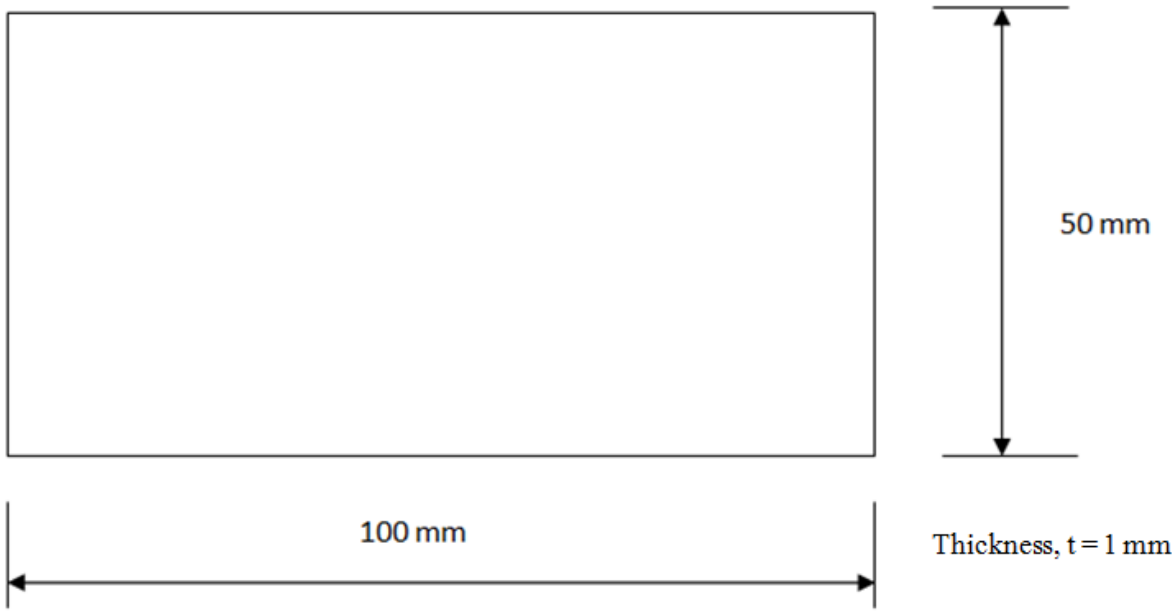
TRANSIENT RESPONSE ANALYSIS OF A SIMPLY SUPPORTED RECTANGULAR PLATE



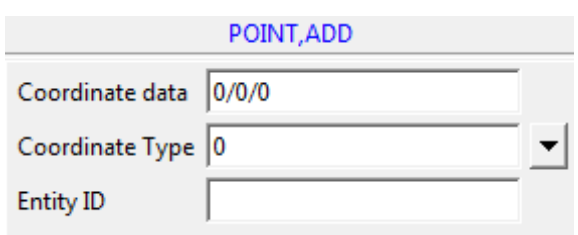
PROCEDURE

1. **Create Keypoints**

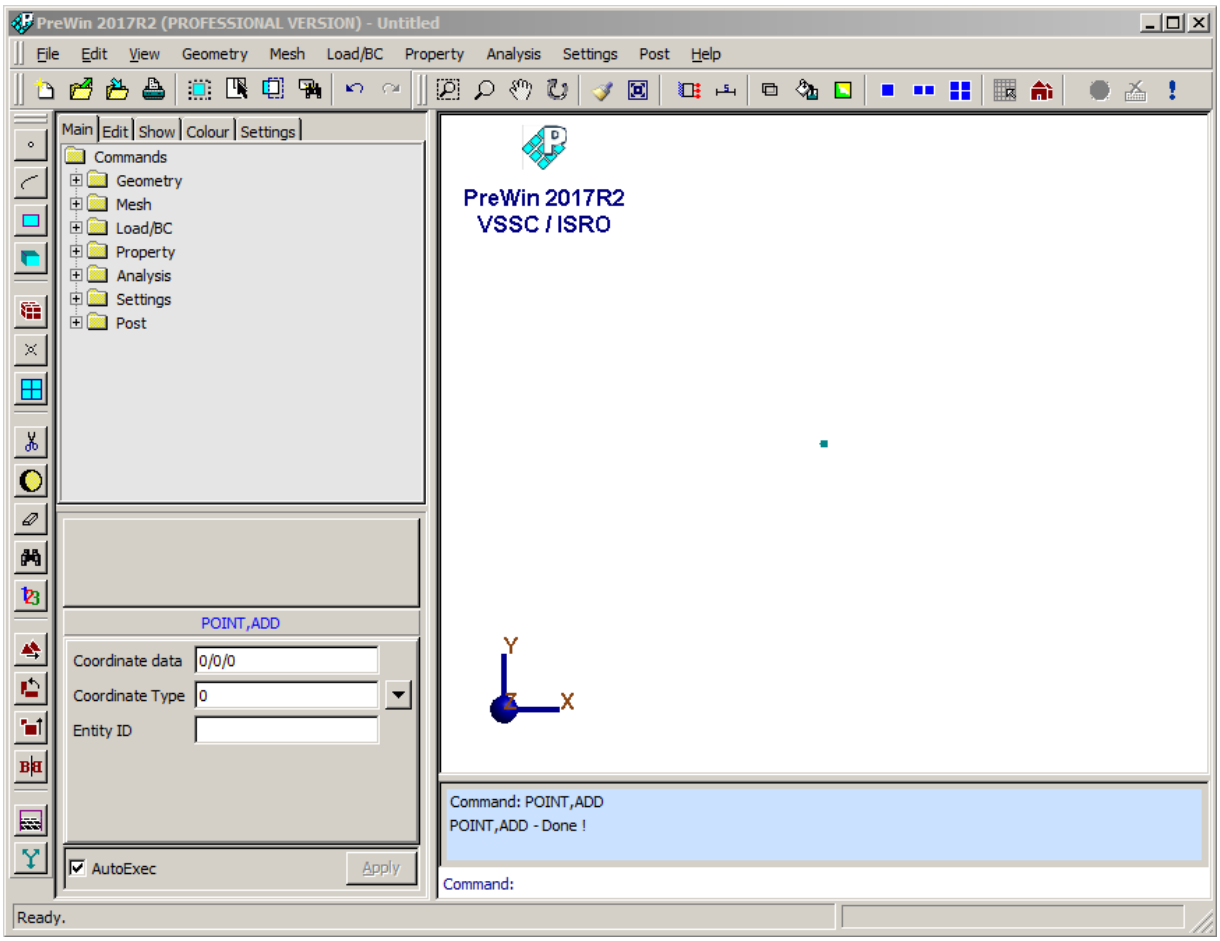
Command : POINT,ADD

Menu : Geometry → Keypoint → Create → By X/Y/Z

Parameters :



