

**The Owren 400 Mini:
A unique 1:3 scale electrically
powered tower yarder for
research, training and
demonstration.**

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Forestry in Norway.

Per year:

- Increment: 25 mill m³
- Harvesting: 10 mill m³
- With cable:
 - 1995: 500.000 m³
 - 2009: 50.000 m³
 - 2030: 1.000.000 m³?

This means that we need 2-3 new cable logging crew every year the coming 25 years!



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Owren 400 Mini tower yarder



Why Owren 400 Mini?

- > Research and development tool for testing new working methods and auxiliary equipment
- > Theoretical and practical training of new logging crews, students, etc.
- > To promote cable logging activity through demonstrations at exhibitions and field days.

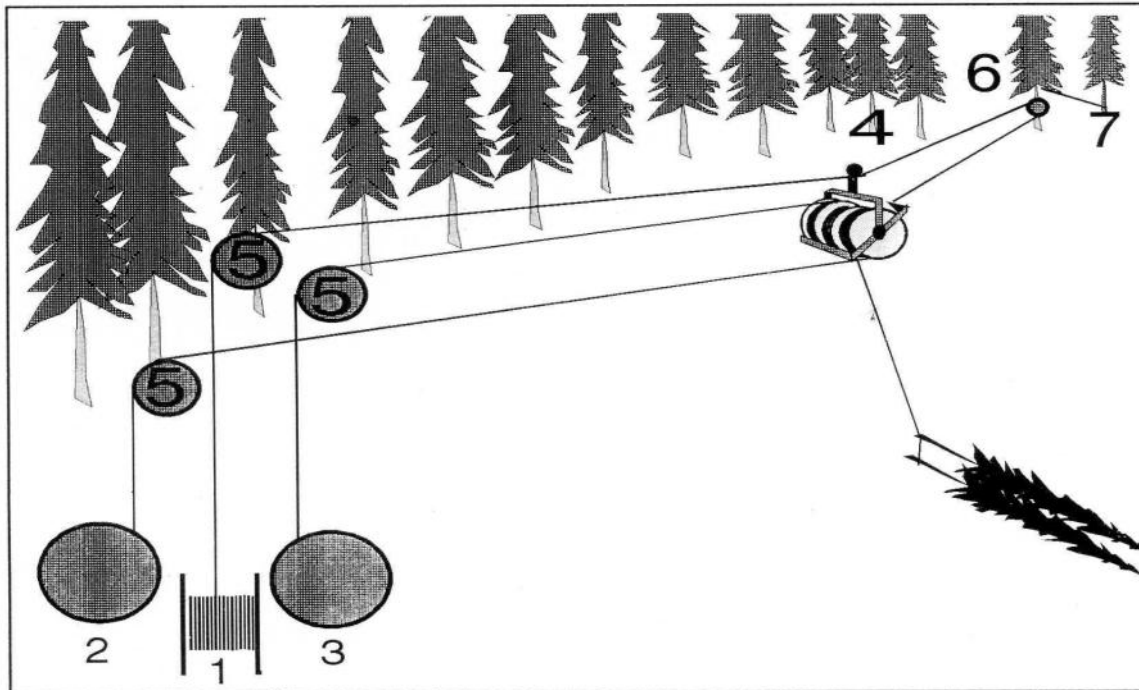


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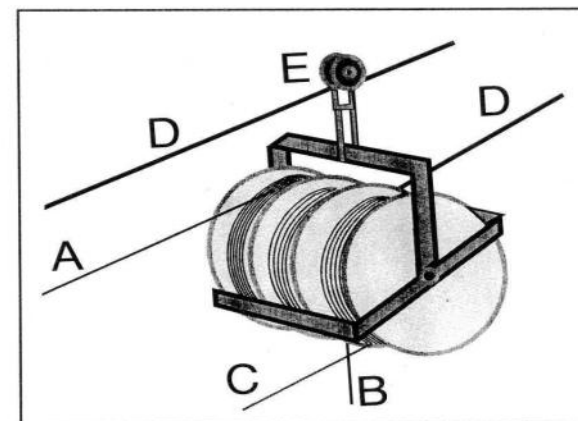
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Running skyline system.



