A

Project Report on

**DATA ANALYTICS ON ICC T20WC 2021**

Submitted in partial fulfillment of completion of the course

by

**Advanced Diploma in IT, Networking and Cloud**

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| IBM-Logo - Chicago Innovation | DGT introduces high end diploma courses - digitalLEARNING Magazine | Edunet Foundation-Delhi- CSR Organization profile |

Year 2022

Abstract

Cricket is one of the most liked, played, encouraged, and exciting sports in today’s time that requires a proper advancement with machine learning and artificial intelligence (AI) to attain more accuracy. With the increasing number of matches with time, the data related to cricket matches and the individual player are increasing rapidly. Moreover, the need of using big data analytics and the opportunities of utilizing this big data effectively in many beneficial ways are also increasing, such as the selection process of players in the team, predicting the winner of the match, and many more future predictions using some machine learning models or big data techniques

Billions of people around the world are big fans of Cricket. In this paper, we discuss the 7th edition of T20 World Cup 2021 which was in India, held in UAE & OMAN. For this purpose, the ICC, Cricbuzz dataset has been used.

Acknowledgement

We would like to express our sincere gratitude to several individuals and IBM organization for supporting us throughout our diploma study. First, we wish to express our sincere gratitude to our IBM mentor Mr. Prabhu Baskar, for his immense knowledge, profound experience and professional expertise in Industry has enabled us to complete this project successfully while making sure that it matched the industry standards.

We also wish to express our sincere thanks to our Edunet mentor Mr. Deepneel Majumdar, for his enthusiasm, patience, insightful comments, helpful information, practical advice and unceasing ideas that have helped us tremendously at all times in our study and writing of this project report.

In addition, we are deeply indebted to the Ministry of Skill Development & Entrepreneurship and IBM for granting us the diploma course. Their technical and financial support has enabled us to complete our diploma course studies successfully. Also, I am grateful to P Narmada, (ADIT- course coordinator) of NSTI Bangalore for supporting me for course completion in the specific subject.

**Sudhanshu**

**Amit**

Team Composition and Workload Division

1. Sudhanshu – Documentation, Data Collection, Exploratory Data Analysis and Visualization
2. Amit - Data Collection & Visualization

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1. Introduction to Problem

India and so many nations that were playing cricket and as they are improving themselves day by day or per matches. From this Data Analysis we can get the all data of players regarding their performances.

Ideally, we also have to know about the data and performance of players and nation also. By this one player can improve their performances. It’s also help in getting prepared for a specific player.

1. Literature Review

On 17 February 2005 Australia defeated New Zealand in the first men's full international Twenty20 match, played at Eden Park in Auckland. The game was played in a light-hearted manner – both sides turned out in kit similar to that worn in the 1980s, the New Zealand team's a direct copy of that worn by the Beige Brigade. Some of the players also sported moustaches/beards and hair styles popular in the 1980s taking part in a competition amongst themselves for best retro look, at the request of the Beige Brigade. Australia won the game comprehensively, and as the result became obvious towards the end of the NZ innings, the players and umpires took things less seriously – Glenn McGrath jokingly replayed the Trevor Chappell underarm incident from a 1981 ODI between the two sides, and Billy Bowden showed him a mock red card (red cards are not normally used in cricket) in response.

It was first decided that every two years an ICC World Twenty20 tournament is to take place, except in the event of a Cricket World Cup being scheduled in the same year, in which case it will be held the year before. The first tournament was in 2007 in South-Africa where India defeated Pakistan in the final.

Kenya and Scotland had to qualify via the 2007 ICC World Cricket League Division One which was a 50-over competition that took place in Nairobi. In December 2007 it was decided to hold a qualifying tournament with a 20-over format to better prepare the teams. With six participants, two would qualify for the 2009 World Twenty20 and would each receive $250,000 in prize money. The second tournament was won by Pakistan who beat Sri-Lanka by 8 wickets in England on 21 June 2009. The 2010 ICC World Twenty20 tournament was held in West Indies in May 2010, where England defeated Australia by-seven-wickets, the 2012-ICC-World Twenty20 was won by the West-Indies, by defeating Sri Lanka at the finals. For the first time, a host nation competed in the final of the ICC World Twenty20. There were 12 participants for the title including Ireland and Afghanistan as 2012 ICC World Twenty20 Qualifier. It was the first time the T20 World Cup tournament took place in an Asian country.

1. Proposed Solution

A Data Analysis report on ICC T20 WORLD CUP 2021 regarding batsmen’s performance throughout the tournament. This will be very helpful to teams to prepare them self against their opponents. They also know about their strength and weak points. It’s also improved players performances.

By this Data Analysis we want to help teams and coaches to improve their performance against bowlers. Where they have to improve themselves so they don’t get out and increase their run rate and heating ability.