At the end of the operation your screen should look like this.



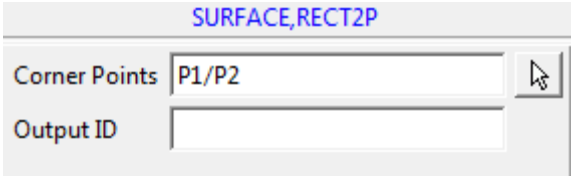
Similarly create key points at (100/50/0)

2. Create Surface

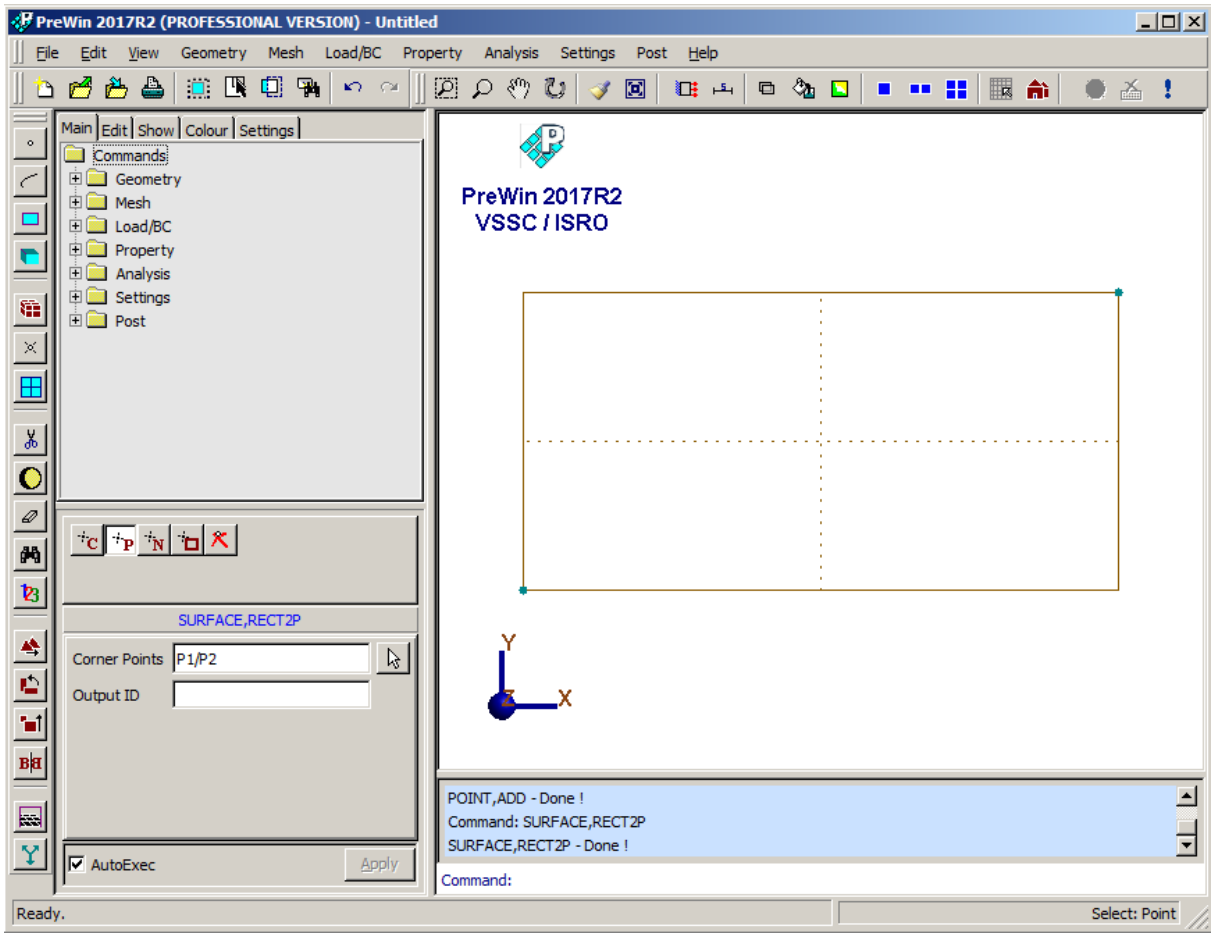
Command : SURFACE,RECT2P

Menu : Geometry → Surface → Create → Rect2P

Parameters :



At the end of the operation your screen should look like this.

