* Network Crashing:-

- It is a Projet mgmt. technique used to shorten the project durat." by reducing the time of one or more critical activities.
- It can be done by adding extra resources (such as labor, machinery or money) to speed up the execut" of specific tasks.
- The main goal of n/w crashing is to achieve the shortest project complet" time with the least possible cost.

* When to use Network Crashing:-

- It is used when:-
- the project is behind schedule.
- There is a high demand to meet a projet deadline.
- when client is willing to pay extra for faster delivery.
- if any late completion penalties ~~prese~~ applicable then n'w crashing can be used.

* N/w Crashing Procedure:-
Steps to perform n/w crashing are:

① **Identify Critical Path:**
- we tools like CPM to identify the seq. of tasks to determine the shortest projet durat"

② **List Crashable Activities:-**
- identify activities that can be completed faster by allocating additional resources.
- Only consider activities on the Critical Path.

③ Calculate Crash cost per unit time :-
- Determine extra cost required to reduce the duration of each activity by one unit of time (usually days)

$$\text{Crash cost per day} = \frac{\text{Crash Cost} - \text{Normal Cost}}{\text{Normal Time} - \text{Crash Time}}$$

④ Select Activities to Crash :-
- Prioritize activities with the lowest crash cost per unit time.
- Crash the selected activity for the max. possible duration without changing the critical path.

⑤ Update NTw diagram :-
- Recalculate the project duration & identify the new critical path.

⑥ Repeat if necessary :-
- Continue crashing until the desired project duration is achieved or further crashing is no possible.

⑦ Cost-Benefit Analysis :-
- check whether additional cost required is justified by the benefit of reduced project time.

* Advantages & Disadvantages :-

Advantages	Disadvantages
- Helps to meet tight deadlines	- Higher project cost.
- it increases customer satisfaction	- may cause resource over-loading.
- Minimizes delay penalties.	- Quality Risk due to rushing

- So, network crashing is useful technique in project management when time is more critical than cost. But it should be used carefully by balancing the cost, risk & quality of the project.