

COMPUTER APPLICATION

LAB 11

CIVIL ENGINEERING

SUB:CODE-408

MICROSOFT PROJECTS

INTRODUCTION

Microsoft project is the computer software used for planning project. Involving a number of jobs/tasks easily allocations for different tasks can be done by knowing the quantities of labour and materials required for each job. The selected job can be as flow diagram keeping the different tasks in location. So that we will get an idea about the whole project by a glance to the diagram.

Aim

Create a work sheet on the ms project window for a building work and find the critical path of the project.

Definition of critical path:

Critical path is a series of continuous tasks of a project, In which the delaying of any one of the task of the path beyond its estimated duration will delay the completion time of the project.

Procedure

1. The computer is started and the ms project working sheet window is opened.
2. The project is defined by entering the information about the project which includes the start data, name, location ect.. of the project.
3. The general working hours of the project are then selected as 'Standard' (day time).
4. The working week days are than selected as Monday to Saturday. (6 days per week)
5. The working hours on each day is selected from 8.00 am to 12.30 pm & 1.30 pm to 5.00pm (total eight hours per day)
6. Hours per day, Days per week and days per month are then entered in the respective spaces on the window.
7. List of tasks to be done, duration of task and start time of each task are typed in the respective cells.

By clicking on the see project critical task of the 'Report' drop down menu. The critical path is observed.

Result:

The critical path of given project

Microsoft project

Introduction

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Create a work sheet on sheet on the ms project window for a building work and find the critical path of the project.

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PROCEDURE

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Result

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STRUCTURAL ANALYSIS AND

DESIGN PROGRAM

Introduction

Staad program is the computer software used to analysis and design various structural members in civil engineering application according to the stander code of practice. The usually used structures are slab, beam, column, footing ect.. The time of analysis with STAAD is reduced to a larg extend in order of only a few minutes which would have been up to several days if manual analysis was performed . the accuracy of such analysis is very much higher than that of the manual work as well.

The data including lodes material properties span support conditions etc are to be given to the computer as and when required. During the analysis the design of various members is performed and the detail and drawing to design can be printed out by using a printer.

Aim:

Design the structural properties of a from consisting of two parallel main beams of 8 m span spaced by two parallel cross beam of 3m span and four columns of 3 m height .after analysis the frame using STADD. Assume the size of long beam as 250x650 mm, which of sheet beam as 250x300 mm and that of column as 250x400 mm super imposed load on the beam is 20 KN/M

PROCEDURE:

1. The computer is started and the staad program working window is opened.
2. In the 'project tasks' groups configuration is opened and the base units is selected as metric and the global axis orientation is selected as 'y' up and click the accept button . In the license configuration tick Indian 'standard codes'. Again in the project task group new project is opened and the details like file name, space, unit ect.. and selected and next is clicked to display the structure grid to appear.
3. After clicking the edit in the beam box construction line dimension are typed as x=8 and y=3, representing the length of long beam and height of column respectively. Ok is click and frame is drawn by mouser curser .Again edit is clicked and Z coordinate is typed as 3 representing. The spacing between the frames or length of cross beam and ok is clicked and frame is drawn by using the mouser curser as before. The secondary beams are also drawn after checking the snap to existing node tool box.
4. In the property page the size of main beam, short beams and columns and columns are defined and added .The corresponding size of the members are than assigned to the members by clicking

on the corresponding members with their sizes duly selected with the cursor and close the property page.

5. In the support page created the support as 'fixed' and assigned to all the support.
6. From the command menu, material constant like density = 25 KN/m^3 , elasticity = $2 \times 10^4 \text{ N/mm}^2$ and poisons ratio = 0.17 are given and added.
7. In the lode page , lode case details are added and assigned for live load and dead load respectively by clicking on the drawn beam with the load selected by cursor.
8. From the command menu loading/load list, the loads transfer to the right window from left.
9. Click the analysis /print menu, select no print and added.
10. The design concrete menu is opened and defined the parameters clean = 25 mm, $F_c + 20 \text{ N/mm}^2$, $F_y = 415 \text{ N/mm}^2$ and track 1 and assigned to all the members using mouse cursor.
11. Again frame the design concrete menu .click the comm. And tab and added the 'design beam' and design column and assigned to the respective members.
12. Now using the 'run analysis' menu is performed and the result of analysis is obtained.

Result

The design details are tabulate and drawings are printed out as shown.