1. Requirements
   1. Technology Stack
2. Excel
3. Power BI

4.2 Hardware

1. Desktop/Laptop
2. Minimum 4GB RAM
3. Processor 64-bit
4. Hard Drive 250GB
5. Internet Connection

4.3 Software

1. . [Power BI](https://app.powerbi.com/links/SyhO7wywVD?ctid=65cc6081-a393-46f5-9e62-3e6659b96a33&pbi_source=linkShare)
2. Git-hub
   1. Deployment Environment
3. Power BI
4. Web page static in git hub

5. User Requirements

1. Electronic Device: Mobile, Laptop, Desktop or Tablet
2. Access to Internet
3. Power BI
4. Microsoft Power Bi account

6. Design Documentation

This project is all about the batsmen’s performance in ICC T20 WC 2021. We collected all the data ball by ball. It’s shows as their ability to score runs under different kind of bowlers.

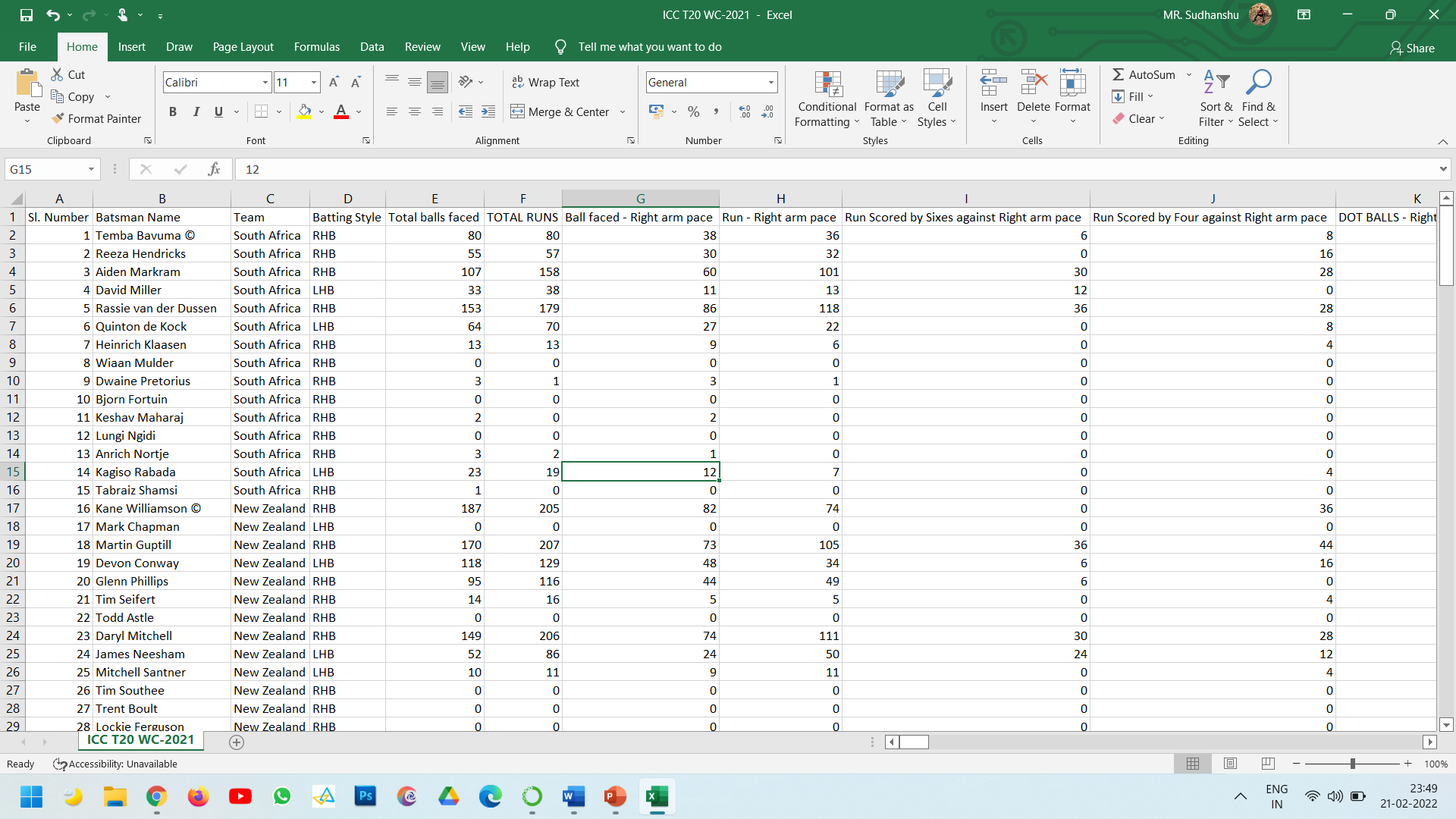


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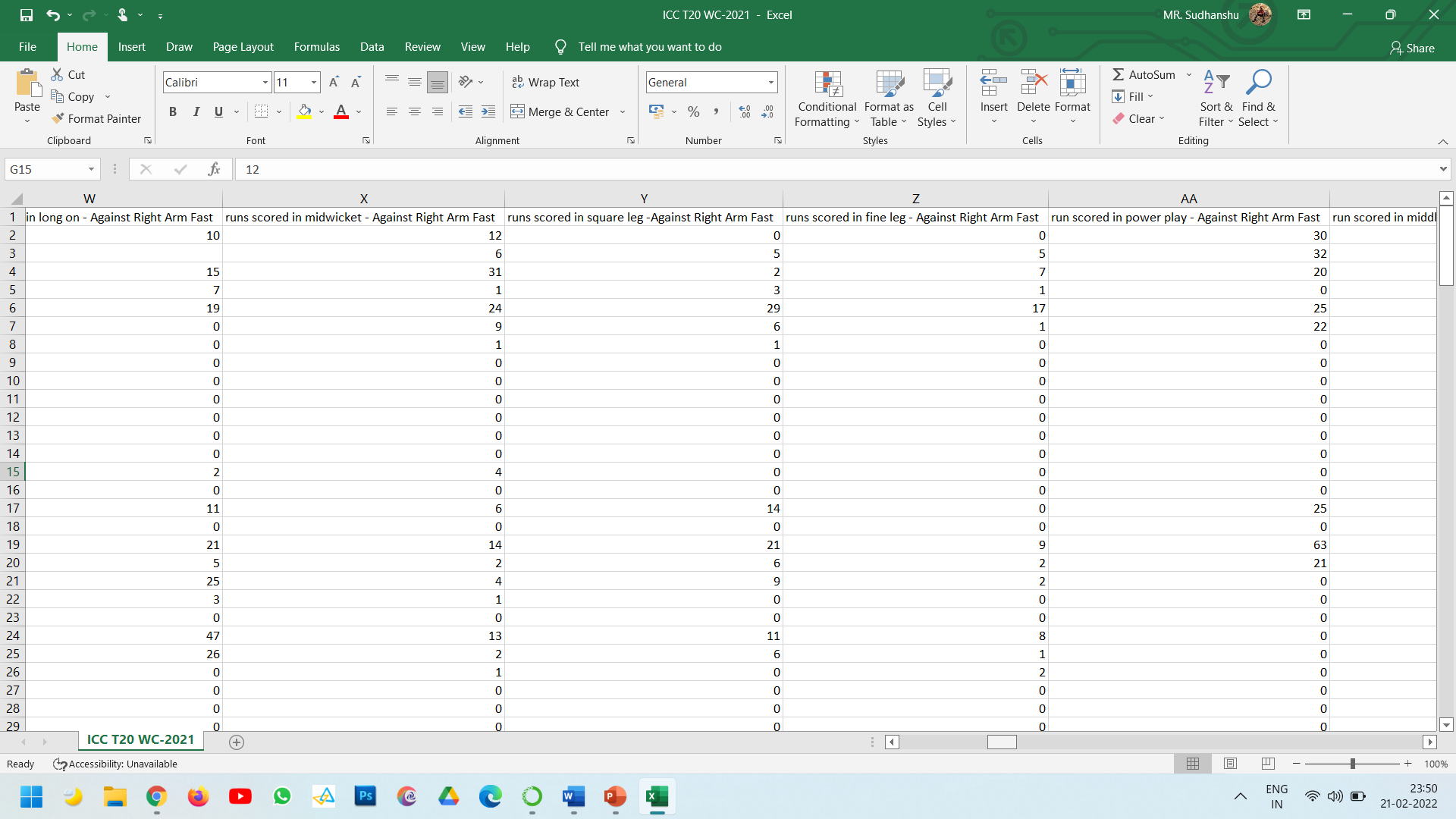


