

ARMANDO FORGIONE

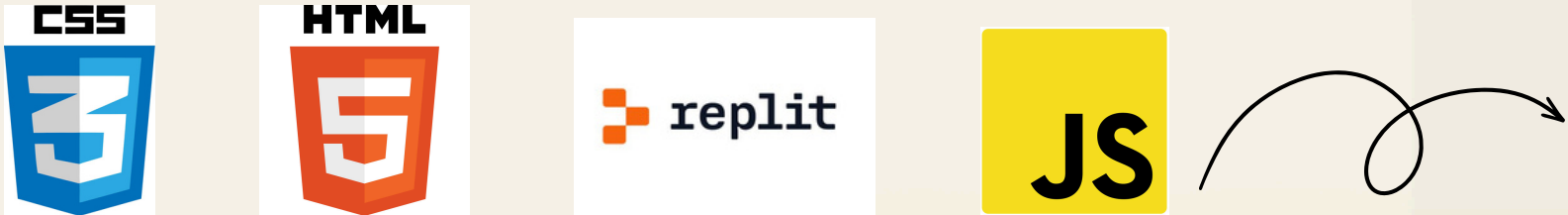
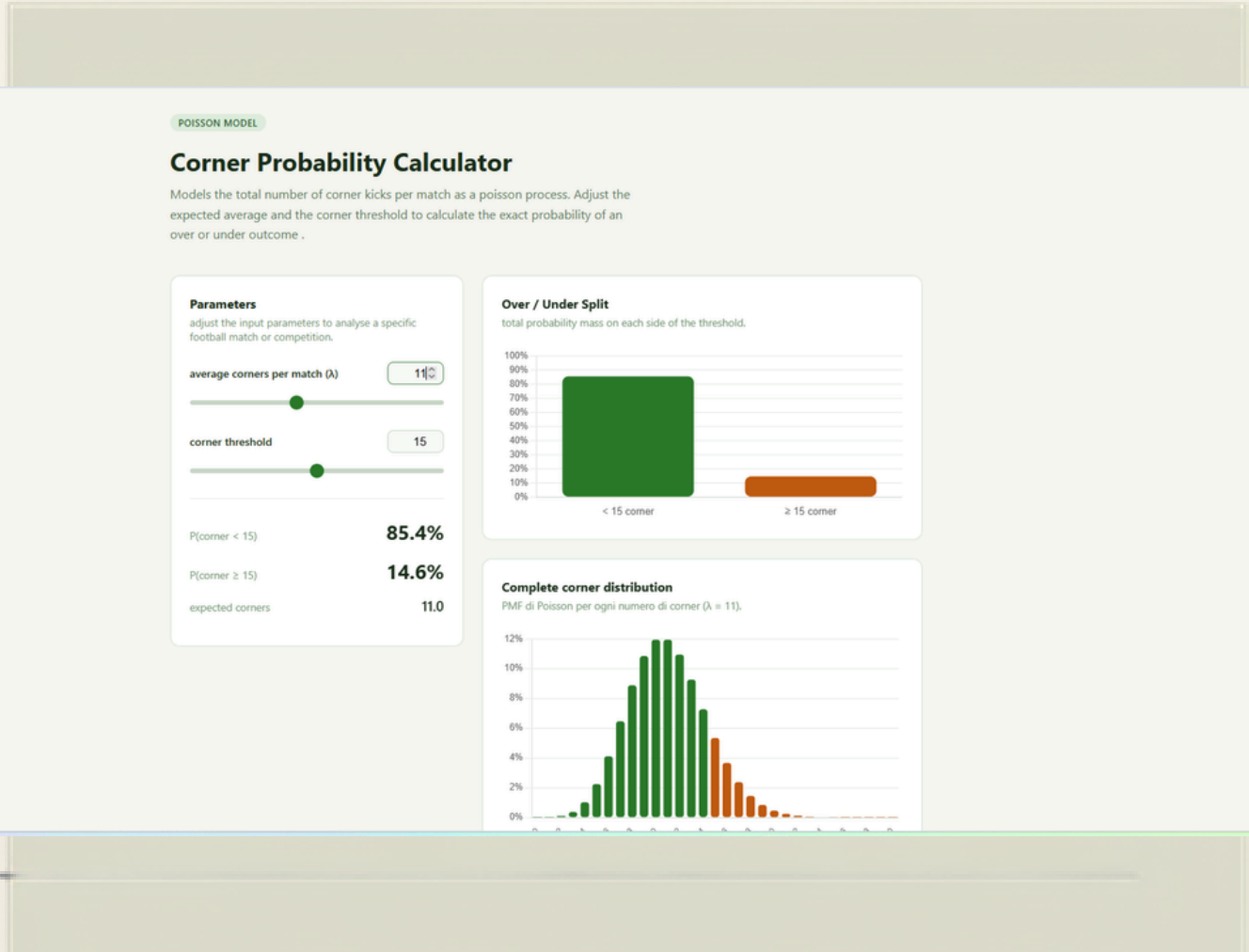
BSC APPLIED COMPUTING