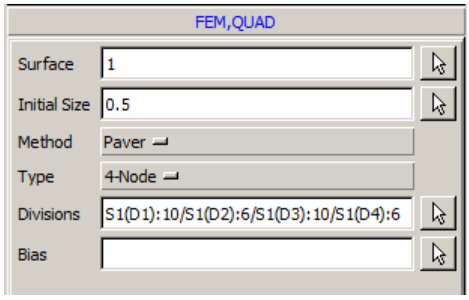


3. **Generate mesh**

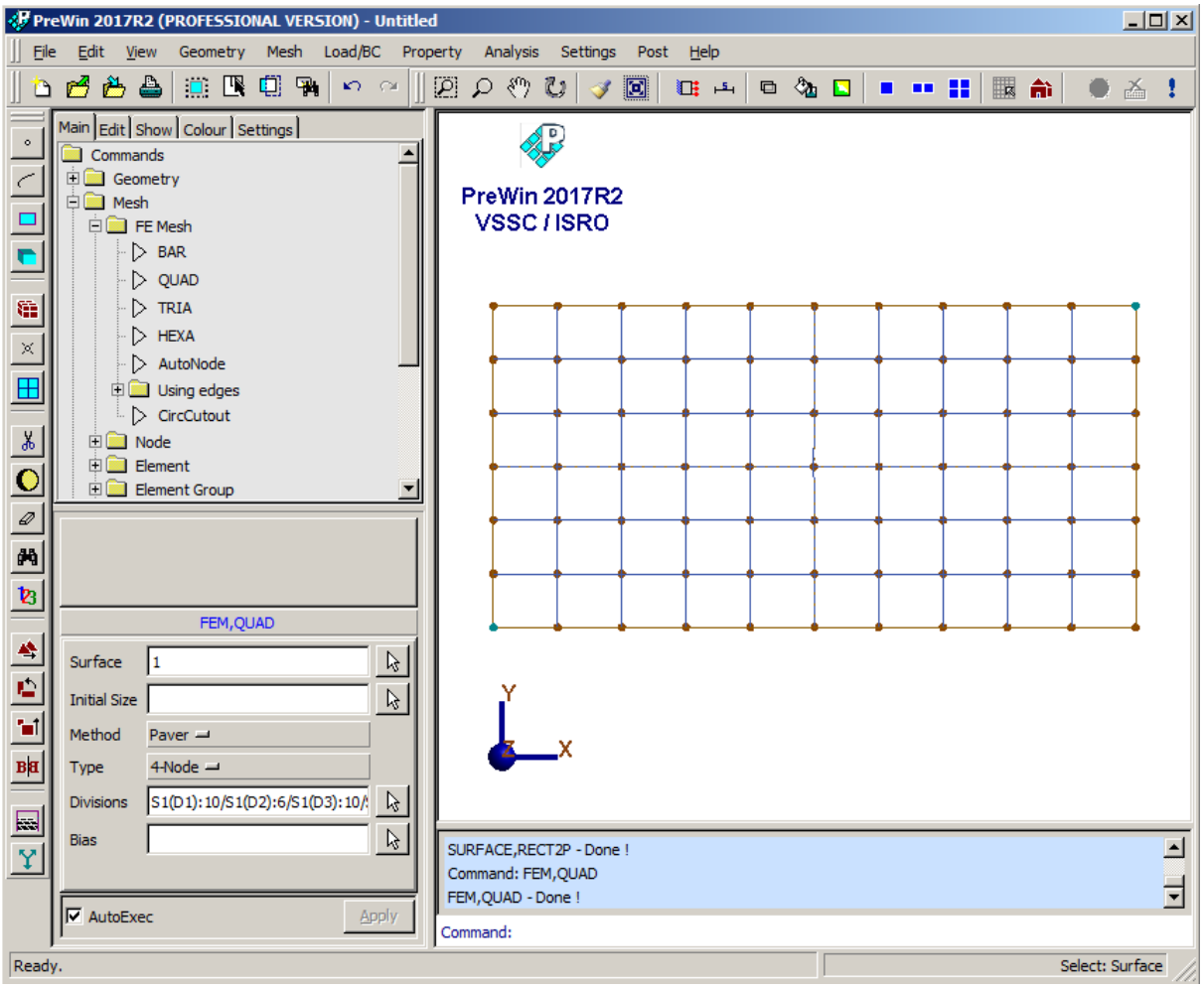
Command : FEM,QUAD

Menu : Mesh → FE Mesh → QUAD

Parameters :



At the end of the operation your screen should look like this.