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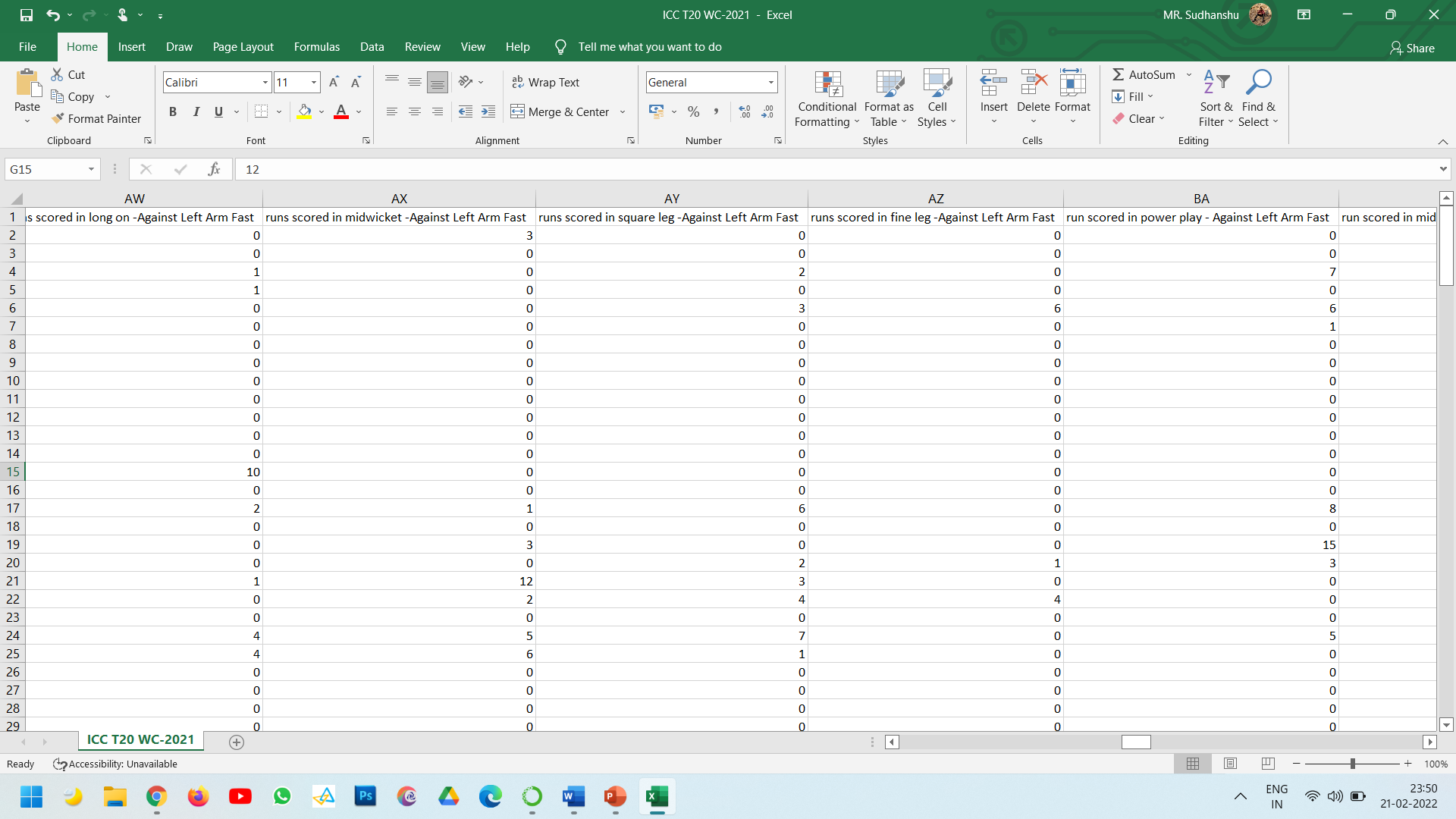


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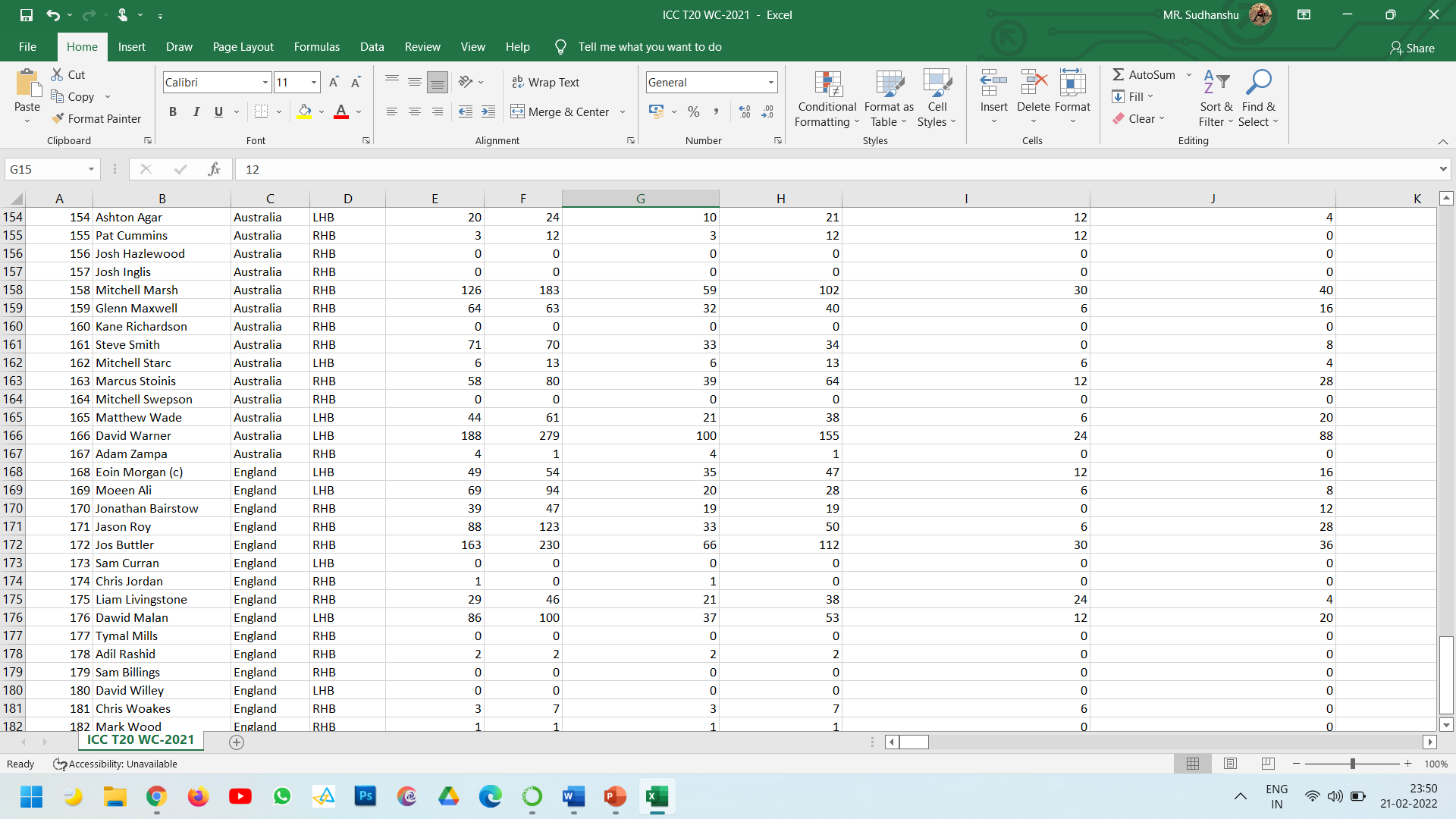


