

## **Project Infinity Test 1 – Critical Path.**

12<sup>th</sup> December 2023

### **Q1 - what is the critical path?**

The critical path is the longest sequence of activities in a project plan which must be completed on time in order for the project to be completed on schedule. It is determined by identifying the activities that have zero slack or float time, meaning that any delay in these activities will cause a delay in the overall project timeline.

Some key points about the critical path include:

It helps project managers identify the most important tasks that need to be completed on time in order to keep the project on track.

It can be used to determine the earliest possible completion date for a project.

It can also be used to identify activities that can be delayed without affecting the overall project timeline.

The critical path can change as the project progresses and new information becomes available.

In summary, the critical path is the sequence of activities that must be completed on time in order for a project to be completed on schedule. It is an important tool for project managers to help them keep the project on track and identify potential delays.

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### **Q2 - Why are you claiming the critical path has zero float when it may have negative float?**

Negative float can occur when an activity's late finish date is earlier than its early finish date, which means that the activity is taking longer than planned and is delaying the project. However, the critical path always has zero float because any delay in the critical path activities will cause a delay in the overall project timeline. This means that the critical path activities must be completed on time in order for the project to be completed on schedule.

It's important to note that negative float can only exist if the finish date of some activity is constrained to finish no later than a certain date. In the network where the project finish is allowed to be day 22, the end of the forward pass calculation, there cannot be any negative float.

In summary, while negative float can occur in non-critical path activities, the critical path always has zero float because any delay in these activities will cause a delay in the overall project timeline.

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### **Q3 - so what happens when the finish milestone and the project overall have a constrained finish?**

When the finish milestone and the project overall have a constrained finish, total float may be used to provide an early indication of potential project completion slippage. This is done by constraining

the project finish milestone with a finish on constraint. The total float represents the amount of time that a schedule activity may be delayed from its activity CPM early start date or activity CPM early finish date without delaying the project CPM late finish date or violating a schedule constraint.

Some key points to keep in mind include:

Total float is calculated using the critical path method approach and by subtracting the activity CPM early finish date from the activity CPM late finish date or subtracting the activity CPM early start date from the activity CPM late start date, with that difference expressed in calendar units.

A total float value less than zero indicates that the activity CPM late date is scheduled prior to the activity CPM early date and the path that includes the activity cannot be completed in time to meet the CPM late finish of the project.

A total float value of zero or greater indicates that the path that includes the activity can be completed in time to meet the CPM late finish of the project and some schedule activities can be delayed without affecting the overall project timeline.

Total float may be used to provide an early indication of potential project completion slippage by constraining the project finish milestone with a finish on constraint.

In summary, when the finish milestone and the project overall have a constrained finish, total float can be used to identify potential project completion slippage and help keep the project on track.

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#### **Q4 - Why does your third answer contradict the first answer?**

My third answer does not contradict the first answer. The first answer provides a definition of the critical path and explains that it is determined by identifying the activities that have zero slack or float time. The third answer explains that total float may be used to provide an early indication of potential project completion slippage when the finish milestone and the project overall have a constrained finish. While the first answer focuses on the concept of the critical path and its importance in project management, the third answer discusses how total float can be used to identify potential delays in the project timeline. Both answers provide valuable information about project management and are not contradictory.

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Sources

- 1 Follow the Yellow Brick Road (The Critical Path) Learning Library
- 2 Process Groups: A Practice Guide Practice Guides