

IndividualProject-Proposal

by William Rowlands

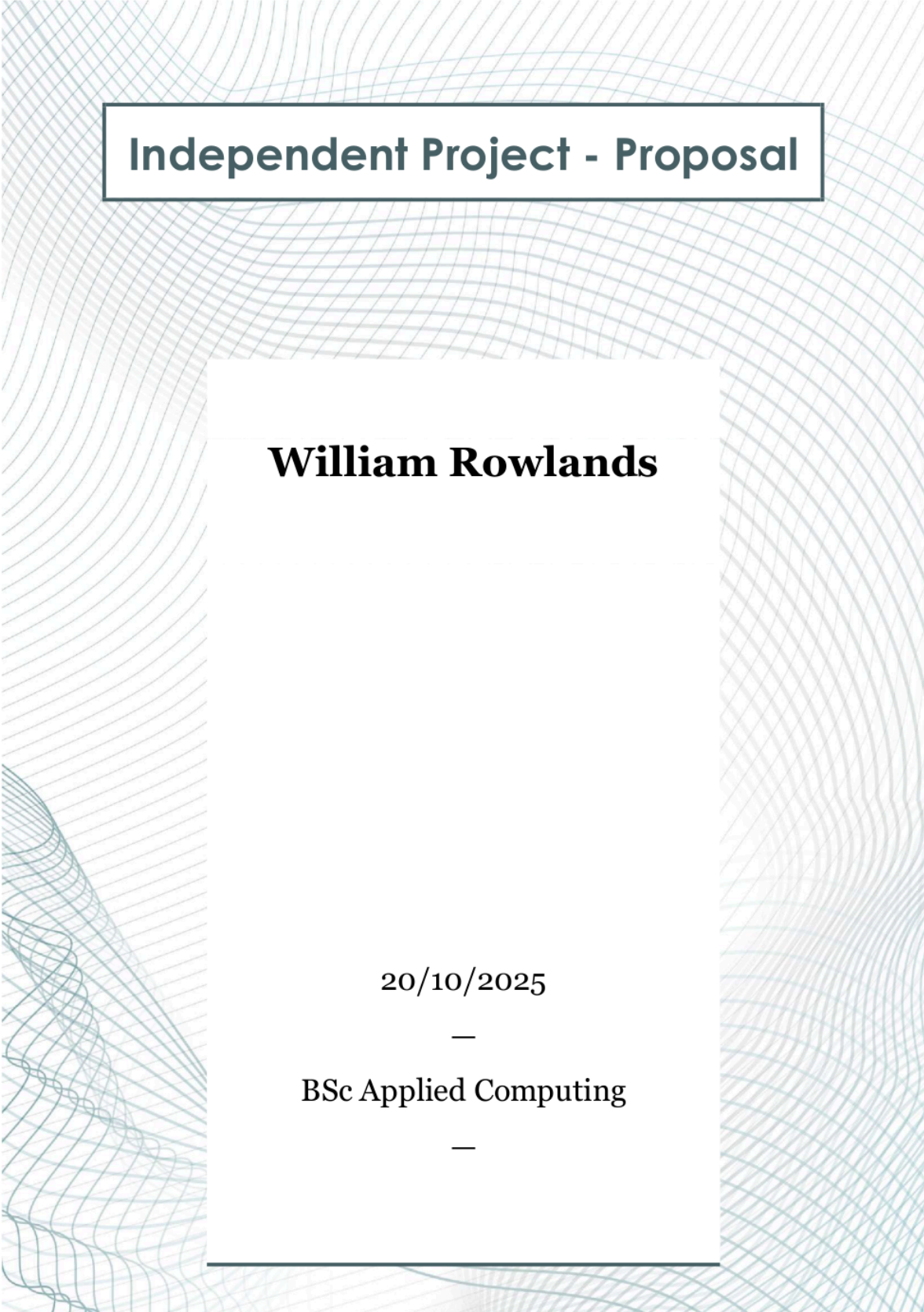
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Independent Project - Proposal

William Rowlands

20/10/2025

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BSc Applied Computing

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1. Introduction

With data-driven insights increasingly impacting how teams evaluate performance and make strategic decisions, sport analytics has emerged as a significant area of applied computing. Large volumes of match data, including individual statistics, team outcomes, and performance trends, are stored on cricket websites like Play-Cricket.com. However, a large portion of this data is shown in simple tables without interactive analytical tools that may help clubs, coaches, and players make more meaningful interpretations of the data.