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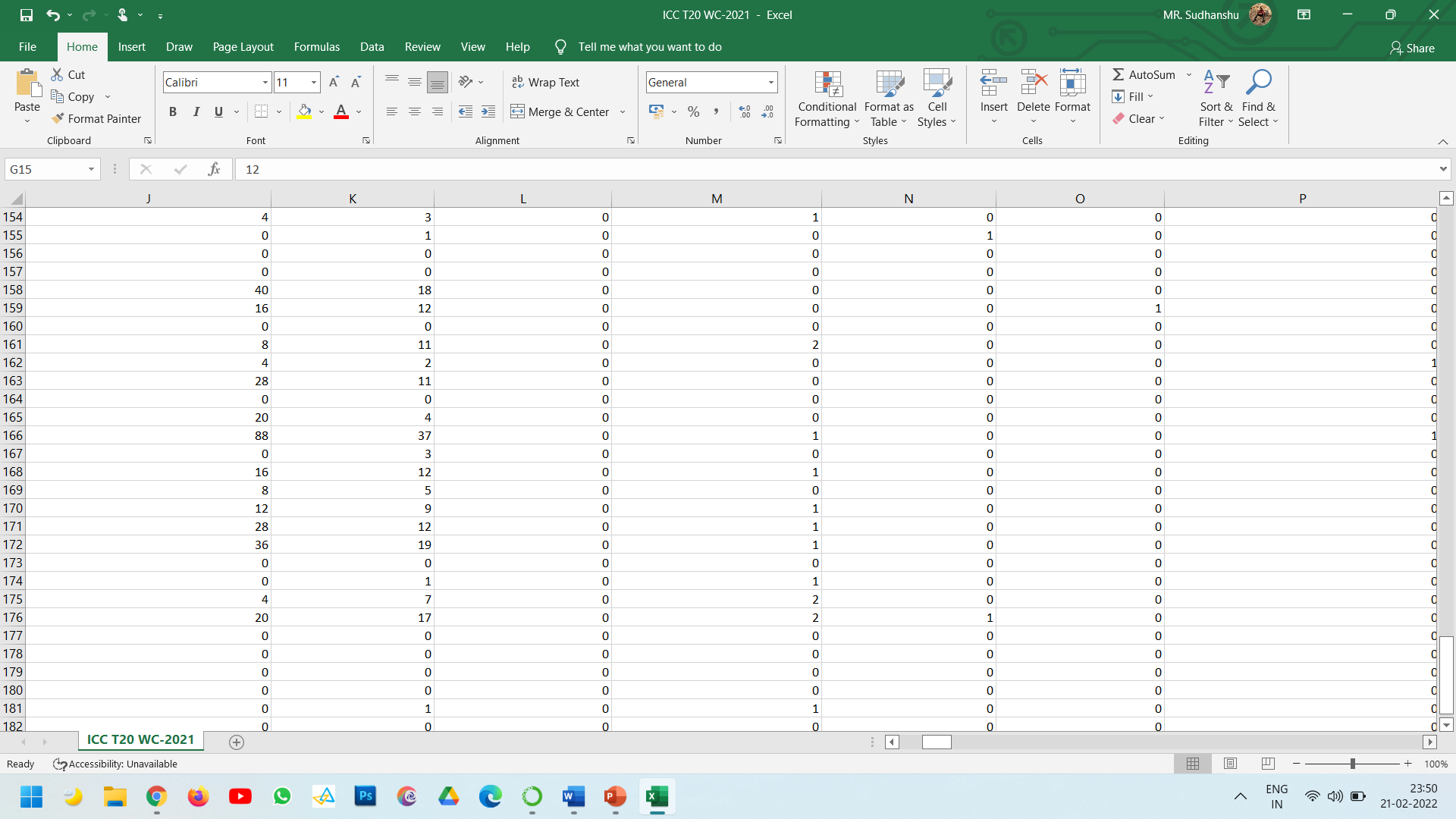


