

DEPARTMENT OF INFORMATION TECHNOLOGY::VRSEC

REPORT ON INNOVATIVE DELIVERY METHOD

20IT3304 – COMPUTER ORGANIZATION

A.Y. 2021-22

FLIPPED CLASS ROOM

Name of the Topic:Computer Arithmetic Algorithms

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

Date of activity conducted: 18-02-2022 (Section A) ,19-02-2022(Section B)

No. of students participated : 137

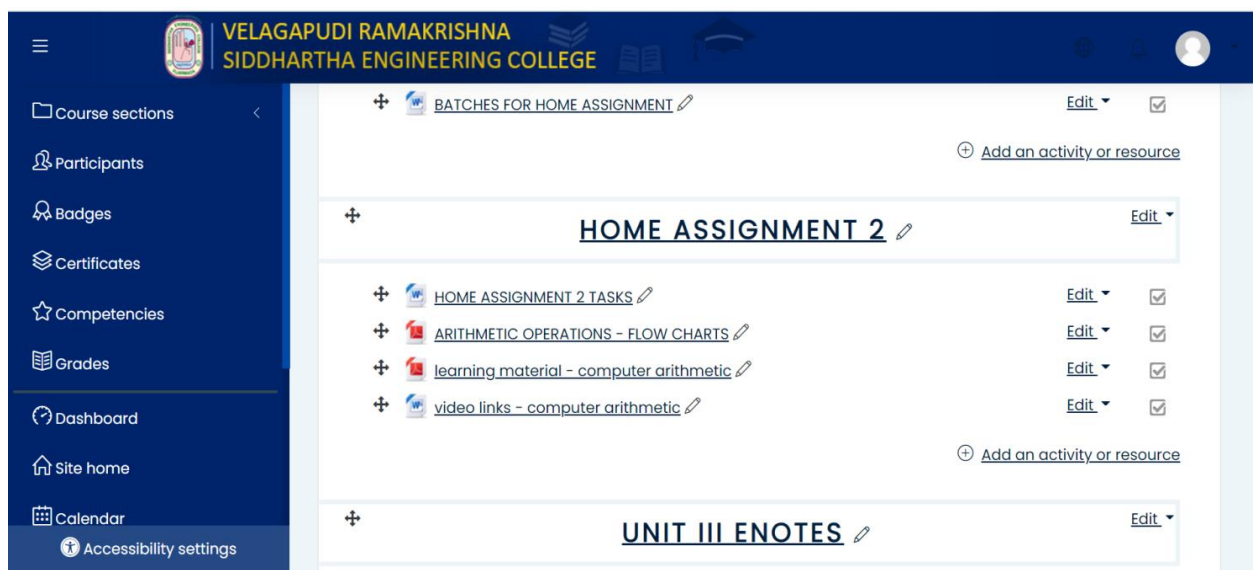
**Name of the Faculty :Dr.K.SitaKumari, Associate Professor
Dr.J.Ebenezer**

Objective of the activity:

- Task is mapped to course outcome 3 at K3(apply level) and this task can be used to improve the attainment of CO3.
- Understand the concepts of various Arithmetic operations.
- Identify the hardware required for implementing various arithmetic operations.
- Apply the algorithms for the given problem statement for performing operations on signed magnitude data and signed 2's complement data.

Resources provided to the students before conducting the activity:

- Learning Material
- PPT
- Video Lecture links



The screenshot displays the Moodle LMS interface for Velagapudi Ramakrishna Siddhartha Engineering College. The left sidebar contains navigation options: Course sections, Participants, Badges, Certificates, Competencies, Grades, Dashboard, Site home, and Calendar. The main content area shows a course section titled 'BATCHES FOR HOME ASSIGNMENT'. Below it, a section titled 'HOME ASSIGNMENT 2' contains a list of resources: 'HOME ASSIGNMENT 2 TASKS', 'ARITHMETIC OPERATIONS - FLOW CHARTS', 'learning material - computer arithmetic', and 'video links - computer arithmetic'. Each resource has an 'Add' icon, an 'Edit' dropdown, and a checkmark. At the bottom, there is a section titled 'UNIT III ENOTES'.

