

LEADS, LAGS AND FLOATS

Introduction

When it comes to project activity management, activity sequencing is one of the main tasks. Among many other parameters, float is one of the key concepts used in project scheduling.

Float can be used to facilitate the freedom for a particular task. Let's have a look at the float in detail.

Float

When it comes to each activity in the project, there are four parameters for each related to the timelines. Those are defined as:

- **Earliest start time ES** - The earliest time, an activity can start once the previous dependent activities are over.
- **Earliest finish time EF** - This would be $ES + \text{activity duration}$.
- **Latest finish time LF** - The latest time an activity can finish without delaying the project.
- **Latest start time LS** - This would be $LF - \text{activity duration}$.

The float time for an activity is the time between the earliest ES and the latest LS start time or between the earliest EF and latest LF finish times. During the float time, an activity can be delayed without delaying the project finish date. In an illustration, this is how it looks:



Leads and Lags

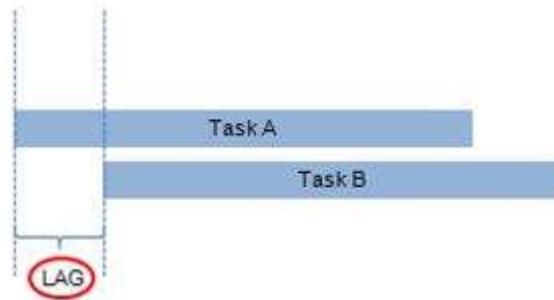
Leads and Lags are types of float. Let's take an example to understand this.

In project management, there are four types of dependencies:

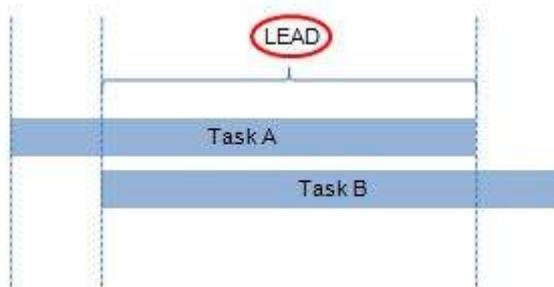
- **Finish to Start FS** - Later task does not start until the previous task is finished
- **Finish to Finish FF** - Later task does not finish until the previous task is finished
- **Start to Start SS** - Later task does not start until the previous task starts
- **Start to Finish SF** - Later task does not finish before previous task starts

Take the scenario of building two identical walls of the same house using the same material. Let's say, building the first wall is task A and building the second one is task B. The engineer wants to delay task B for two days. This is due to the fact that the material used for both A and B are a new type, so the engineer wants to learn from A and then apply if there is anything to B. Therefore, the two tasks A and B have a SS relationship.

The time between the start dates of the two tasks can be defined as a lag *2daysinthiscase*.



If the relationship between task A and B was Finish to Start FS , then the 'lead' can be illustrated as:



Task B started prior to Task A with a 'lead.'

Conclusion

For a project manager, the concepts of float, lead and lag make a lot of meaning and sense. These aspects of tasks are important in order to calculate project timeline variations and eventually the project completion time.

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