", i + 1, at[i], bt[i], wt[i], tat[i]);
        total_wt += wt[i];
        total_tat += tat[i];
    }

    printf("\nAverage Waiting Time = %.2f", total_wt / n);
    printf("\nAverage Turnaround Time = %.2f\n", total_tat / n);

    return 0;
}
```

Output:



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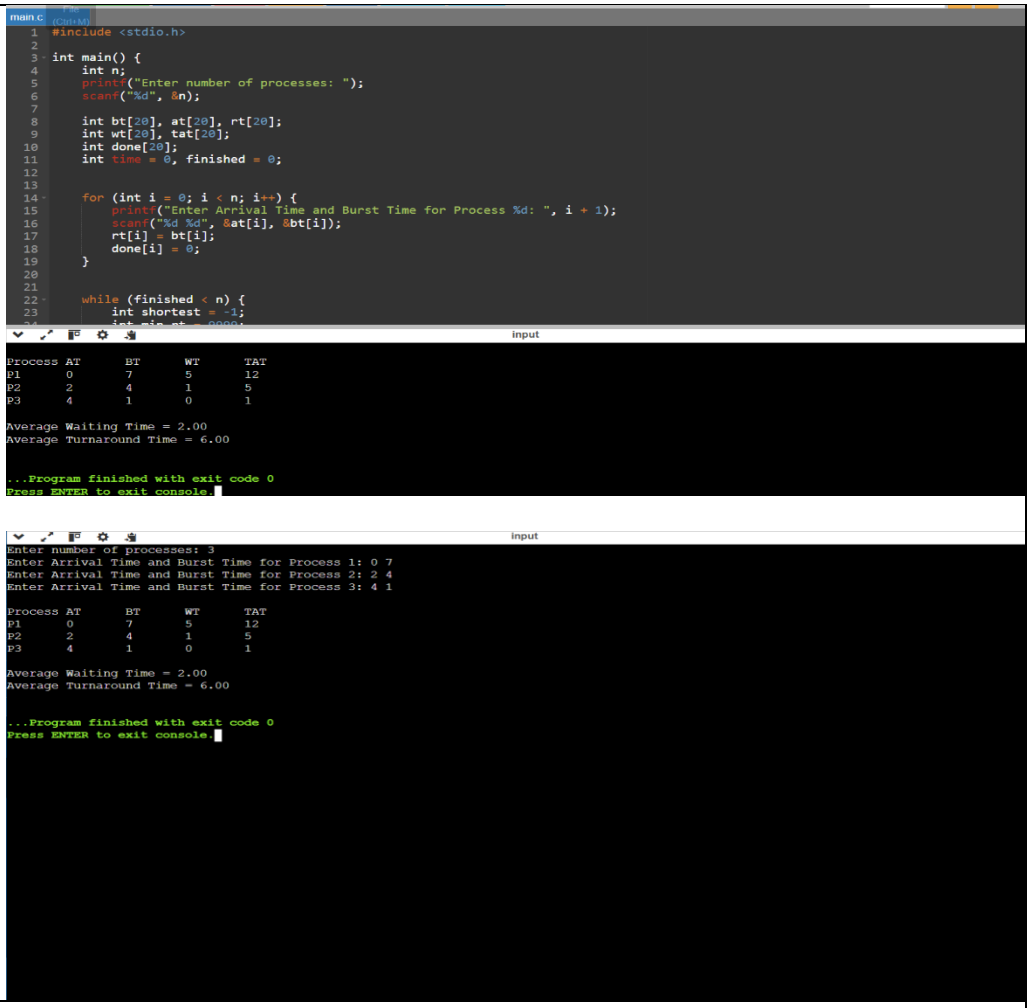

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