

**1.THE STEPS INVOLVED IN CREATING A CPM NETWORK.**

**2. FLOAT AND THE TYPE OF FLOATS IN YOUR OWN LANGUAGE.**

A Technical Report Submitted in partial fulfilment of the requirements for the Continuous Internal Evaluation II for the subject of

**Introduction to industrial management (Humanities III) (HSMC - 501)**

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# **1. Discuss the steps involved in creating a CPM network. Elaborate with justification.**

- Creating a Critical Path Method (CPM) network involves several structured steps. The CPM is a project management technique used to determine the longest path of planned activities to the end of the project and to identify the minimum time needed to complete it. Here's an elaboration on the steps involved in creating a CPM network:

## **1. Define the Project and Activities:**

- **Description:** Start by defining the project scope and breaking it down into specific tasks or activities. This involves identifying all tasks necessary to complete the project.
- **Justification:** Clearly defined activities ensure that nothing is overlooked and help in accurate scheduling. It also aids in assigning responsibilities and resources.

## **2. Sequence the Activities:**

- **Description:** Determine the logical order of the tasks by identifying dependencies between them. This step involves understanding which tasks need to be completed before others can start.
- **Justification:** Proper sequencing helps in understanding the workflow and prevents delays due to task dependencies. It ensures that the project progresses smoothly from start to finish.

## **3. Create a Network Diagram:**

- **Description:** Develop a network diagram that visually represents the sequence of activities and their dependencies. This is typically done using nodes (representing activities) and arrows (representing dependencies).
- **Justification:** A visual representation makes it easier to understand the flow of tasks and their interdependencies. It provides a clear view of the project's structure and helps in identifying potential bottlenecks.

## **4. Estimate Activity Durations:**

- **Description:** Estimate the time required to complete each activity based on historical data, expert judgment, or other estimation techniques.
- **Justification:** Accurate duration estimates are crucial for realistic scheduling and timely project completion. They help in resource planning and budgeting.

## **5. Determine the Critical Path:**

- **Description:** Identify the longest path through the network diagram, which determines the shortest time in which the project can be completed. The critical path is the sequence of activities that directly impacts the project completion time.
- **Justification:** Knowing the critical path helps in focusing on activities that directly affect project duration. It allows for better time management and prioritization of resources.

## **6. Update the Network Diagram:**

- **Description:** As the project progresses, update the network diagram to reflect any changes in activity durations, sequences, or dependencies. Adjust the critical path if necessary.
- **Justification:** Regular updates ensure that the project schedule remains accurate and relevant. It

helps in identifying and addressing delays or changes in real-time.

#### **7. Analyze and Monitor the Project:**

- **Description:** Continuously monitor the progress of the project against the CPM network. Analyze any deviations from the plan and adjust as needed.
- **Justification:** Ongoing analysis and monitoring help in keeping the project on track and ensuring that any issues are promptly addressed. It aids in making informed decisions to mitigate risks and delays.

By following these steps, project managers can effectively plan, schedule, and control their projects, leading to successful and timely project completion.

## **2. What do you mean by float, determine the types of float in your language.**

- In Industrial Management, a "float" refers to the amount of time that a task or activity can be delayed without affecting the overall project schedule or production timeline. It is a measure of the flexibility or slack in a system.

### **Types of float in Industrial Management:**

#### **1. Free Float:**

- The amount of time a task can be delayed without affecting the early start date of its successor tasks.

#### **2. Total Float:**

- The total amount of time a task can be delayed without affecting the project completion date.

#### **3. Interfering Float:**

- The amount of time a task can be delayed before it starts to interfere with the start of its successor tasks.

#### **4. Independent Float:**

- The amount of time a task can be delayed without affecting any other tasks in the project.

#### **5. Negative Float:**

- A situation where a task has less time available than required, indicating a delay in the project schedule.