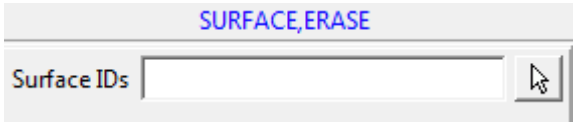


4. Erase Surface

Command : SURFACE,ERASE

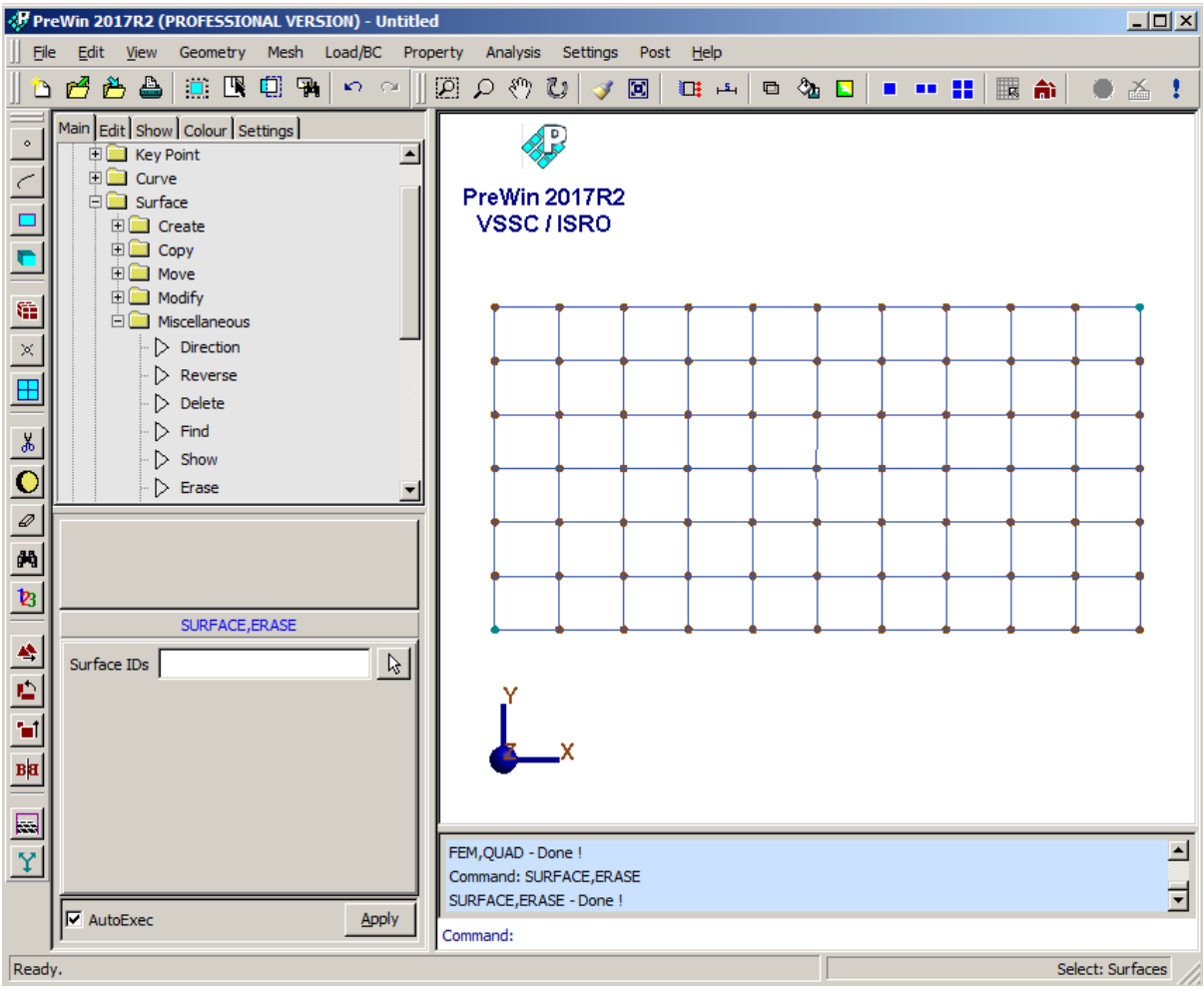
Menu : Geometry → Curve → Miscellaneous → Erase

Parameters :



Type in the surface ID or pick the surface after clicking the arrow in the surface ID box

At the end of the operation your screen should look like this.