The purpose of this study is to investigate how analytics and data visualisation can improve amateur and semi-professional cricket players' comprehension of performance. It is now possible for individuals and clubs to employ sophisticated computing techniques—like data aggregation, trend analysis, and interactive dashboards—without the need for costly software or data science knowledge because of the increasing accessibility of public sports data and open APIs.

After gathering and processing publically accessible data from Play-Cricket.com, the suggested system will display the data via an interactive web application. Users will be able to monitor and compare player statistics, analyse trends, and track team performance over time with this tool.

2. Initial Literature Review

2.1 The Sports Analytics Field

Sports analytics assesses team and player performance using statistical and computational methods. Elite levels of cricket have historically used analytics using programs like ESPN StatsGuru and CricViz. However, amateur or grassroots clubs rarely have access to the same level of analysis.

2.2 Present-Day Technologies and Their Deficits

Current solutions, such as Play-Cricket.com, prioritise data retrieval and storage over insight creation. Users find it challenging to spot performance trends or correlations because the data is displayed in static formats. In the meanwhile, non-technical consumers cannot handle the complexity of general-purpose data visualisation tools like Tableau or Power BI.

According to research, interactive dashboards can greatly improve sports participation and decision-

making. There is, however, a glaring academic and practical vacuum because there is little evidence that such systems were created for local cricket contexts.

2.3 Justification for the Initiative

The absence of easily available, interactive tools for performance analysis in grassroots cricket has been recognised as the gap. This project fulfils a practical and scholarly requirement by creating an online analytics platform that analyses publicly accessible match data. Because it combines data engineering, UI design, and applied analytics, it is pertinent to Applied Computing.

3. Statement of the Problem

Cricket teams and players frequently have access to comprehensive match statistics, but they lack the user-friendly tools necessary to properly understand that data. As of right now, there isn't an interactive, user-friendly platform that offers customised insights from openly accessible club-level cricket data.

4. Goals and Objectives

4.1 Aim

To improve comprehension of performance trends at the club level, a web-based cricket performance analytics platform that visualises publically accessible player and team statistics is being designed and developed.

4.2 Objectives

1. To gather and analyse Play-Cricket.com's publicly accessible cricket performance data.
2. To create and put into place a database system for managing and storing team and player statistics.
3. To provide an interactive web-based dashboard that allows key performance indicators (KPIs) including averages, strike rates, runs, and wickets to be visually shown.
4. To test the resulting system's functioning and usability with prospective users (coaches or players, for example).
5. To make sure that privacy and data ethics guidelines are followed while working with public data sources.
6. To critically analyse the effectiveness of the system and identify future improvements.

5. Anticipated Results and Deliverables

- A complete web-based analytics solution that can interactively display team and player statistics.
- A relational database created to store and retrieve cricket data effectively.
- A dissertation and technical report detailing the design, implementation, testing, and assessment of the system.
- Graphical reports and graphs that show patterns in player performance.

6. Design of the Project

6.1 Summary

The architecture of the system will be three-tiered:

1. Data Layer: Play-Cricket.com will be the source of the data (manually extracted or scraped of public statistics).
2. Application Layer: This layer handles analytics and data processing and is implemented using JavaScript (Node.js) or Python (Flask/Django).
3. Presentation Layer: An interactive visualisation web interface created using HTML, CSS, JavaScript, and Chart.js/.

6.2 Information Gathering

Information will consist of:

- Player names (accessible to the public)
- Match data, including averages, strike rates, runs, and wickets
- Team information (points, wins, and losses)

No personal or private information will be gathered.

Data will be gathered manually or scraped in accordance with Play-Cricket's usage guidelines.

6.3 Techniques of Development

Iterative design, testing, and feedback cycles will be included into an Agile development methodology. Technologies could include JavaScript (Node.js/React) or Python (Flask).

- SQL (for storing structured data)
- Chart.js/PowerBI (for data visualisation)

6.4 Hazards, Restrictions, and Ethical Concerns

For this project, a number of hazards have been identified, along with mitigation techniques. First, using reliable APIs or manually inputting data as needed will lessen the danger of data access disruptions caused by changes to the Play-Cricket website's structure. Second, despite the use of publicly available player names, no sensitive or personal data will be gathered, and the project will be

executed within the technical constraints of the developer through the use of online documentation and a progressive development methodology. Third, the project would focus key analytics and vital functionality first because the scope and complexity of features could cause delays. Lastly, all data gathering and processing will adhere to ethical and legal standards, such as GDPR and Play-Cricket's terms of service to ensure ethical and lawful handling of publicly available data.

6.5 Assessment

Among the evaluation's components will be usability testing with prospective users, such as nearby coaches and players.

