DEPARTMENT OF INFORMATION TECHNOLOGY::VRSEC

REPORT ON INNOVATIVE DELIVERY METHOD

20IT3305 – OPERATING SYSTEMS

A.Y. 2021-22
FLIPPED CLASS ROOM

Name of the Topic: Disk Scheduling Algorithms

Target Audience: Students of II/IV B.Tech I Semester

Date of activity conducted: 18-02-2022 (Section A) ,15-02-2022(Section B)

No. of students participated : 127

Name of the Faculty :Dr.T.Anuradha, Professor,
Dr.K.SitaKumari, Associate Professor

Objective of the activity:

- Understand the purpose and concepts of Disk Scheduling.
- Identify various algorithms for scheduling the I/O requests on magnetic disk.
- Apply Disk Scheduling algorithms for the given problem statement.

Resources provided to the students before conducting the activity:

- Learning Material
- PPT
- Video Lecture links

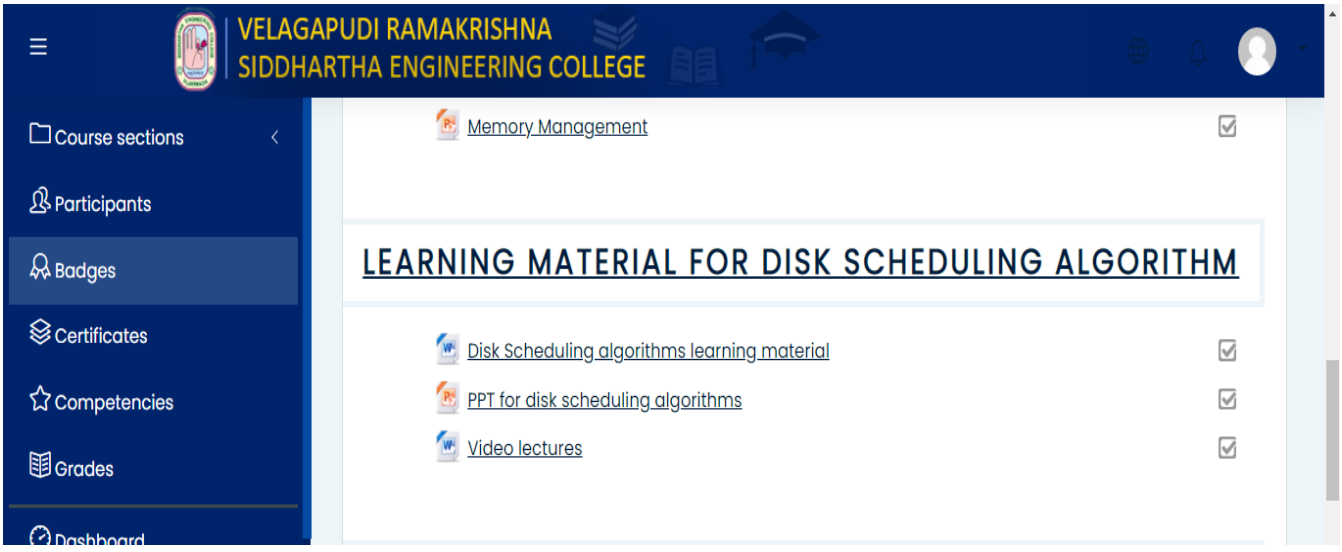


Figure1: Snapshot of resources provided through Moodle

Introduction:

Good Teaching is one of the most important tasks of the faculty. Students are needed to get understand the concepts clearly and provide solutions to the problems. Flipped classroom is one way to ensure that class time is spent in assimilation, rather than in information transmission.

- Instructor finds or creates videos on topic.
- Students watch video before coming to class.
- Class time is spent in activities and discussions.

The students can understand the topic through the resources provided and get more clearly with the discussions and activity done in groups.

As a part of activity, students are divided into groups of their own with minimum batch size of 4 and task on disk scheduling algorithm is given for each group and students are asked to discuss among themselves and solve the problem. One representative from each group is asked to demonstrate the solution for the task given to them.

. **Execution Plan:**

Time management: Class time: **50mins**

- Formation of Groups : 5 mins
- Dissemination of problem statements : 5 mins
- Discussion on Disk Scheduling algorithm given within the group : 10 mins
- Problem solving : 15 mins
- Demonstration by the students : 10 mins
- Course coordinator summary : 5mins

Expected Outcomes:

The students can be able to

- Understand the concepts and terminology of Disk Scheduling algorithms
- Apply various Disk Scheduling algorithms for the given problem statement
- Analyze the performance of various Disk Scheduling algorithms in terms of seek time
- Improve team work and communication skills.

