

IQRA NATIONAL UNIVERSITY

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DEP: BS(SE)

SUBJECT: BUSINESS PROCESSING ENGENEERING

SUBMITTED TO: MAAM ASMAA

SEMESTER: 5TH

**Question No: 01**

1. Define General Process Chart and how it characterizes the process?

Answer:

A **flowchart** is a picture of the separate steps of a **process** in sequential order. It is a generic tool that can be adapted for a wide variety of purposes, and can be used to describe various **processes**, such as a manufacturing **process**, an administrative or service **process**, or a project plan.

**CHARACTERIZED THE PROCESS BY:**

* The number of activities per category
* The amount of time spent in each activity category
* The percentage of the total processing time spent on each category.

1. List disadvantages of Process Activity Chart.

**ANSWER:**

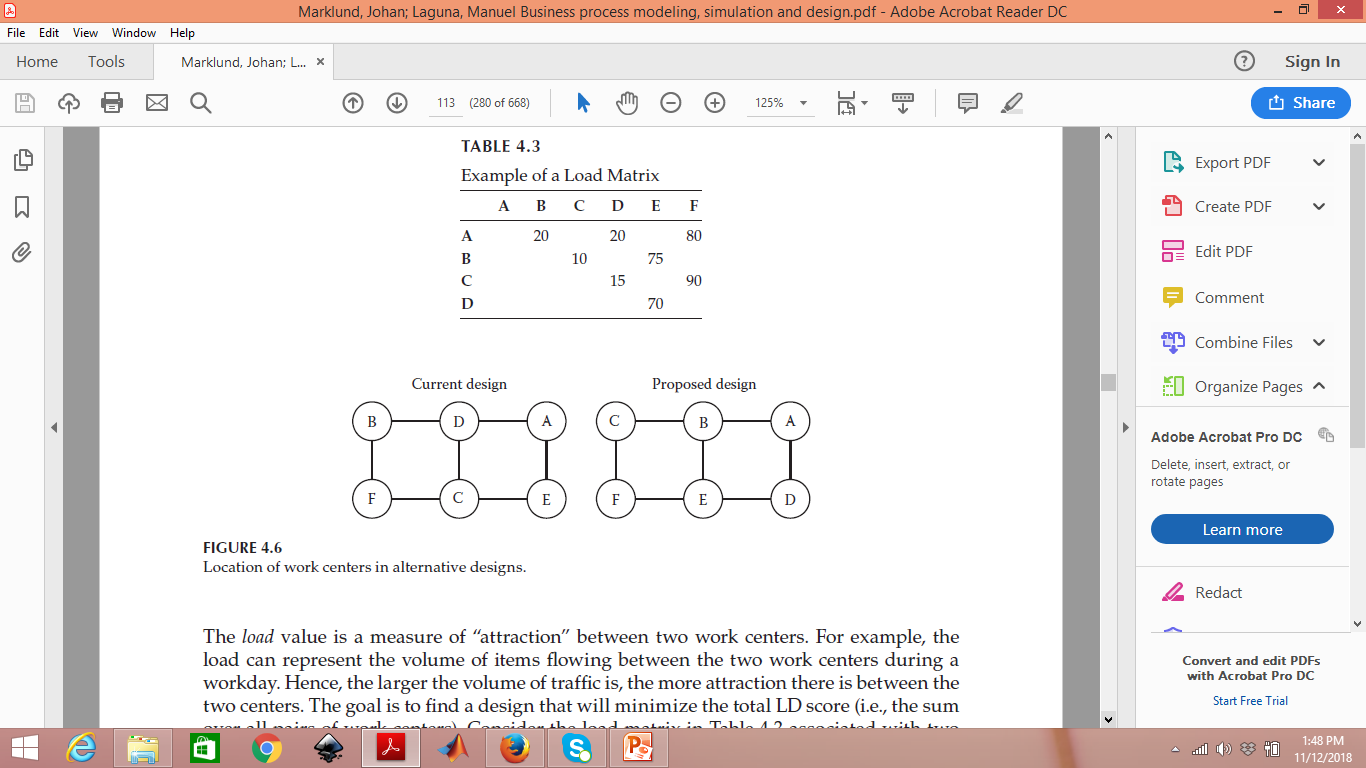
1. Only considers average activity times

2. If the process includes several variants with different paths (i.e.multiple paths through the process) each variant needs its own

