

LORENZO GANDINI

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Biomechanical **O**ptimized
Observeation in **S**port **T**raining

BOOST

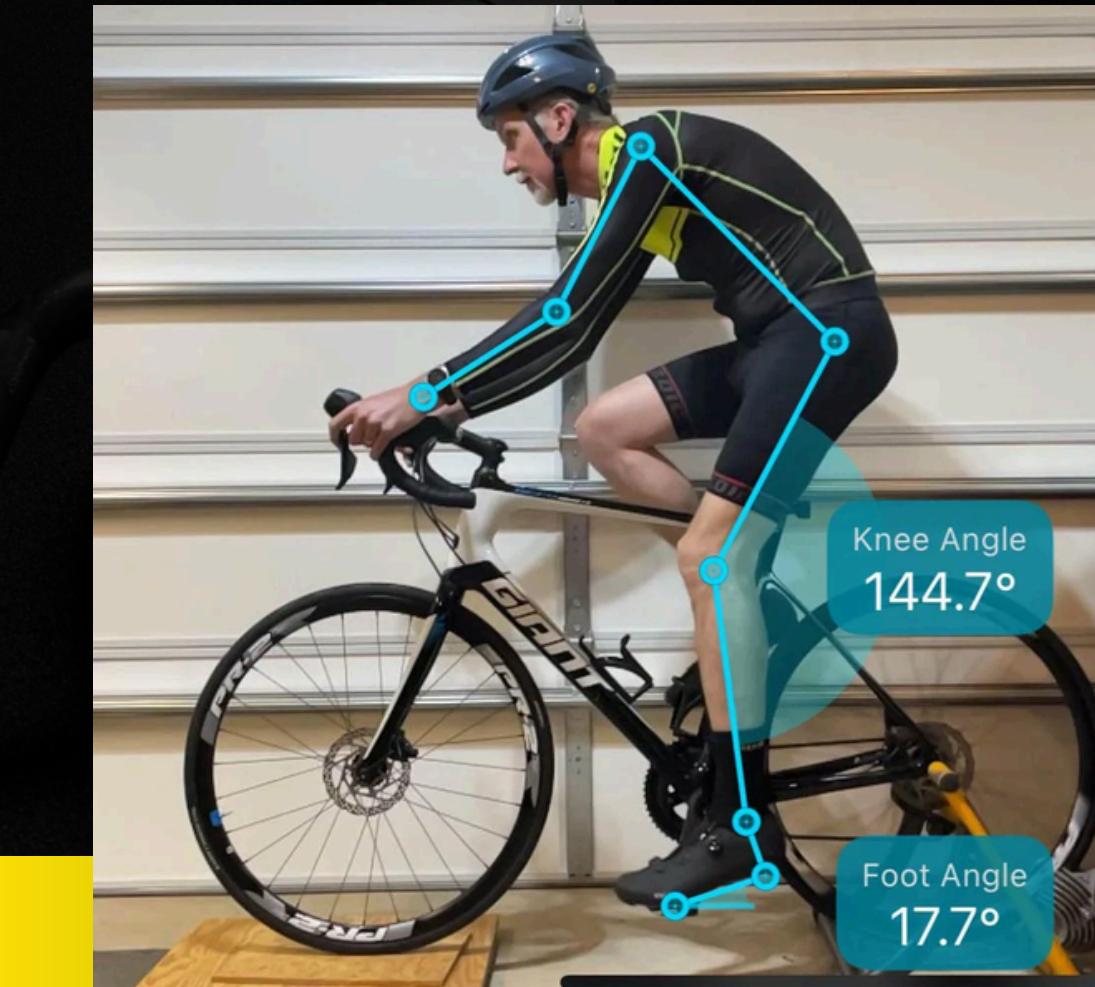
PROJECT OBJECTIVES

02

BOOST

KINEMATIC RECONSTRUCTION

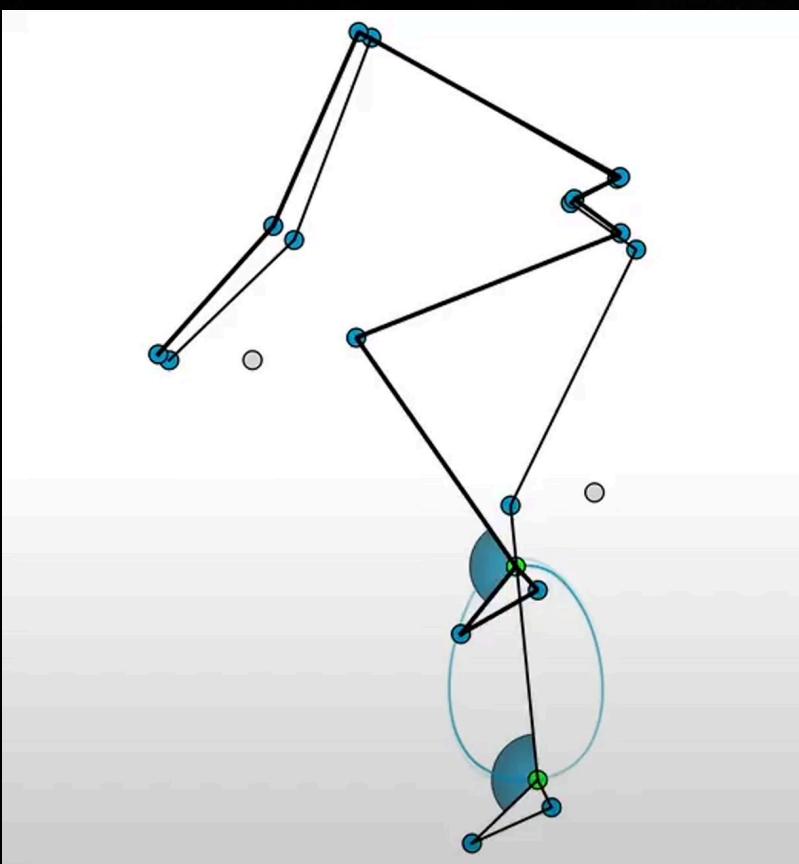
Detailed 3D biomechanical reconstruction of the kinematic chain using the MoCap system



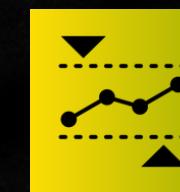
PERFORMANCE INSIGHTS

Study and analyze individual athlete performance trends to identify patterns and optimize training strategies.

DESIRED OUTCOME



1.
Postural and kinematic's improvement analysis



2.
Evaluating sport performances through different parameters



3.
Describe training trends for each athlete

COMPETITORS

1. ZWIFT



Virtual ecosystem combining gamified worlds with structured training for indoor cyclists.

2. TRAINER ROAD



Data-driven training plans designed to maximize cycling performance improvements.

3. GARMIN – TACX TRAINING



Integrated hardware-software system with smart trainers for accurate performance analysis and personalized training

4. BKOOL



Realistic global route simulations, ideal for immersive exploration and effective indoor training.