Assessment of the effectiveness of the activity by comparing marks of Assignment II with Sessional II:

Snapshot of task done and the photos of the activity:

DEAPRTMENT OF INFORMATION TECHNOLOGY :: VRSEC

II/IV B.TECH SEMESTER 1 AY:2021-22 Dt: 15.2.2022

20IT3305 : OPERATING SYSTEMS

STUDENT ACTIVITY : TOPIC: DISK SCHEDULING

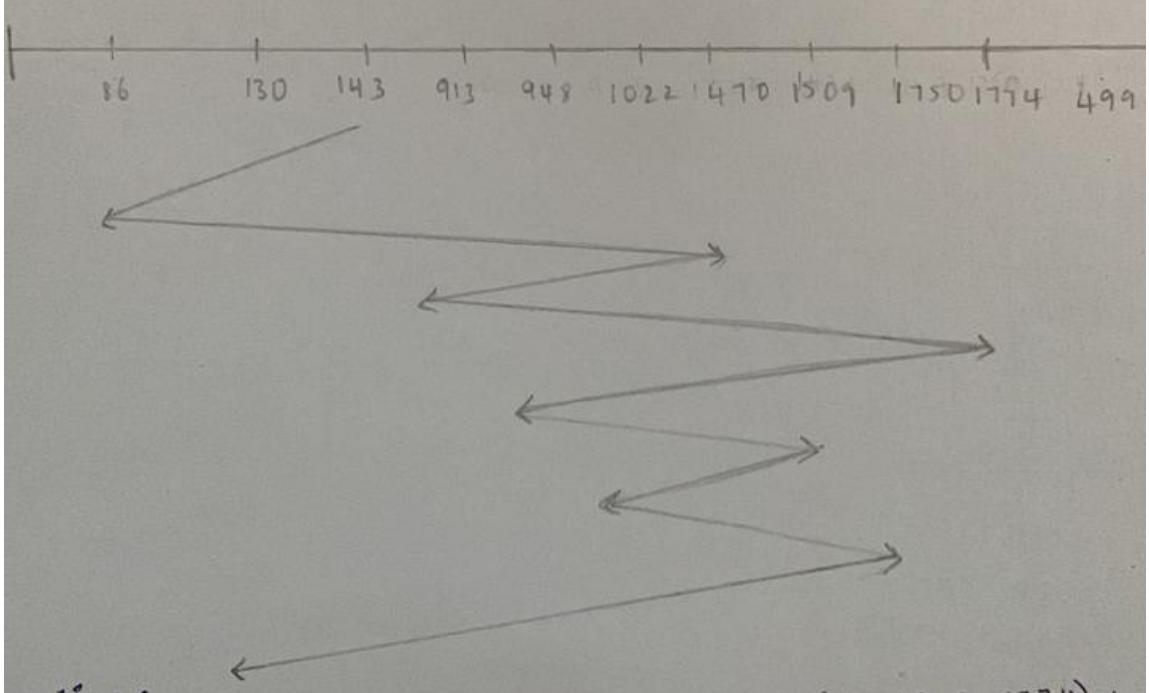
1. Suppose that a disk drive has 5,000 cylinders, numbered 0 to 4,999. The drive is currently serving a request at cylinder 143 and the previous request was at cylinder 125. The queue of pending requests in FIFO order is 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130 Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all pending requests for each of the following disk scheduling algorithms? Draw neat diagrams showing head movement.