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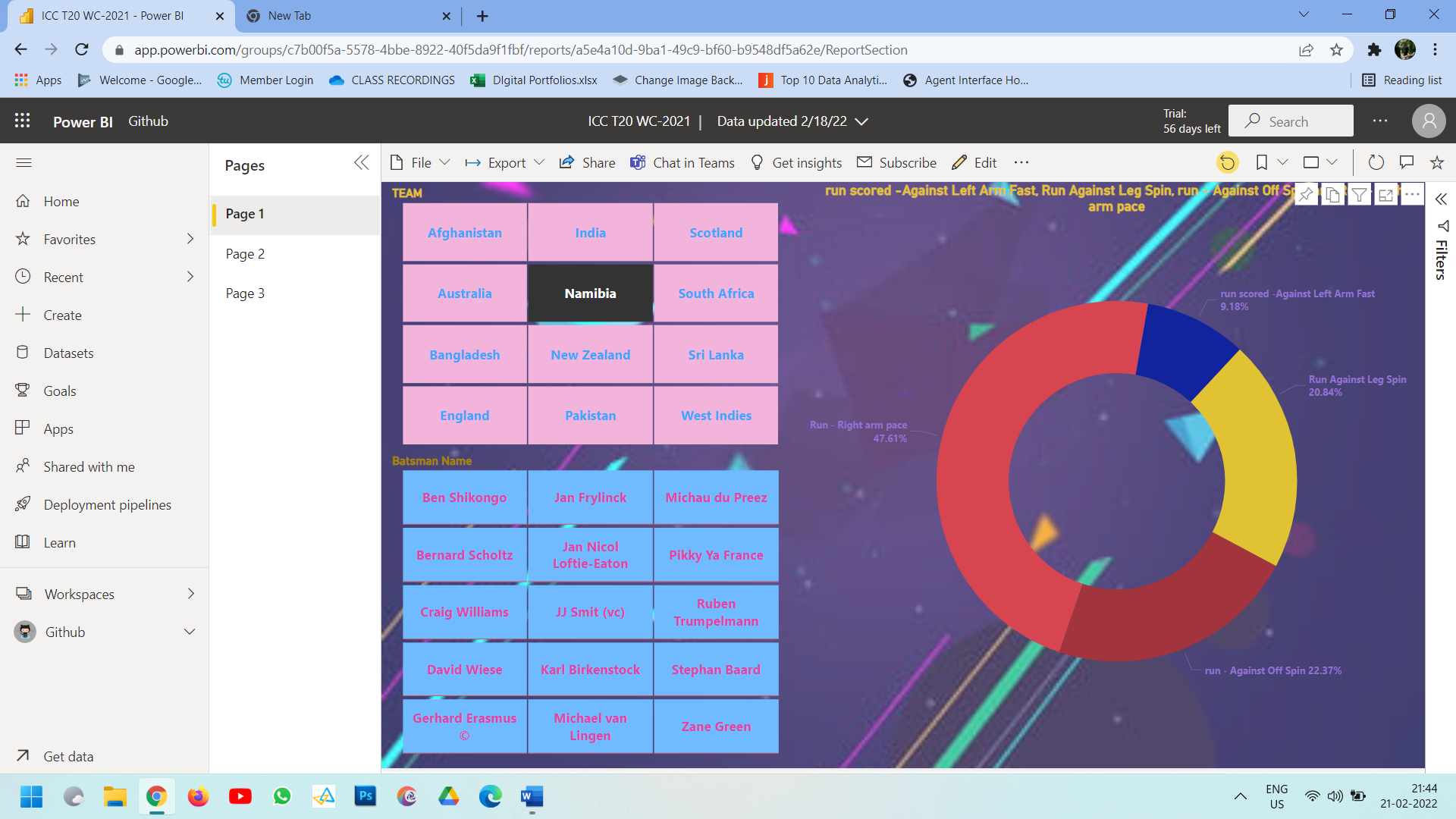