1. Haulback drum
2. Slackpulling drum
3. Main drum
4. Carriage
 - A) Main line
 - B) Hoist line
 - C) Slackpulling line
 - D) Haulback line
 - E) Running block
5. Tower blocks
6. Tail block
7. Guy lines on tail tree



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Owren 400 Mini tower yarder

- Built 2009,
-Trygve Owren Ltd, Norway
- Scale 1:3
- Winches are electrically powered (15 kW)
- Running or standing skyline
- Speed 0,75 m/sek
- Drum capacity: 190 m/6 mm
- Loads: 50 kg/6% deflection,
running skyline



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Owren 400 Mini tower yarder

- Support for running skyline
- Support for standing skyline
- 3-drum carriage, installing hoist line
- Radio remote controll



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The main objective for this 3 days study work:

To assess how the Owren 400 mini works as a training tool



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**1 days at Owren 400 Mini, then
working with Owren 400.**

**The same rigging method for Owren
400 Mini as for the big tower yarders**



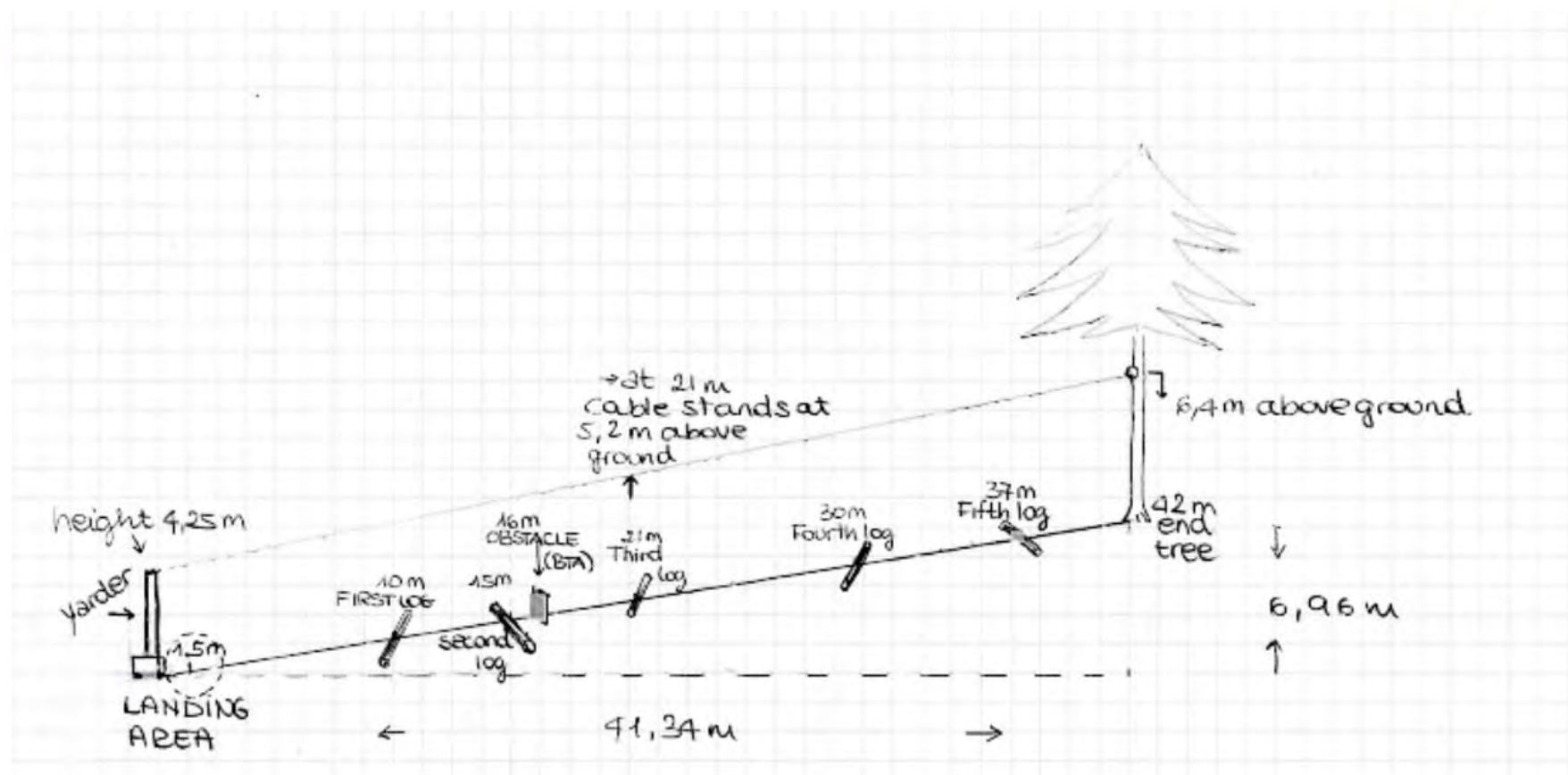
Layout of the training corridor

June 2011. 3 days training program



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Study team.