i) FCFS

ii) SSTF

ii) SCAN

i) FCFS

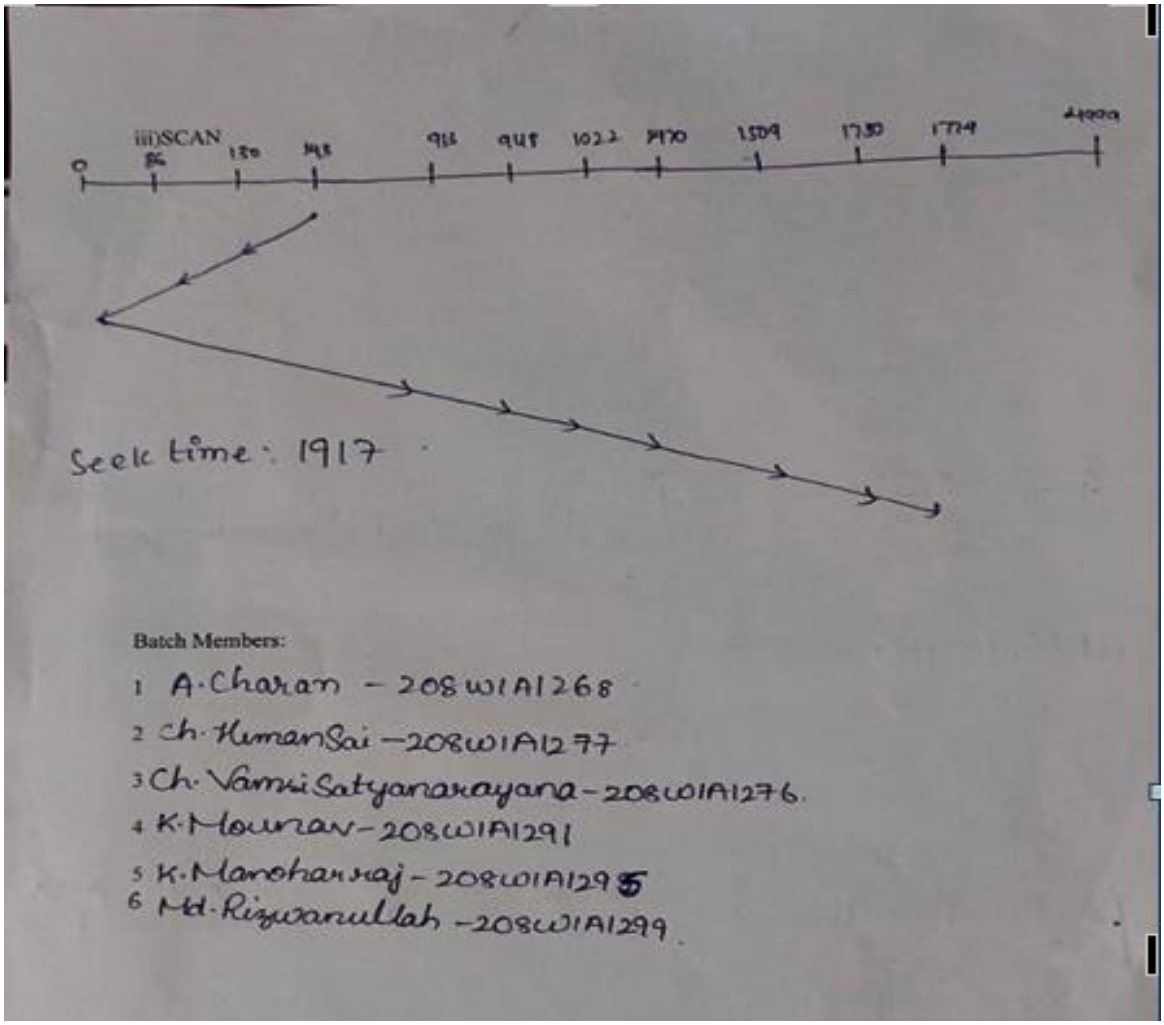


ek time

(143 - 86) + (1470 - 86) + (1470 - 913) + (1774 - 913) + (948 - 1774) +

(1509 - 948) + (1022 - 1509) + (1750 - 1022) + (1750 - 130)

7081



Students working in teams to find the solution for given task

Students demonstrating the solutions of the tasks given

Assessment of the effectiveness of the activity

Register No	Assessment before activity Assignment II marks	Assessment after activity Sessional II marks	Impact (Place a tick and state the % of impact)			
			Negative change	No change	Improvement	%
208W1A1201	6	8.3			✓	
208W1A1202	8.5	9.2			✓	
208W1A1203	3	7.1			✓	
208W1A1204	1.5	6.7			✓	
208W1A1205	9	10.0			✓	
208W1A1206	9.5	8.8				
208W1A1207	5	9.2			✓	
208W1A1208	7.5	9.2			✓	
208W1A1209	5	9.2			✓	
208W1A1210	7	9.2			✓	
208W1A1211	9.5	10.0			✓	
208W1A1212	6	7.5			✓	
208W1A1213	2.5	8.3			✓	
208W1A1214	8.5	8.3	✓			
208W1A1215	7.5	9.2			✓	
208W1A1216	10	9.2				
208W1A1217	10	8.8	✓			
208W1A1218	10	10.0		✓		
208W1A1219	9	9.2			✓	
208W1A1220	7.5	8.3			✓	
208W1A1221	6.5	9.2			✓	
208W1A1222	8	8.3			✓	
208W1A1223	8	8.3			✓	
208W1A1224	7.5	8.3			✓	
208W1A1225	10	10.0			✓	
208W1A1226	9	10.0			✓	
208W1A1227	9	8.3	✓			63%
208W1A1228	8.5	8.8			✓	