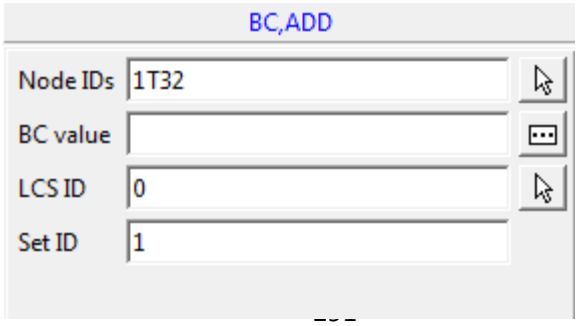


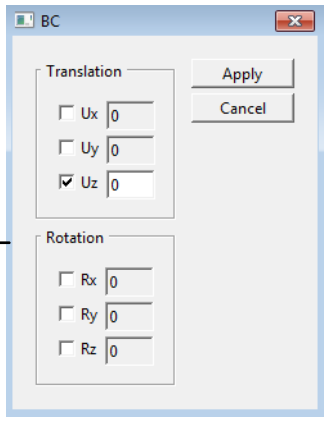
5. Apply Boundary Condition

Command : BC,ADD

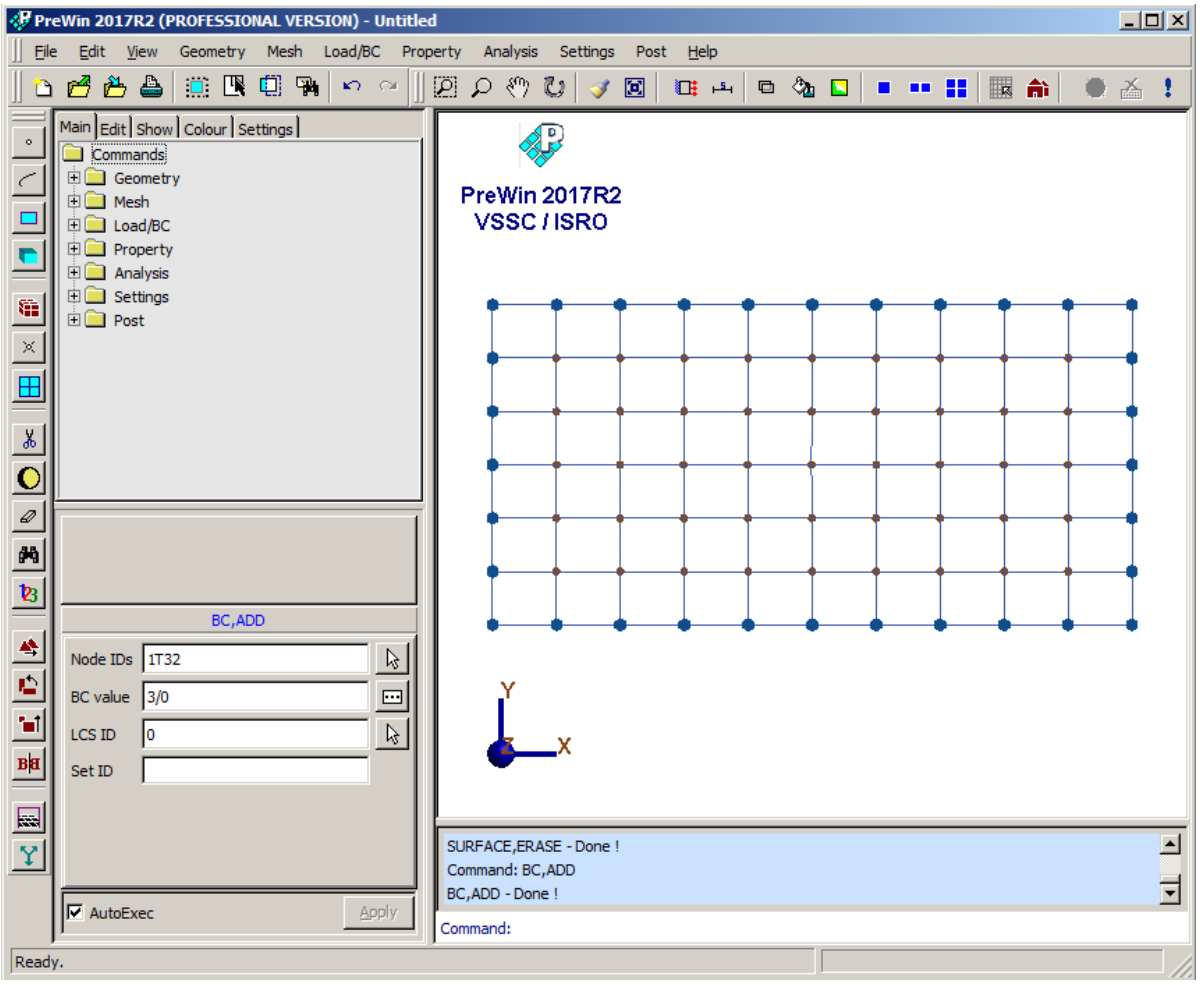
Menu : Load/BC → Displacement BC → Add

Parameters :





At the end of the operation your screen should look like this.

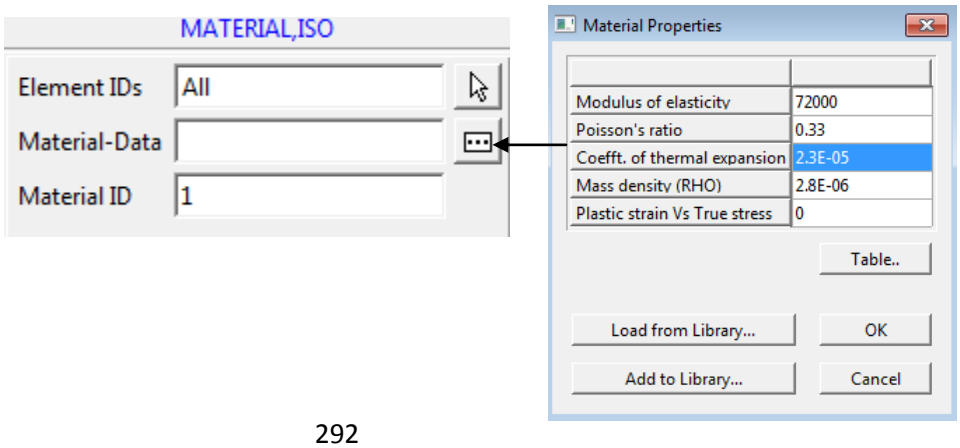


6. Apply Material Property

Command : MATERIAL,ISO

Menu : Property → Material → Isotropic → Add

Parameters :



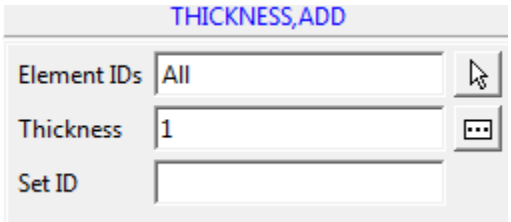
Material property can be load from library or can be typed in.