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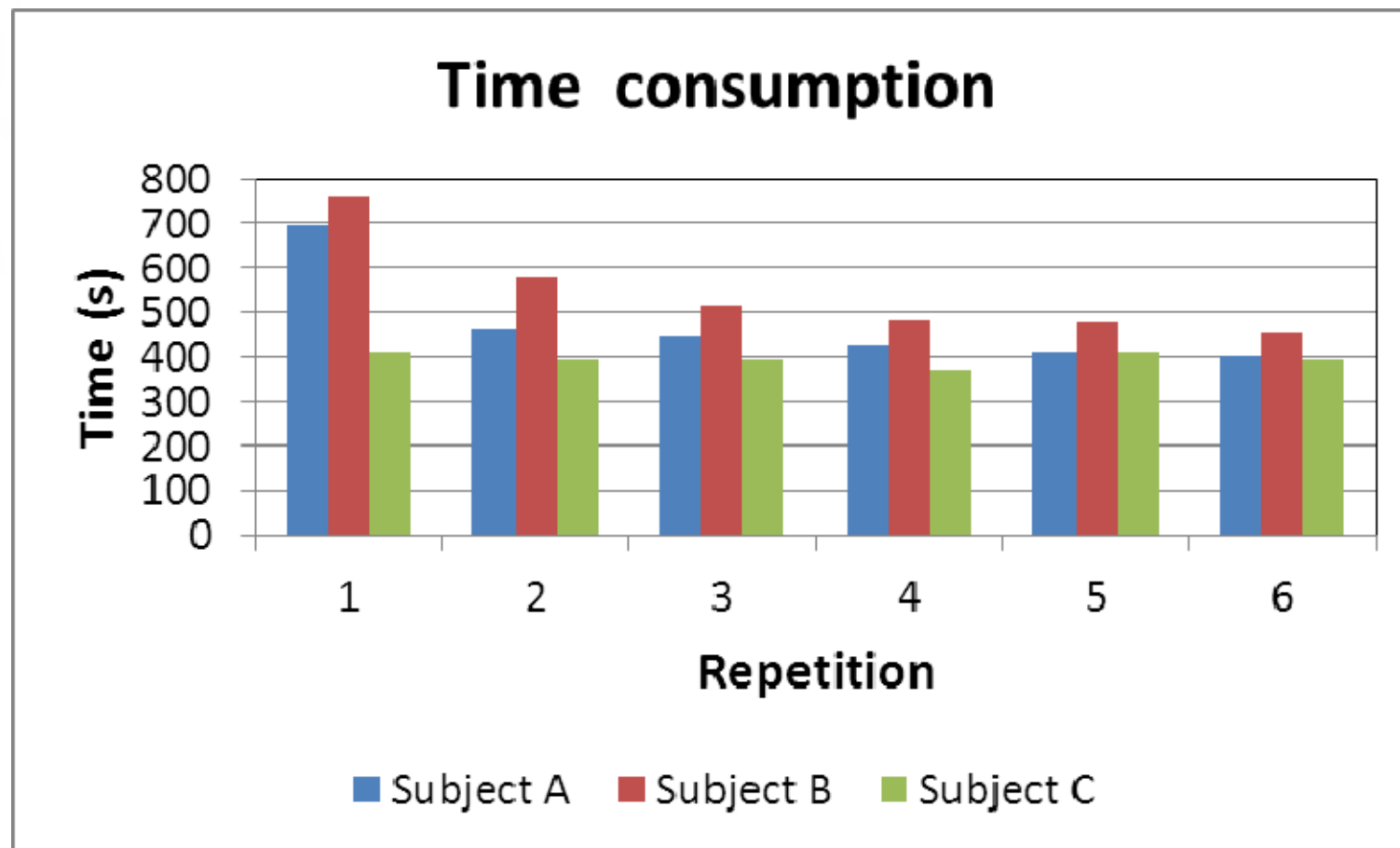
Morten Nitteberg



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Repetition on repetition improvement!