AIM

To develop an interactive web-based application that uses the Poisson probability model to analyse football corner events and improve understanding of probability, uncertainty and risk.

The main interface allows users to adjust the expected average number of corners (λ) and the selected threshold, while the application automatically updates the probability results.

Application Interface



THE APPLICATION WAS DEVELOPED USING HTML5, CSS3 AND JAVASCRIPT, WITH REPLIT USED AS THE DEVELOPMENT ENVIRONMENT.

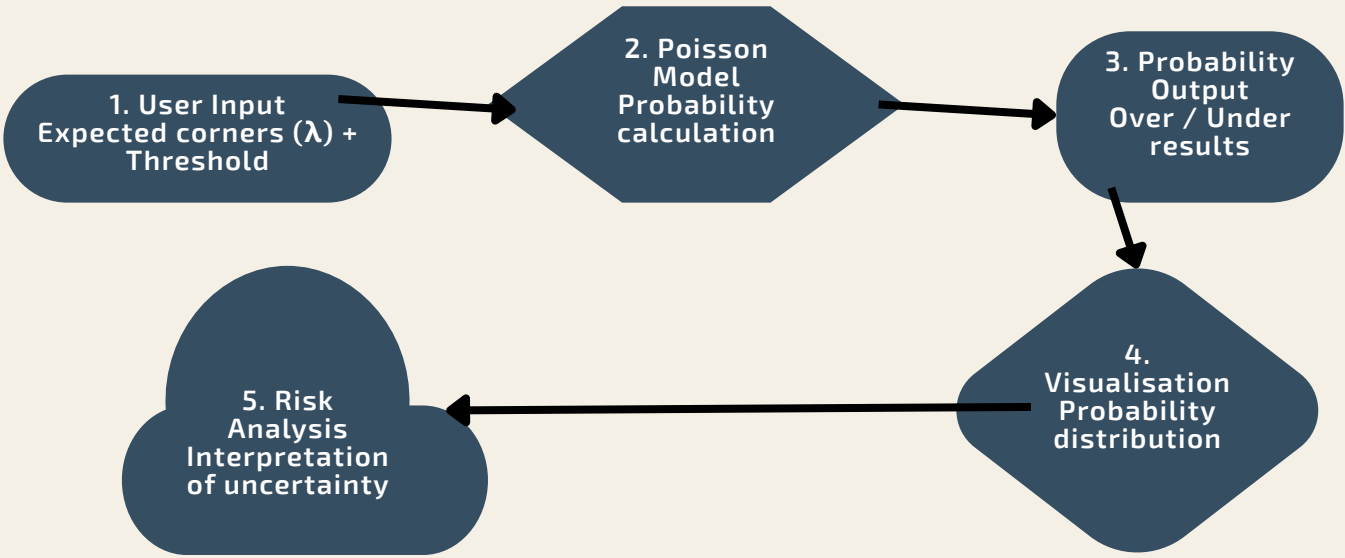
Research Method

Software Development Life Cycle (SDLC) was used to structure the development of the application through requirements analysis, design, implementation, testing and evaluation

The Risk During the Match visualisation shows how the probability distribution changes as the selected parameters are adjusted, helping users understand uncertainty and potential risk during a match.



The system processes user-defined parameters through the Poisson model and dynamically generates probability and risk visualisations.



Short Literature Review

Previous research shows that Poisson models can be used to analyse discrete football events. However, corner kicks have received less attention than goals and shots.

References

Ross, S. (2014). Introduction to Probability Models. Academic Press.

Hughes, M. & Franks, I. (2005). Analysis of Passing Sequences and Performance in Football.

Objectives

- Implement a Poisson probability model for football corner events.
- Develop an interactive application with adjustable parameters.
- Visualise probability and risk outcomes clearly.
- Evaluate the effectiveness and limitations of the approach.

Limitations & Future Work

Limitations: Manual parameter input and a basic Poisson model.

Future Work: Integration of real football datasets, real-time information and more advanced statistical models.