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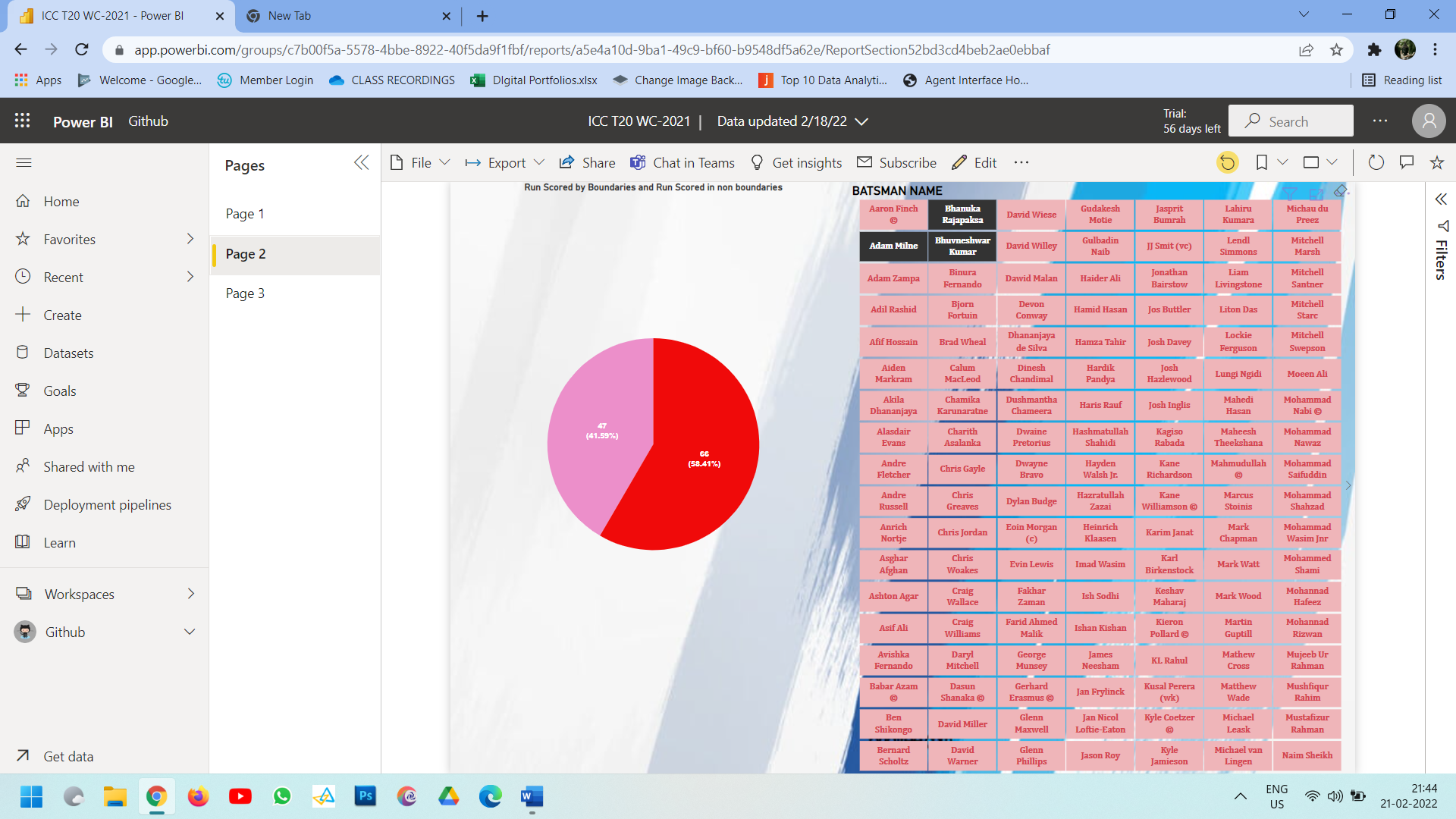


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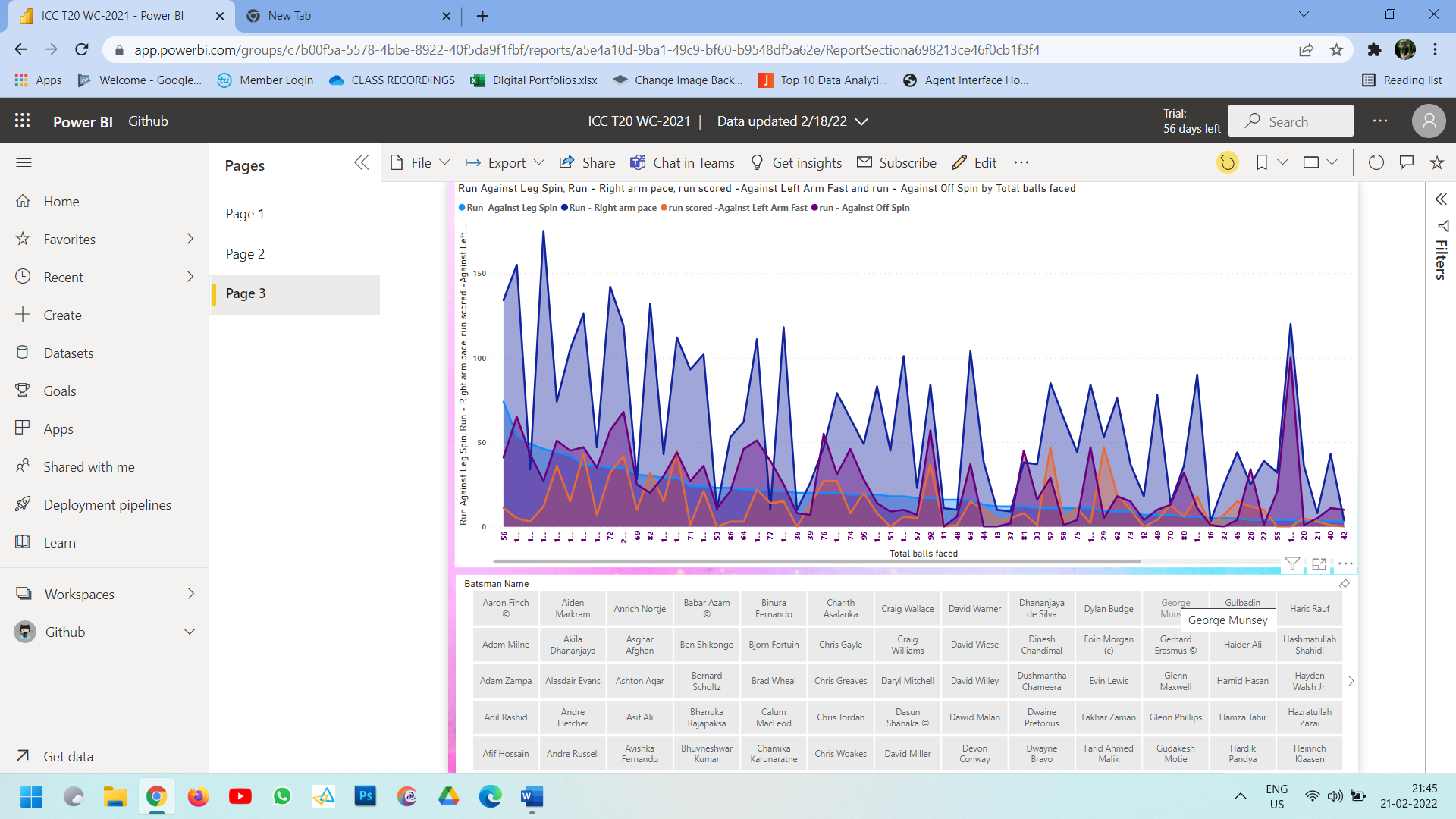