NONE OF
THEM
MAKE
KINEMATIC
ANALYSIS

ACTIVITIES

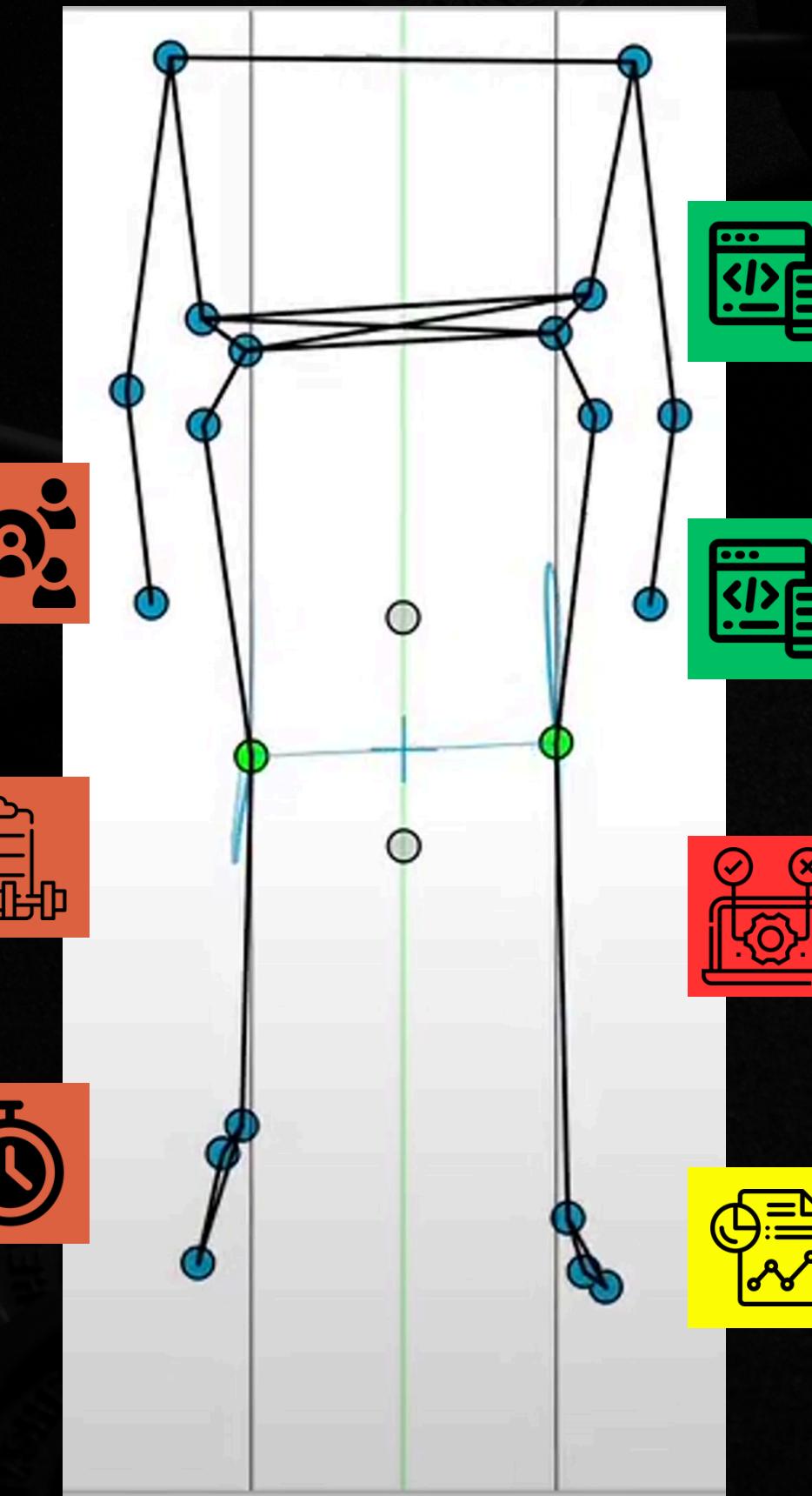
1.
Recruiting athletes



2.
Define training sessions with pro-
athlete

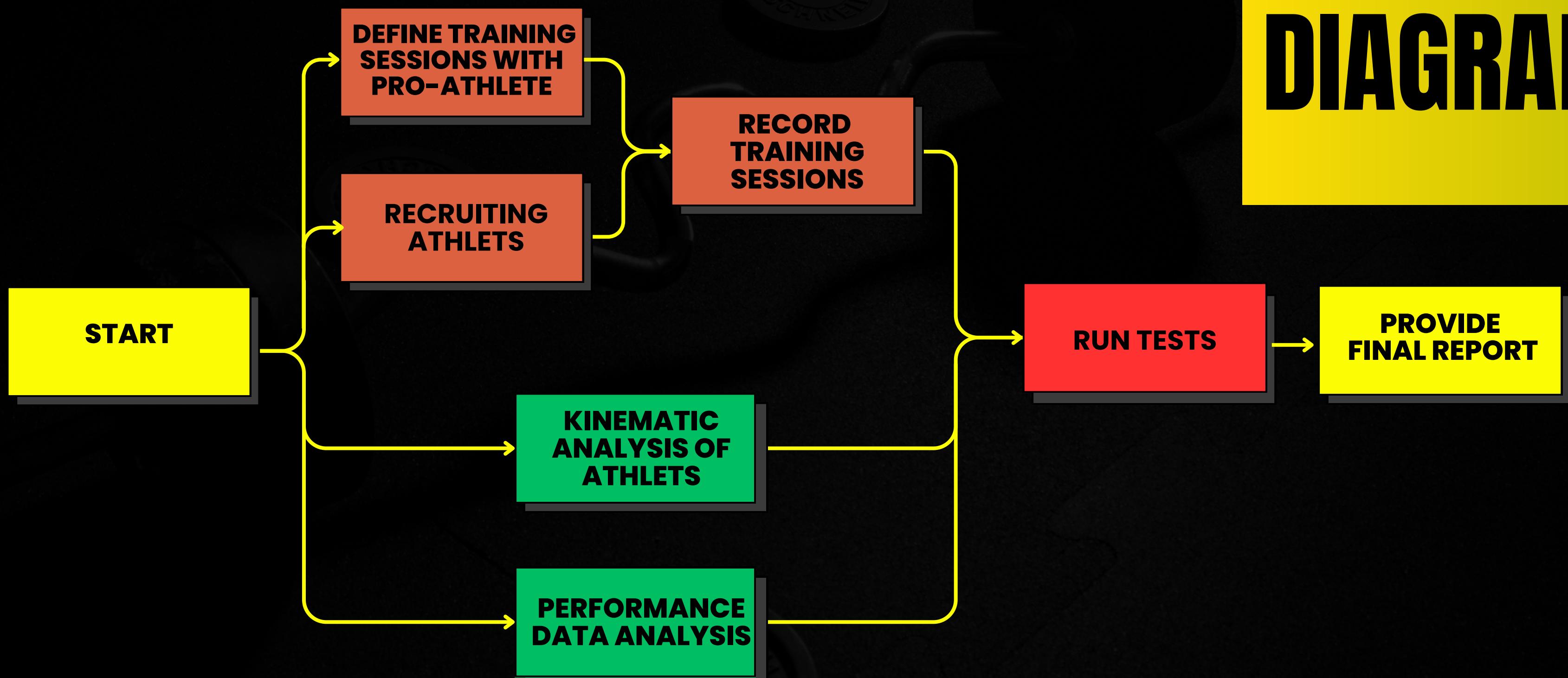


3.
Record training sessions



4.
Kinematic analysis of athletes
5.
Performance Data Analysis
6.
Run tests
7.
Provide final report

PERT DIAGRAM



MILESTONES

M1.

Recruiting athletes and giving them the training schedule previously defined.

M2.