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 clarity 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 implementing computer arithmetic algorithms 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 computer arithmetic 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 hardware required for performing arithmetic operations.
- Apply various Arithmetic algorithms for the given problem statement
- Analyze the hardware required for performing algorithms for various types of data.
- Improve team work and communication skills.

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

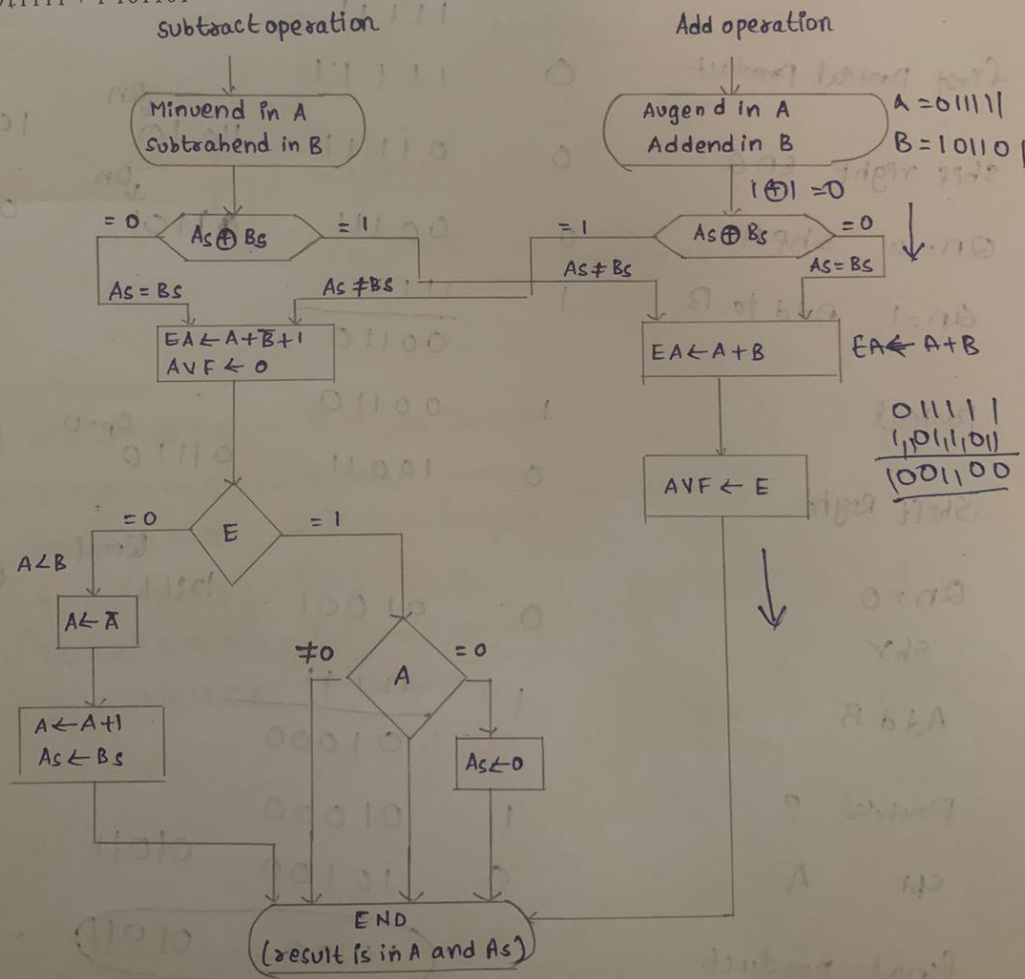
Snapshot of task done and the photos of the activity:

Student Learning activity

Topic : Computer Arithmetic

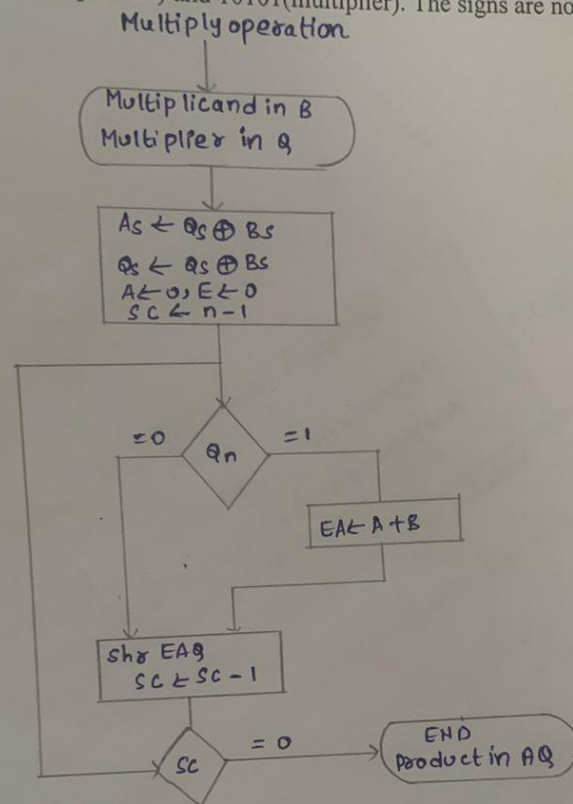
1. Draw the flowchart for addition algorithm when data is represented in signed 2's complement representation and mark each individual path in the flowchart by a number and then indicate the overall path that the algorithm takes when the following signed magnitude numbers are computed. In each case give the value of AVF. The left most bit in the following numbers represents the sign bit.

1 011111 + 1 101101



E	A	Q	SC
	00000		100
Multiplicand B = 11111	E	A	Q
Multiplier in Q.	0	00000	10101
Qn = 1, odd B		11111	SC
first partial product	0	11111	101
shift right EAQ	0	11111	
Qn = 0 shift A	0	01111	100
Qn = 1 Add to B	1	00111	011
partial	1	00111	
Shift Right	0	10011	010
Qn = 0 shr	0	01001	001
Add B	1	11111	
partial P	1	01000	
shr A	0	10100	000
final product		10100	01011 = 651

2. Show the contents of registers E, A, Q and SC during the process of multiplication of two binary numbers, 11111(multiplicand) and 10101(multiplier). The signs are not included.



Team Members:

1. 208W1A12A4 - P. Y. Sai Srinivas
2. 208W1A12B6 - P. Vaam kumar .
3. 208W1A12B4 - P. sajudheepak
4. 208W1A1283 - G. Sai Varun
5. 208W1A12A8 - M. Pawan kumar
6. 208W1A12C8 - P. Arjun
- 7.





Students working in teams to find the solution for given task

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	8	7	✓			63%
208W1A1202	8	8		✓		
208W1A1203	10	6	✓			
208W1A1204	7	3	✓			
208W1A1205	8.5	9			✓	
208W1A1206	9.5	8				
208W1A1207	8	8	✓			
208W1A1208	4.5	8			✓	
208W1A1209	9.5	8	✓			
208W1A1210	7	8		✓		
208W1A1211	9	9		✓		
208W1A1212	10	9	✓			
208W1A1213	5.5	9			✓	
208W1A1214	9	9		✓		
208W1A1215	6.5	8			✓	
208W1A1216	9.5	8	✓			
208W1A1217	5	9			✓	
208W1A1218	5	9			✓	
208W1A1219	7	9			✓	
208W1A1220	5	8			✓	
208W1A1221	10	9	✓			
208W1A1222	4.5	9			✓	
208W1A1223	7.5	8			✓	
208W1A1224	5	8			✓	
208W1A1225	0.5	9			✓	
208W1A1226	10	8	✓			
208W1A1227	8	9			✓	
208W1A1228	4.5	9			✓	
208W1A1229	8.5	10			✓	
208W1A1230	7	9			✓	