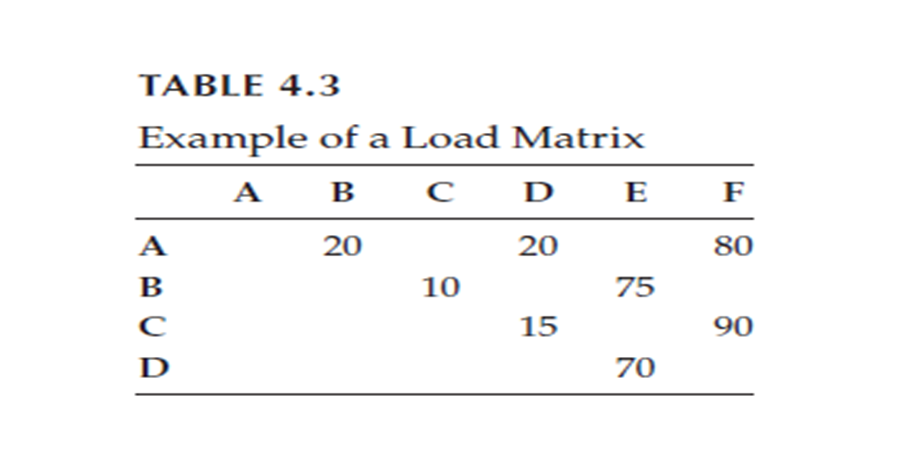
activity chart.

3) Cannotdepict parallel activities.

c) Compute Load Distance (LD) scores for the below given current and proposed designs and identify which design is the better one;



**Figure 1 Two Designs**

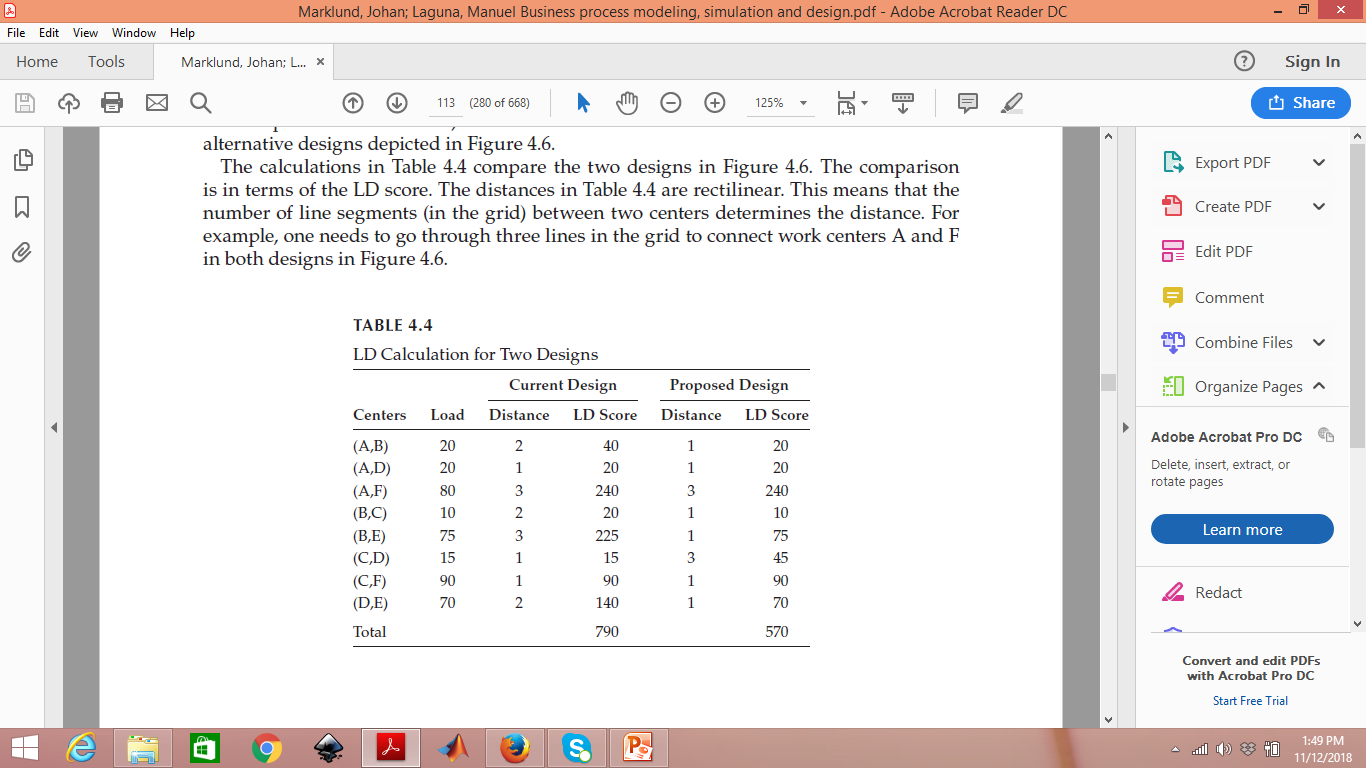


**Figure 2 Load Matrix**

**Answer:**

The LD score between work centers *i* and *j* is found as follows:

* + LDscore(i, j)=Load(i, j) × Distance (i, j)



**Question No: 02**

1. The observation periods for 3, 6, 5, and 2 jobs are 10, 20, 20, and 10 min, respectively. In other words, the WIP was 3 jobs for 10 min, 6 jobs for 20 min, 5 jobs for 20 min, and 2 jobs for 10 min. Then, calculate the average WIP?