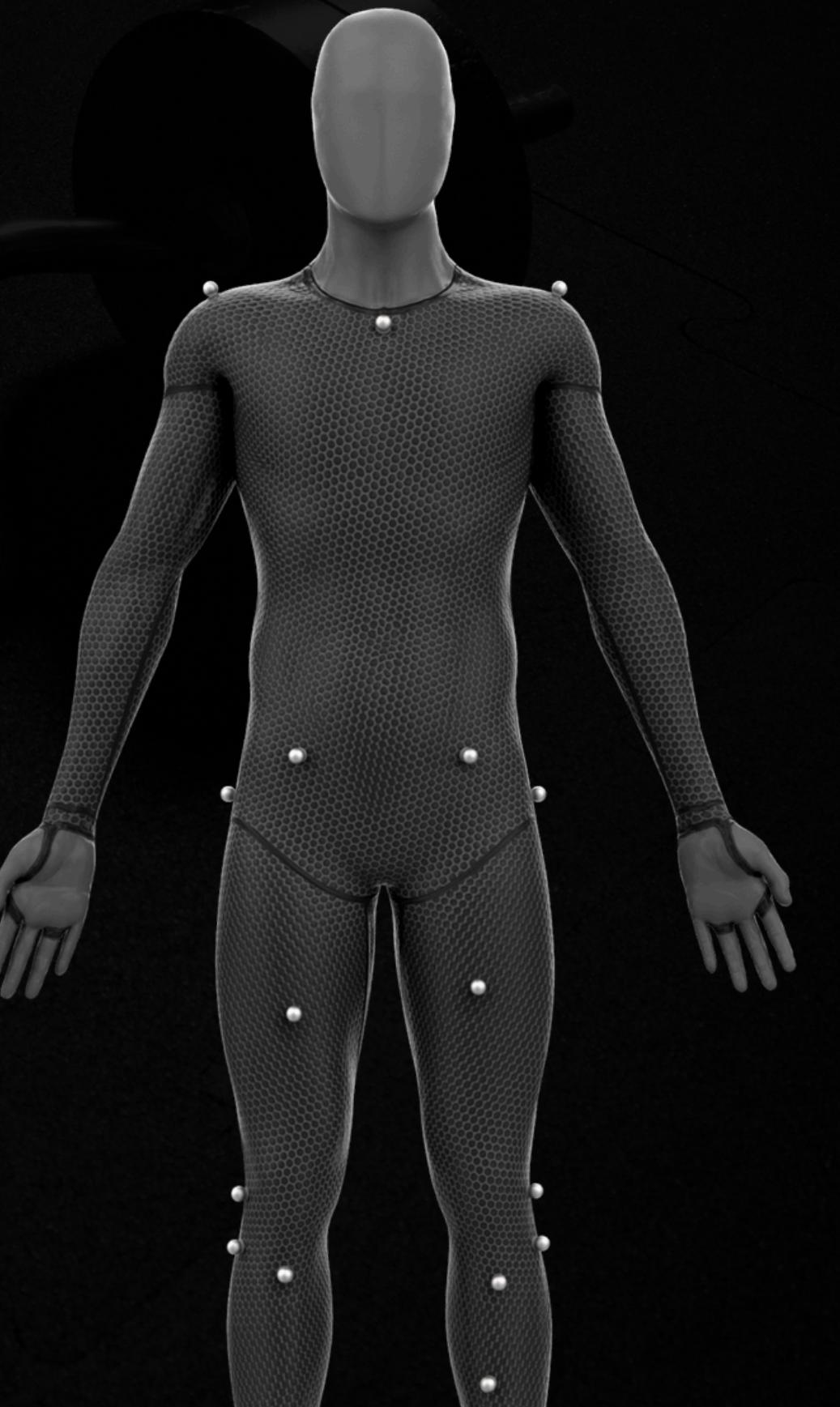
Complete the development of the **kinematic analysis** with **MoCap system**

M3.

