**OPERATING SYSTEMS: CPU SCHEDULING   
PROGRAMMING ACTIVITY**

**A Documentary Research Paper Presented to**

**Computer Studies Department of College of Science**

**TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES**

**In Partial Fulfillment of the**

**Requirements for**

**OPERATING SYSTEMS**

**BSCS 2C-M**

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1. **RATIONALE**

**CPU Scheduling** is an essential component of an operating system that manages the execution of processes on a computer's central processing unit (CPU). It determines the order in which processes are allocated CPU time and provides a mechanism for efficient utilization of the CPU's resources.

1. **SJF Scheduling (Shortest Job First)** – Aims to minimize the average waiting time of processes by selecting the shortest job to run next. This algorithm is that shorter jobs tend to be completed faster, leading to reduced waiting times for all processes. It can be either non-preemptive or preemptive, meaning that once a process starts executing, it may or may not be interrupted by another process.
2. **Pre-Emptive Scheduling** – Allows a running process to be interrupted and temporarily halted by another process with higher priority. This is typically used in real-time systems or when time-sharing is required.
3. **Round Robin Scheduling** - Allocates CPU time in fixed time slices called time quantum or time slice to each process in a cyclic manner. If a process does not complete within its time slice, it is preempted and moved to the end of the queue to wait for its turn again.
4. **ALGORITHM, CODE AND RUN PROGRAM**

**CODE FOR SHORTEST JOB FIRST PRIORITY**

**A screen shot of a computer program

Description automatically generated with low confidence**

**A screen shot of a computer code

Description automatically generated with low confidence**

**CODE FOR PRE-EMPTIVE PRIORITY**

**A screen shot of a computer program

Description automatically generated with low confidence**

**A screen shot of a computer program

Description automatically generated with low confidence**

**CODE FOR ROUND ROBIN PRIORITY**

**A picture containing text, screenshot, software

Description automatically generated**

**A picture containing text, screenshot, software, display

Description automatically generated**

**RUN PROGRAM**

**FOR SHORTEST JOB FIRST**

**A screen shot of a computer

Description automatically generated with low confidence**

**FOR PRE-EMPTIVE PRIORTY**

**A screen shot of a computer

Description automatically generated with medium confidence**

**FOR ROUND ROBIN PRIORITY**

**A screen shot of a computer

Description automatically generated with low confidence**