7. Apply Thickness

Command : THICKNESS,ADD

Menu : Property → Physical → Thickness → Add

Parameters :

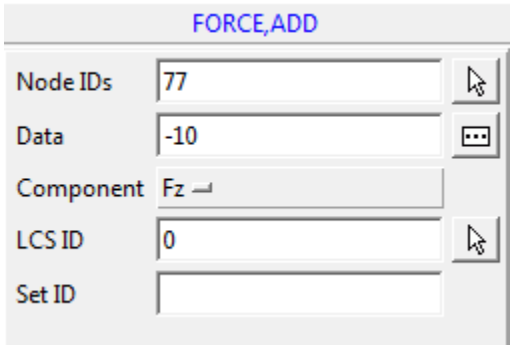


8. Specify Point Load

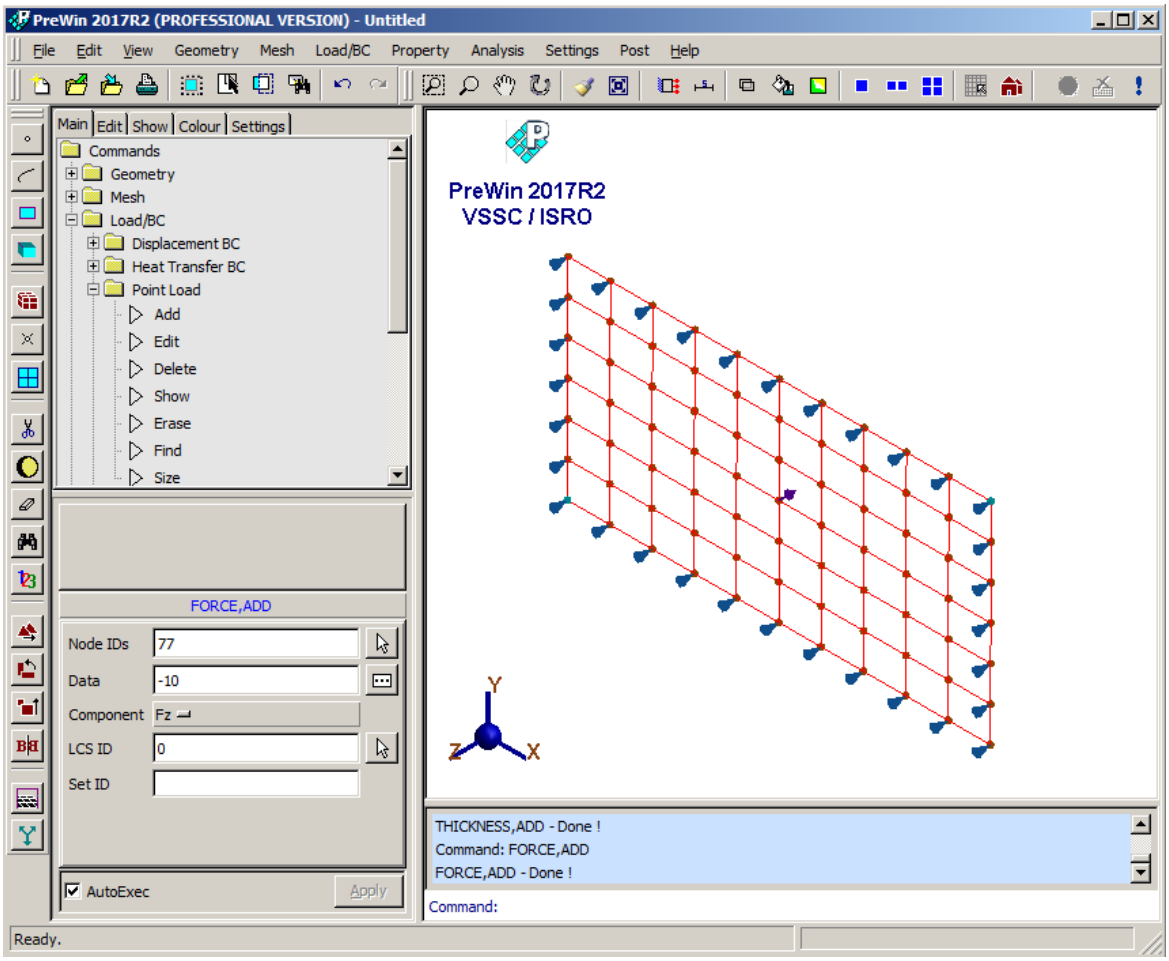
Command : FORCE,ADD

Menu : Load/BC → Point Load → Add

Parameters :



At the end of the operation your screen should look like this.

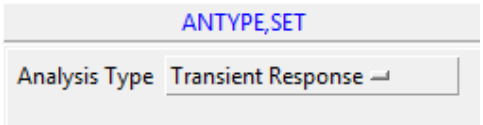


9. Set Analysis Type

Command : ANTYPE,SET

Menu : Analysis → Analysis Type

Parameters :

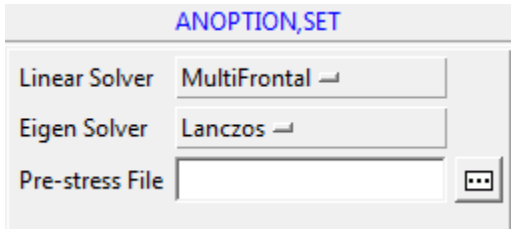


10. Set analysis Option

Command : ANOPTION,SET

Menu : Analysis → Analysis Option

Parameters :

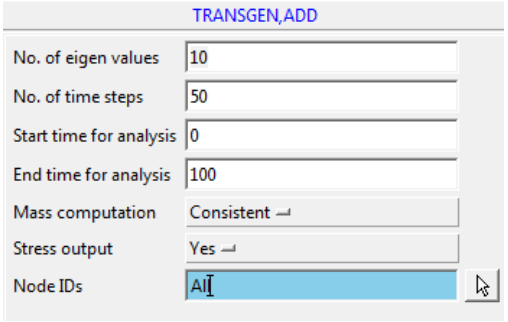


11. Specify Control Data for Transient analysis

Command : TRANSGEN,ADD

Menu : Analysis → Transient Response → General → Add

Parameters :