208W1A1229	8	9.2			✓	
208W1A1230	6	9.2			✓	
208W1A1231	8	7.9	✓			
208W1A1232	10	10.0		✓		
208W1A1233	8.5	9.2			✓	
208W1A1234	8.5	8.3	✓			
208W1A1235	8	9.2			✓	
208W1A1236	10	9.2	✓			
208W1A1237	10	9.2	✓			
208W1A1238	9	9.2			✓	
208W1A1239	6	8.8			✓	
208W1A1240	8.5	8.3	✓			
208W1A1241	9.5	9.2	✓			
208W1A1242	3	8.3			✓	
208W1A1243	9.5	9.2	✓			
208W1A1244	10	9.2	✓			
208W1A1245	10	9.2	✓			
208W1A1246	6.5	7.9			✓	
208W1A1247	9.5	9.2	✓			
208W1A1249	9.5	8.3	✓			
208W1A1250	9	8.3	✓			
208W1A1251	7	6.7	✓			
208W1A1252	5	8.8			✓	
208W1A1253	6.5	9.2			✓	
208W1A1254	8.5	8.3	✓			
208W1A1255	10	8.3	✓			
208W1A1256	10	8.8	✓			
208W1A1257	9	8.8	✓			
208W1A1258	7	7.1			✓	
208W1A1259	10	9.2	✓			
208W1A1260	7.5	8.3			✓	
208W1A1261	4	8.3			✓	
208W1A1262	8	8.3			✓	
208W1A1263	8.5	8.3	✓			

208W1A1264	9	8.3	✓			
208W1A1265	1.5	7.5			✓	
218W5A1201	9	9.2			✓	
218W5A1202	9	9.2			✓	
218W5A1203	6	9.2			✓	
218W5A1204	9.5	8.3	✓			
218W5A1205	7.5	9.2			✓	
218W5A1206	6	8.3			✓	
208W1A1266	10	8.8	✓			
208W1A1267	10	8.8	✓			
208W1A1268	10	10.0		✓		
208W1A1269	9.5	9.2	✓			
208W1A1270	9.5	9.6			✓	
208W1A1271	9.5	7.9	✓			
208W1A1272	8	9.2			✓	
208W1A1273	7.5	7.9			✓	
208W1A1274	9	7.9	✓			
208W1A1275	7	8.8			✓	
208W1A1276	8	8.8			✓	
208W1A1277	9.5	9.6			✓	
208W1A1278	10	9.2	✓			
208W1A1279	10	10.0		✓		
208W1A1280	8	7.5	✓			
208W1A1281	9	9.2			✓	
208W1A1282	8.5	9.2			✓	
208W1A1283	9	9.2			✓	
208W1A1284	6	8.3			✓	
208W1A1285	5	8.3			✓	
208W1A1286	6	9.6			✓	
208W1A1287	9	10.0			✓	
208W1A1288	9.5	9.2	✓			
208W1A1289	9.5	7.9	✓			
208W1A1290	8	8.8			✓	
208W1A1291	7.5	8.3			✓	

208W1A1292	5.5	7.5			✓	
208W1A1293	9.5	7.9	✓			
208W1A1294	9.5	10.0			✓	
208W1A1295	9.5	10.0			✓	
208W1A1296	9	10.0			✓	
208W1A1297	9.5	9.6			✓	
208W1A1298	9	8.8	✓			
208W1A1299	10	9.6	✓			
208W1A12A0	9	8.3	✓			
208W1A12A1	8.5	9.6			✓	
208W1A12A2	10	10.0		✓		
208W1A12A3	9.5	9.6			✓	
208W1A12A4	8.5	9.2			✓	
208W1A12A5	8	8.8			✓	
208W1A12A6	7.5	9.2			✓	
208W1A12A8	9.5	10.0			✓	
208W1A12A9	9	10.0			✓	
208W1A12B0	8	10.0			✓	
208W1A12B1	7.5	7.9			✓	
208W1A12B2	5	8.8			✓	
208W1A12B3	10	9.2	✓			
208W1A12B4	8	9.6			✓	
208W1A12B5	10	9.2	✓			
208W1A12B6	6	9.6			✓	
208W1A12B7	9	8.3	✓			
208W1A12B8	7.5	9.2			✓	
208W1A12B9	9	9.2			✓	
208W1A12C0	9.5	8.8	✓			
208W1A12C1	8.5	10.0			✓	
208W1A12C2	9	9.2			✓	
208W1A12C3	9	9.2			✓	
208W1A12C4	10	9.2	✓			
208W1A12C5	9.5	9.2	✓			
208W1A12C6	9.5	9.2	✓			

208W1A12C7	9	9.6			✓	
208W1A12C8	7.5	9.2			✓	
218W5A1207	5.5	8.3			✓	
218W5A1208	7.5	9.2			✓	
218W5A1209	9	9.2			✓	
218W5A1210	6.5	9.2			✓	
218W5A1211	7	7.5			✓	
218W5A1212	6	9.2			✓	

No of students involved in activity	No of students with Negative change	No of students without change	No of students with Improvement	Impact (%)
138	**46**	**5**	**87**	**63%**

Students Performance	No of Students	Percentage
Improvement	87	63%
No Change	5	3.6%
Negative Change	46	33.4%