- Functional testing of the dependability and correctness of data
 - Performance evaluation for responsiveness and speed
- Usability and satisfaction will be evaluated through descriptive analysis of quantitative feedback obtained through brief surveys.

7. Planning and Resources Needed

Resources Goal of Resources

7.1 Required Resources

Resource	Purpose
PC/Laptop	Development and Testing
Node.js	Backend Implementation
HTML, CSS, JavaScript	Front-End Design
MySQL	Database Management
Chart.js/Power BI	Data Visualisation
GitHub	Version Control
Online Journals e.g. Google Scholar	Literature Review and Background Research

7.2 Indicative Timeline

Stage	Task	Duration	Timeframe
1	Literature Review and Research	2 Weeks	October 2025
2	Requirements Analysis and Design	2 Weeks	November 2025
3	Database Setup and Backend Development	3 Weeks	December 2025
4	Visualisation and Front-End Design	3 Weeks	January 2026
5	Testing and Integration	3 Weeks	February 2026
6	Evaluation and Feedback	2 Weeks	March 2026
7	Composition and Submission	4 Weeks	April-May 2026

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IndividualProject-Proposal

GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

75/100

PROJECT PROPOSAL – ACCA6020 INDEPENDENT PROJECT

Student William Rowlands 2247826
Mark 75

Intro / A&O (400 words)		
Project title; Identification of a specific problem to be investigated; Well-defined aims and SMART objectives; Explaining why this project is worth doing; Discussion of what the project needs to do in order to be a success; Description any deliverables that will be produced at the end of the project	20	18
The student’s project is to design a web based sports analytics app for ‘local’ amateur cricket teams. The student has identified that there is an abundance of cricketing data available, but this data has not been suitably analysed, interpreted and displayed, at a non-professional or amateur club level. The project aims to accrue data from public		

databases such as play cricket.com, on amateur cricket teams, and to display and interpret the data in a more visual and dynamic way, whilst performing a statistical analysis at a club and individual level to monitor performance, suggesting areas of improvement and highlighting trends. An outline in the form of a table indicating a SMART timeline as to what needs to be done in order to complete a successful project outcome, that of a deliverable working app capable of analysing performance, trends and outcomes at a club and individual level displaying data in a user friendly and dynamic manner.		
Background to the Project / Literature Review (400 words)		
Description of how the work to be done by in the project relates to the work identified in the literature review; Discussion of any ethical issues raised by the project Identifying what has already been done within the field; Topic familiarity; Brief literature review using appropriate sources – 6-8 journal papers and book chapters	20	10

rather than just websites; Selection of relevant models & concepts The literature review is sparse. This may be because not much work has been done in this area at the amateur level, but there should be a considerable amount of analytical methods from sport science undertaken at the professional level which could be utilised. Some citations from three journals are quoted, but referenced poorly in the report, with little evidence of their use or results obtained which could aid the project. Most are from web based resources. The student claims 'evidence suggests that..., ' but does not link this to any reference in the proposal. The student claims, which is probably true, that data analysis is usually undertaken at the professional level.		
Project Design (500 words)		
Clear statement of which development methods are to be used and why they are appropriate; Clear statement of which tools are to be used and why they are appropriate; Clear description of how data collected will be analysed	30	25

The student's project aims to aid the analysis, comprehension and performance at a local club level, by creating a web based data base and platform to analyse team and individual player data obtained from a public data base.

The student will then further create a suitable data base to present the data in a more visual/dynamic format(not static) and perform meaningful statistical analysis on the data, displaying the results(KPI's) in a more user friendly, insightful and beneficial way. The effectiveness of the system created will also be analysed to identify its potential and highlight areas for development via survey analysis. The student is aware of the sensitivity of using public data and its compliance to GDBR legislation and ethical issues.

Resources / Planning (200 words)		
List of any deliverables; Clear diagram showing both timing and resource use; Completed ethics form; Limited and relevant appendices. The student has highlighted the necessary physical and software resources which will need to be utilised in order to complete this project, and has also provided a suitable time line in which the project should be completed, ensuring a working product will be deliverable and available at completion of the project. A suitable ethics form has also been completed.	15	13
Document Presentation		
Correct spelling, grammar and punctuation; Flow of narrative/fluency; Coherence; Word processed ; Correct use of referencing with bibliography; Strict word limit	15	9

The student's proposal outline reads well, flows nicely and is coherent. Grammar and punctuation are also good. The weakness is in terms of the literature review, it's findings and how previous research work has highlighted the gaps which inspired the project, along with the poor use of appropriate referencing techniques. The Project is within the word limit.		
TOTAL	100	75

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