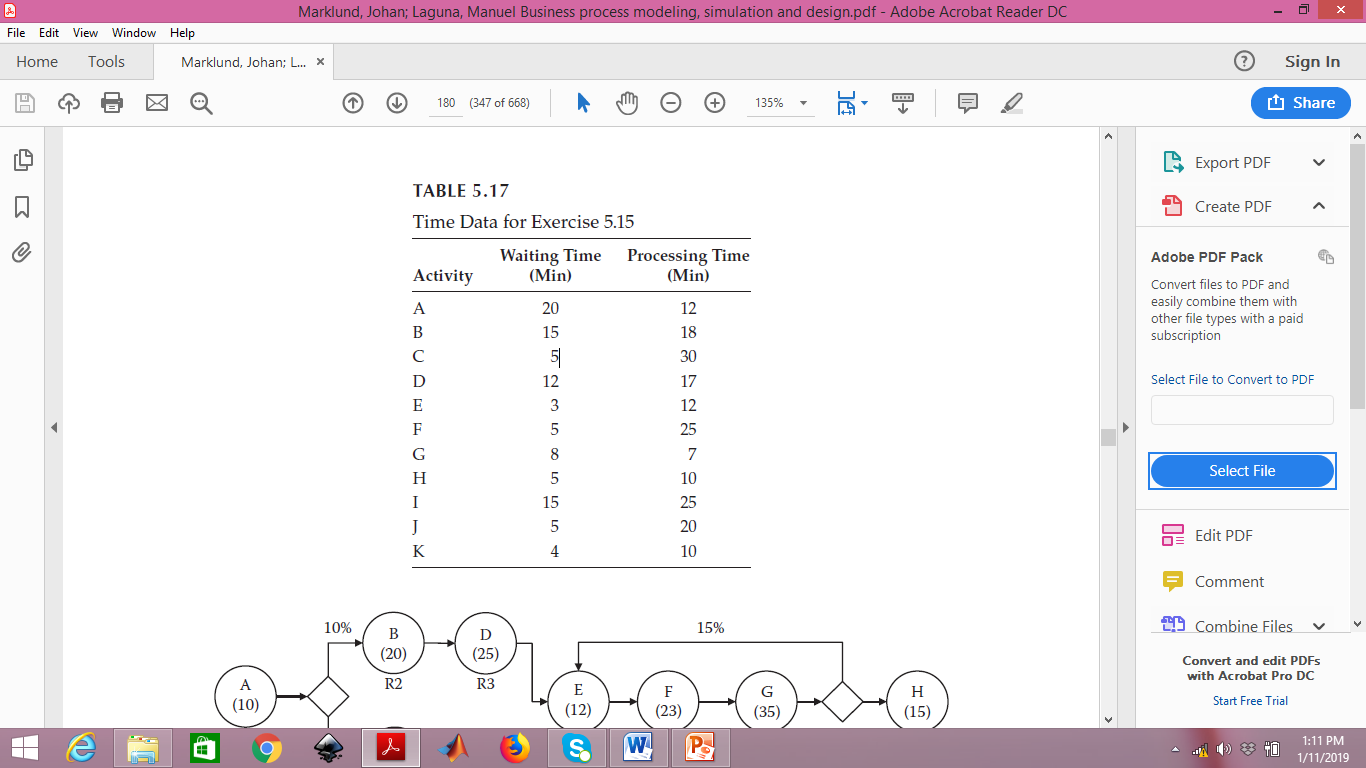
ANSWER:

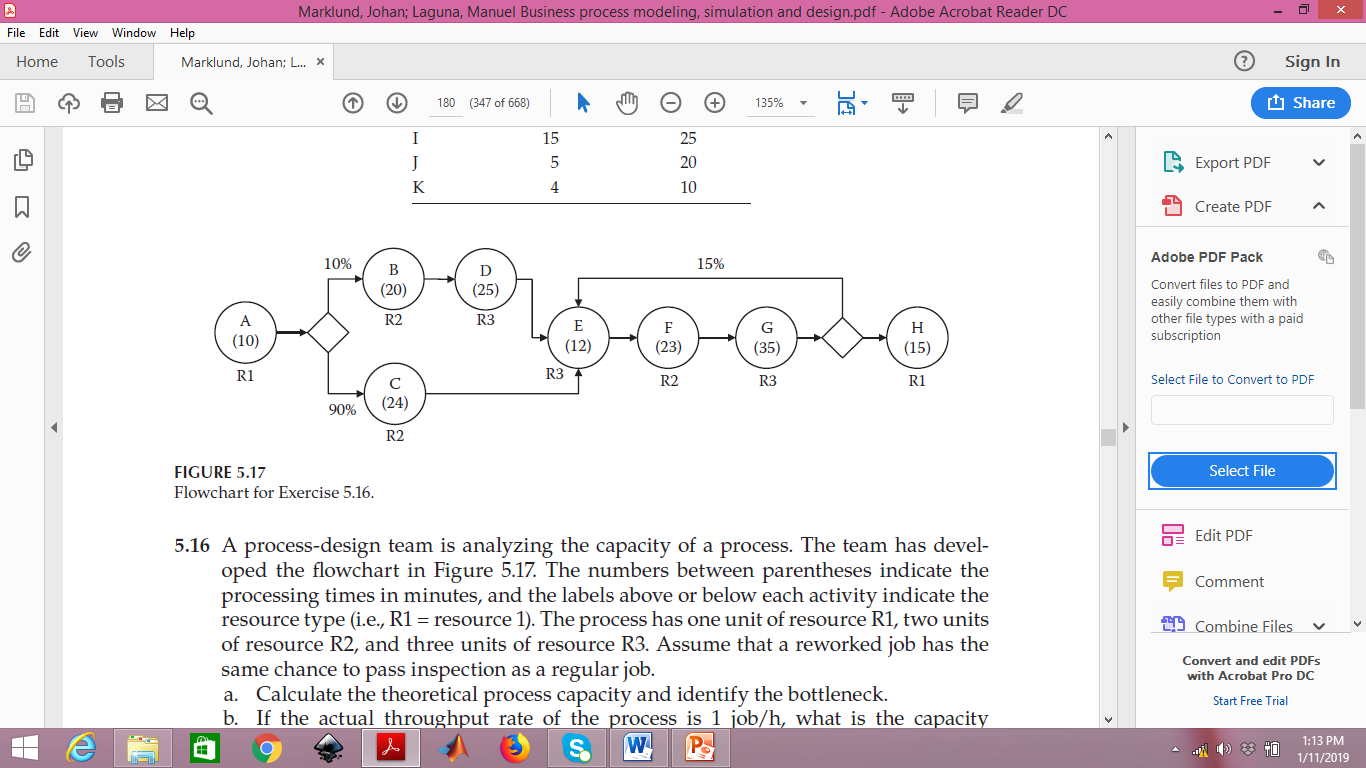
The average WIP is calculated as follows:

Average WIP = 3×10 +6 ×20 +5 ×20 +2 ×10\10+20+20+10 =

4.5 jobs

1. A process management team has studied a process and has developed the flowchart in Figure 3. The team also has determined that the expected waiting and processing times (in minutes) corresponding to each activity in the process are as shown in Table 1.
2. Calculate the average CT for this process.
3. Calculate the CT efficiency.





ANSWER:

* **Average CT:**10+10x20+90x24+25+15x(12+23+35)+15= **34.60**

1. Calculate the CT efficiency.

* **CT efficiency = Process Time / CT**

Process time =12+10x18+90x30+17+1.15x (12+25+7) +10 =29.69

**CT efficiency = 34.60/29.69 = 1.17**

**Question No: 03** (10)

Analyse capacity needs and utilization with the help of below given data and fill the given table using respective formulas;

ANSWER:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Resource | Unit Load(Min) | Unit Capacity Jobs/min | Available Resources | Pool Capacity Jobs/min |
| R1 | 2+5\*0.3+2=5.5 | 1/5.5 | 2 | 2/5.5=0.36 |
| R2 | 8+1.1\*(3+4)=15.7 | 1/15.7 | 2 | 2/15.7=0.13 |
| R3 | 4+2=6 | 1/6 | 1 | 1/6=0.17 |

**Question No 04:**  List the steps for TOC Methodology.

ANSWER:

TOC METHODOLOGY:

1. Identify the system’s constraints
2. Determine how to exploit the constraints

Choose decision/ranking rules for processing jobs in bottleneck

1. Subordinate everything to the decisions in step 2
2. Elevate the constraints to improve performance

For example, increasing bottleneck capacity through investments in

new equipment or labor

1. If the current constraints are eliminated return to step 1

Don’t loose inertia, continuous improvement is necessary!

THE END