208W1A1231	9.5	9	✓		
208W1A1232	10	10		✓	
208W1A1233	5	6			✓
208W1A1234	9	8	✓		
208W1A1235	9.5	8	✓		
208W1A1236	10	9	✓		
208W1A1237	6	9			✓
208W1A1238	10	10		✓	
208W1A1239	4.5	10			✓
208W1A1240	8	9			✓
208W1A1241	9.5	8	✓		
208W1A1242	7.5	8			✓
208W1A1243	6	10			✓
208W1A1244	6.5	9			✓
208W1A1245	10	10		✓	
208W1A1246	8.5	9			✓
208W1A1247	9	9		✓	
208W1A1248	7	9			✓
208W1A1249	6	9			✓
208W1A1250	7.5	9			✓
208W1A1251	5.5	8			✓
208W1A1252	7.5	8			✓
208W1A1253	7.5	8			✓
208W1A1254	9	8	✓		
208W1A1255	7	9			✓
208W1A1256	5	9			✓
208W1A1257	9	7	✓		
208W1A1258	8	8		✓	
208W1A1259	9.5	8		✓	
208W1A1260	7	8			✓
208W1A1261	9	9		✓	
208W1A1262	9	9		✓	
208W1A1263	9	9		✓	
208W1A1264	6.5	8			✓

208W1A1265	3.5	8			✓
218W5A1201	8	9			✓
218W5A1202	10	8	✓		
218W5A1203	8	8		✓	
218W5A1204	9	6	✓		
218W5A1205	9	10			✓
218W5A1206	8	8		✓	
208W1A1266	9	8	✓		
208W1A1267	8	10			✓
208W1A1268	8	9			✓
208W1A1269	8	8		✓	
208W1A1270	10	9	✓		
208W1A1271	7	9			✓
208W1A1272	8.5	8	✓		
208W1A1273	9.5	8	✓		
208W1A1274	8	8		✓	
208W1A1275	4.5	7			✓
208W1A1276	9.5	8	✓		
208W1A1277	7	6	✓		
208W1A1278	9	9		✓	
208W1A1279	10	9	✓		
208W1A1280	5.5	8			✓
208W1A1281	9	9			✓
208W1A1282	6.5	7			✓
208W1A1283	9.5	8	✓		
208W1A1284	5	4	✓		
208W1A1285	5	3	✓		
208W1A1286	7	6	✓		
208W1A1287	5	8			✓
208W1A1288	10	10		✓	
208W1A1289	4.5	9			✓
208W1A1290	7.5	9			✓
208W1A1291	5	6			✓
208W1A1292	0.5	6			✓

208W1A1293	5	6			✓
208W1A1294	10	8	✓		
208W1A1295	4.5	8			✓
208W1A1296	8.5	9			✓
208W1A1297	7	8			✓
208W1A1298	9.5	9	✓		
208W1A1299	9	9		✓	
208W1A12A0	5	8			✓
208W1A12A1	7.5	9			✓
208W1A12A2	9.5	9	✓		
208W1A12A3	10	8	✓		
208W1A12A4	6	8			✓
208W1A12A5	10	9	✓		
208W1A12A6	4.5	7			✓
208W1A12A8	8	9			✓
208W1A12A9	9.5	9	✓		
208W1A12B0	7.5	9			✓
208W1A12B1	6	7			✓
208W1A12B2	6.5	8			✓
208W1A12B3	10	9	✓		
208W1A12B4	8.5	8	✓		
208W1A12B5	9.5	9	✓		
208W1A12B6	7	9			✓
208W1A12B7	6	7			✓
208W1A12B8	7.5	9			✓
208W1A12B9	5.5	8			✓
208W1A12C0	7.5	8			✓
208W1A12C1	7.5	8			✓
208W1A12C2	9	9			✓
208W1A12C3	7	9			✓
208W1A12C4	5	7			✓
208W1A12C5	9	8	✓		
208W1A12C6	9	8	✓		
208W1A12C7	9	8	✓		

208W1A12C8	7	8			✓	
218W5A1207	1.5	7			✓	
218W5A1208	6	7			✓	
218W5A1209	6	7			✓	
218W5A1210	4	6			✓	

Assessment of the effectiveness of the activity

No of students involved in activity	No of students with Negative change	No of students without change	No of students with Improvement	Impact (%)
137	38	21	78	57%

Students Performance	No of Students	Percentage
Improvement	78	57%
No Change	21	15%
Negative Change	38	27.7%

20IT3304 IMPACT ANALYSIS (2021-22)