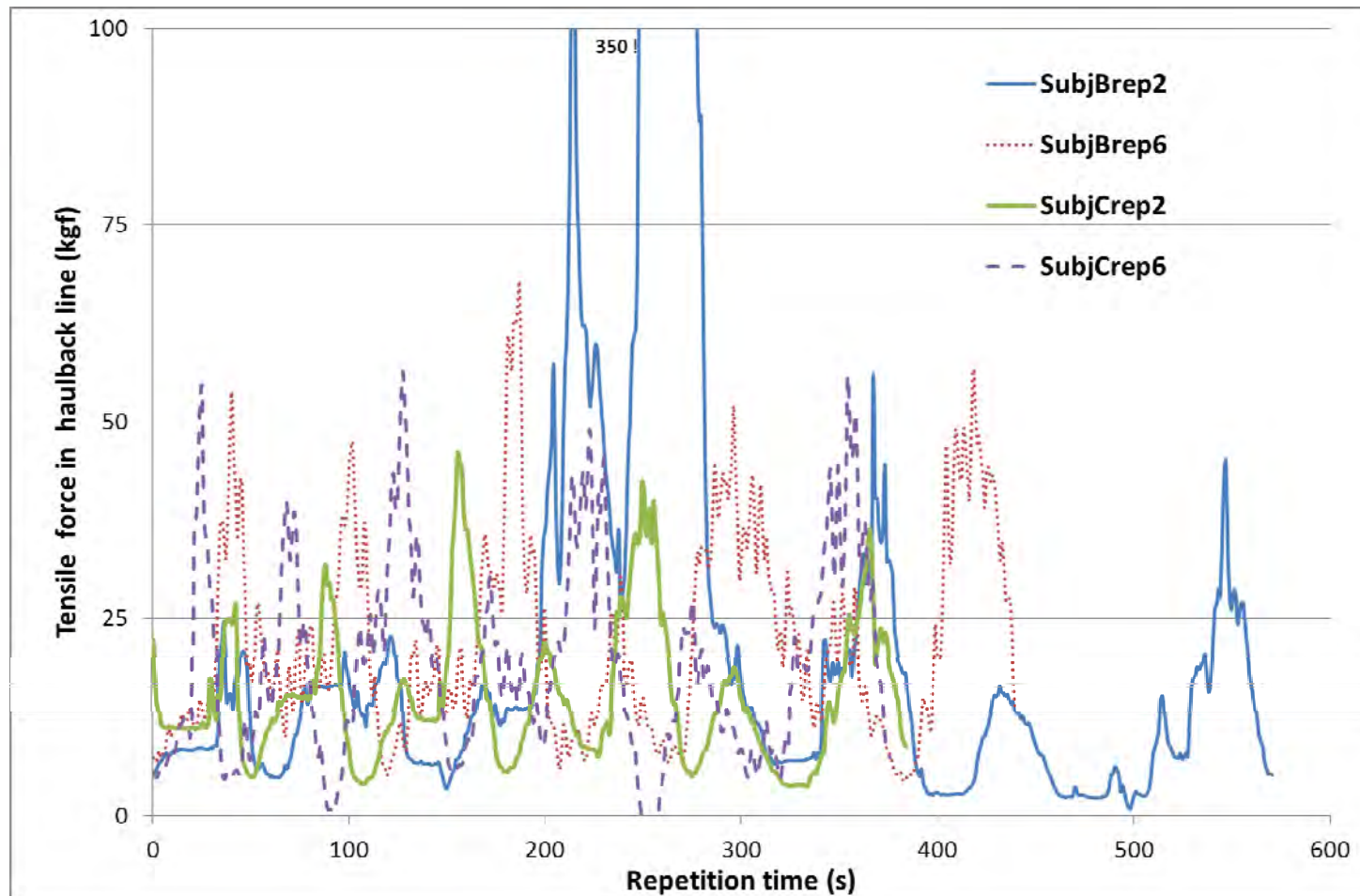


Continuous force and time profiles for subjects B & C, repetition 2 and 6 respectively