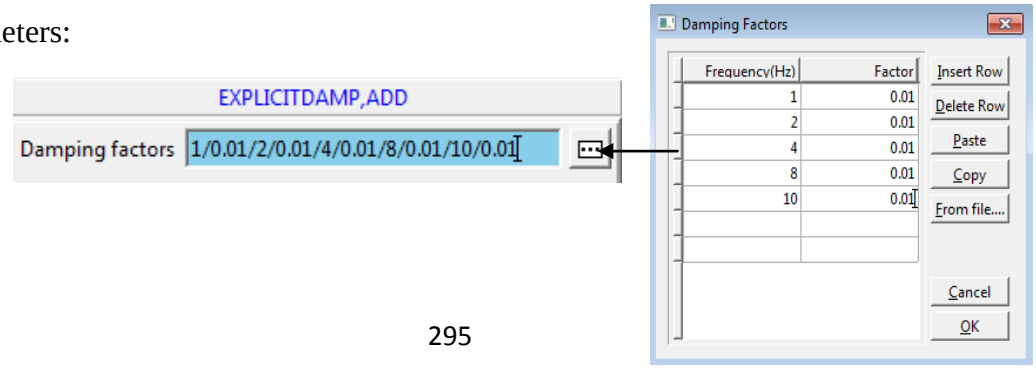


12. Specify Data for Explicit Damping

Command : EXPLICITDAMP,ADD

Menu : Analysis → Transient Response → Damping → Add

Parameters:



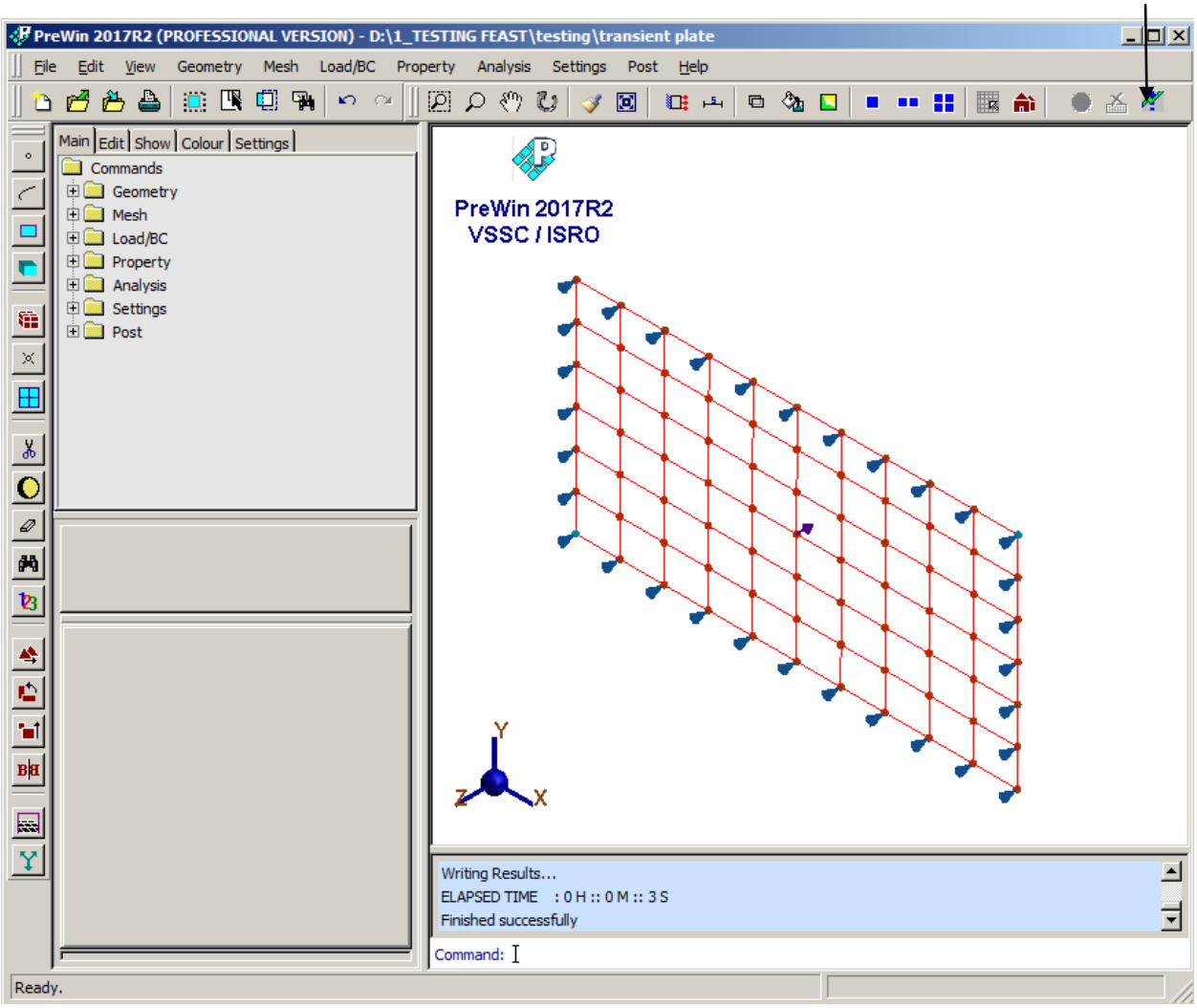
13. Save the project model

Menu : File → Save

14. Submit the job in to FEAST

Menu**: Analysis** → Run Solver

Click Here



15. Perform Post Processing

i) Graph plots for displacement/ veleocity/ acceleration

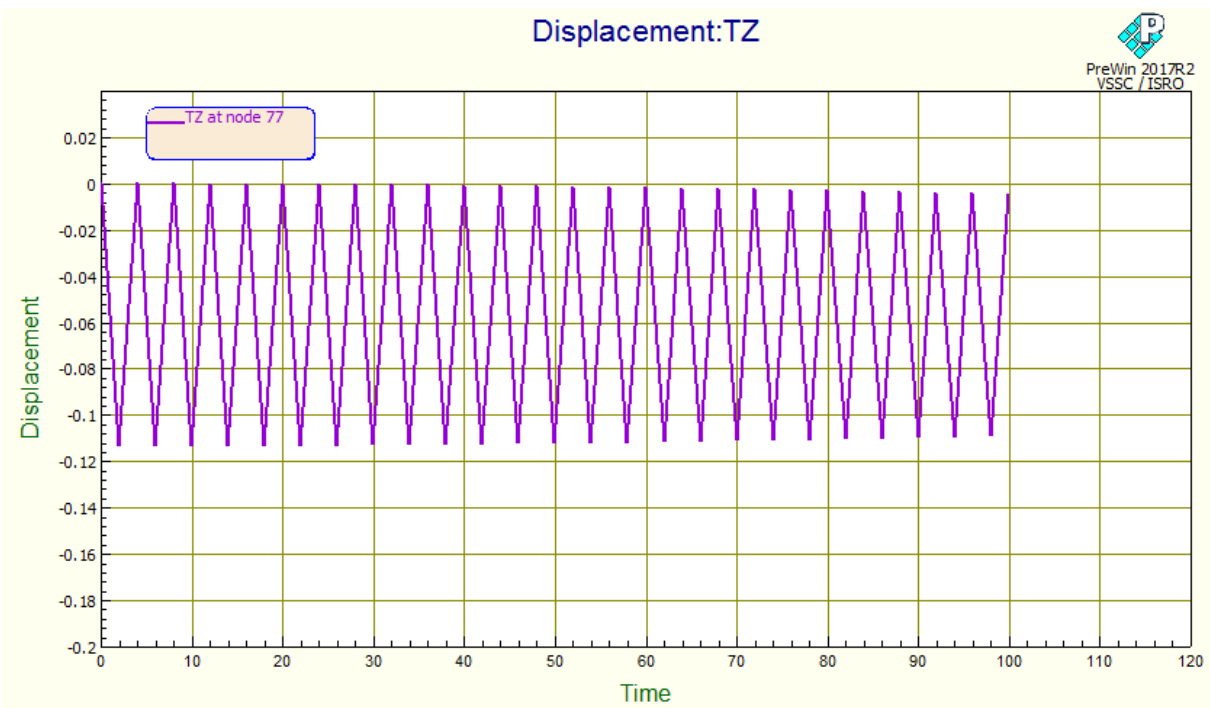
Command : POST,HISTORYPLOT

Menu : Post → History Plot

Parameters:

Item	Displacement
Component	TZ
Nodes	77

At the end of the operation your screen should look like this.

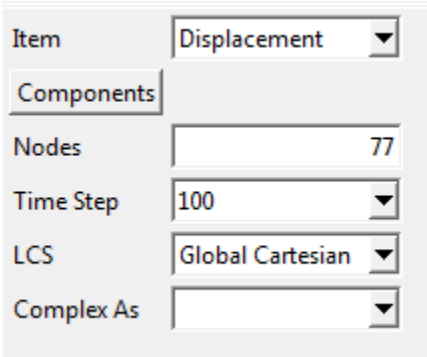


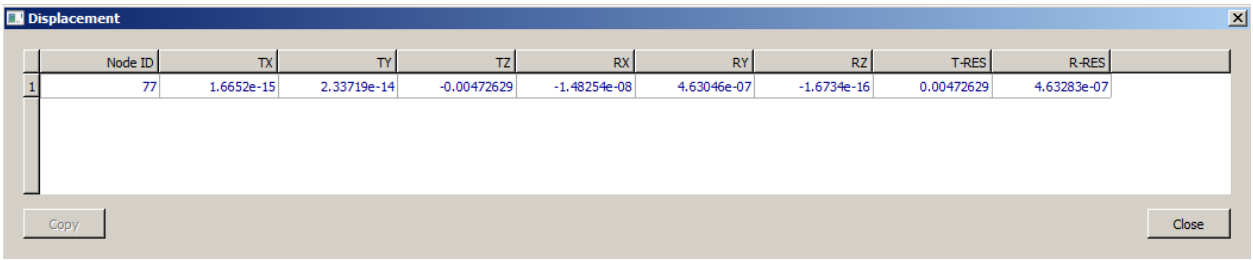
ii) Show resultant displacement/ velocity/ acceleration

Command : POST,VIEWRESULTS

Menu : Post → View Results

Parameters:





Displacement

	Node ID	TX	TY	TZ	RX	RY	RZ	T-RES	R-RES
1	77	1.6652e-15	2.33719e-14	-0.00472629	-1.48254e-08	4.63046e-07	-1.6734e-16	0.00472629	4.63283e-07

Copy Close

iii) Output file can be seen in *.OUT