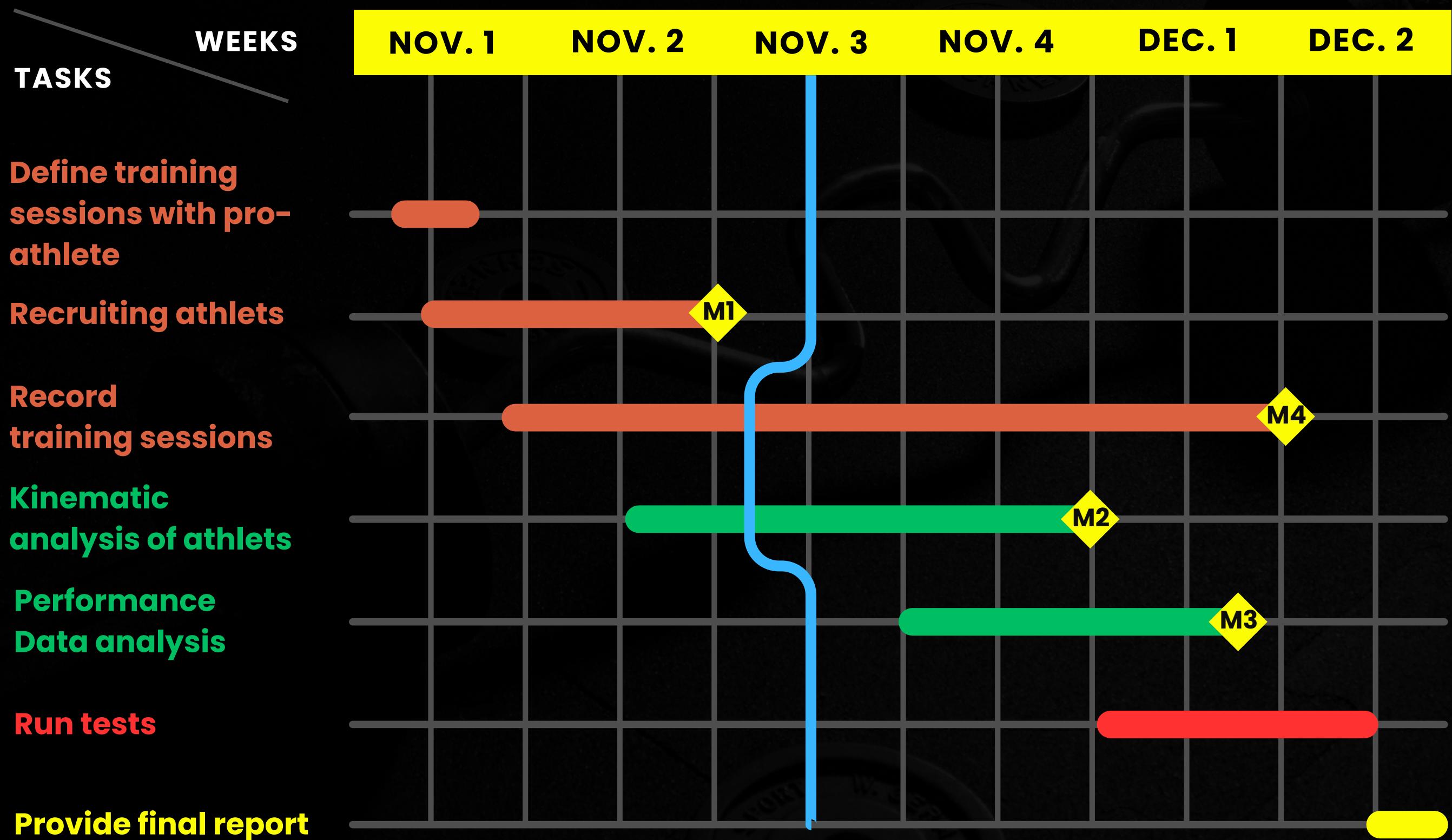
Complete the software that will provide **analysis of the collected data**.

M4.

Collect all necessary data for **posture** and **performance analysis**.



GANTT DIAGRAM



CONTINGENCY PLAN



M1 : RECRUITING ATHLETS - REACHED

At least 6 athletes have been recruited for the project.



M2. KINEMATIC ANALYSIS OF ATHLETS

If we can't analyze the full kinematic chain of the body, we will focus only on legs movements



M3. PERFORMANCE DATA ANALYSIS

If we can't provide an analysis of all parameters, we will focus only on **power** and **heart-reate**



M4. RECORD TRAINING SESSIONS

If some athlete will quit the training schedule, we will rely only on kinematic and performance data analysis of the remaining volunteers.

BOOST

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THANK YOU

For Your Attention

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