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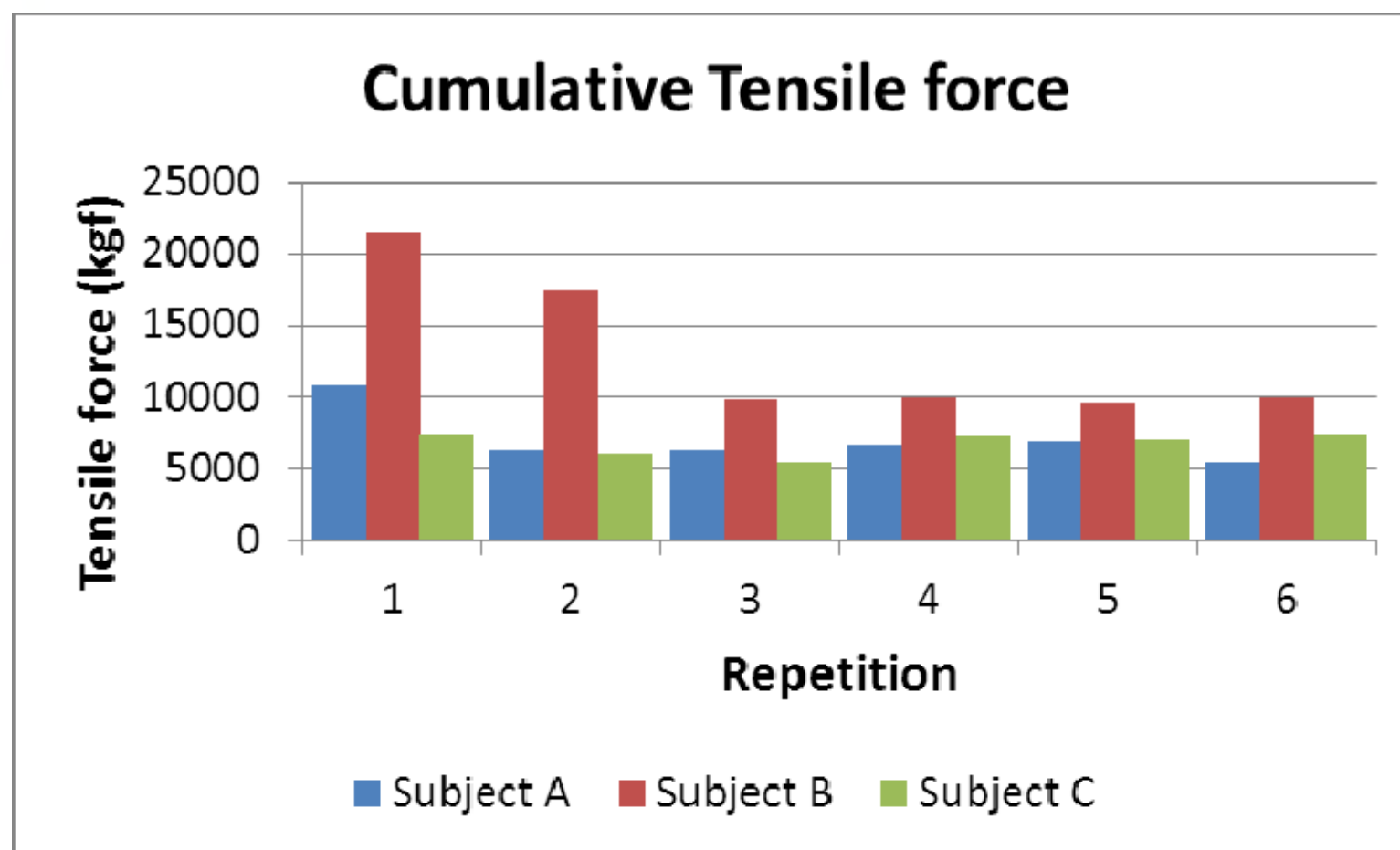
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Owren 400 Mini tower yarder.

Conclusion:

- Excellent tool for training cable logging crew and students.
- Training can be done without risk, but in similar conditions- especially in developing motoric skills for smoother operations
- Gives us an unique possibility to promote cable logging harvesting technique for forest owners/others.



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Thank you very much for your attention!



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