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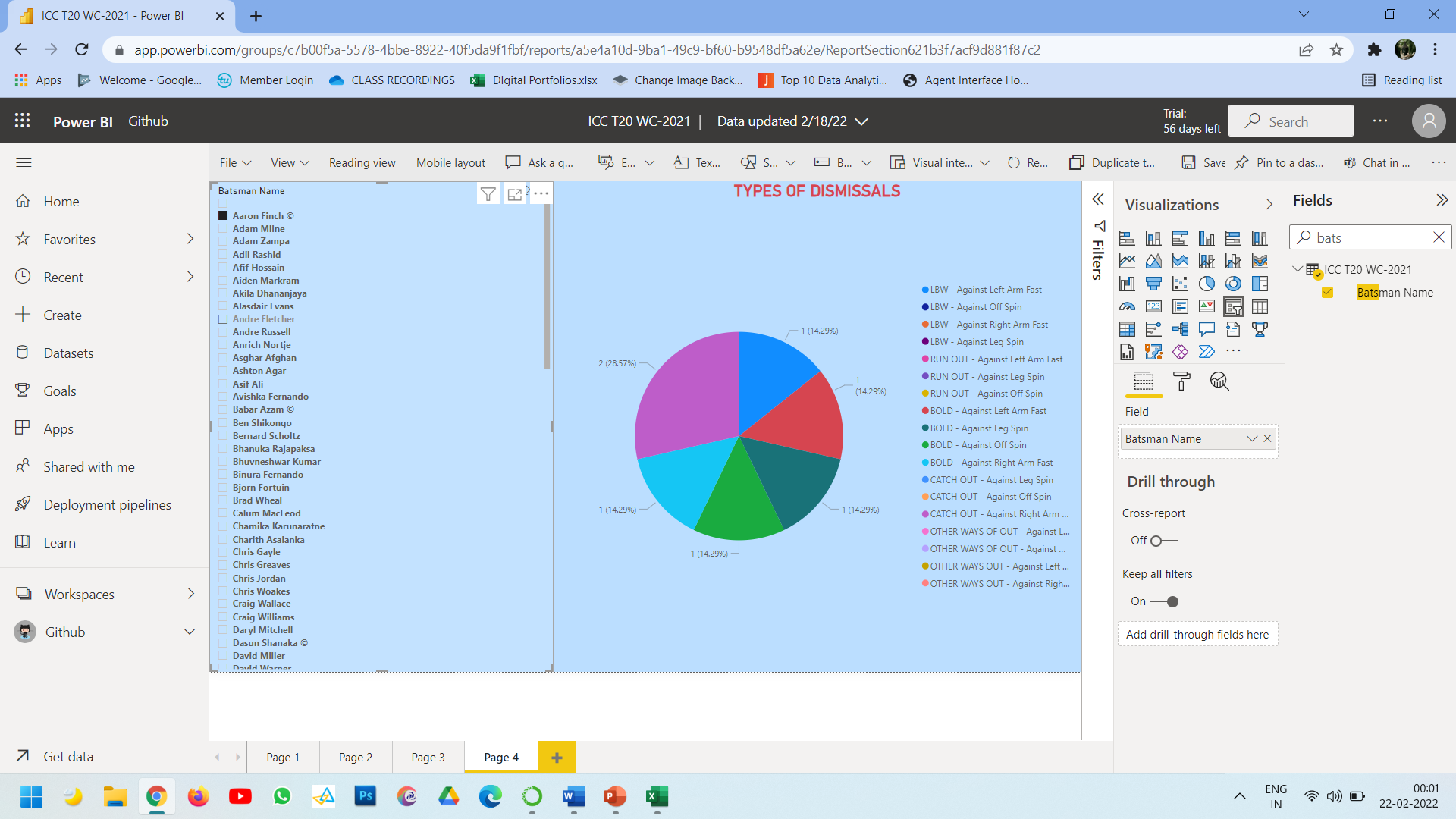


Image [9]

1. Implementation Details

We collected all raw data from ICC T20 World Cup 2021 and also use Cric-Buzz site for data collection. Then we use Excel for Data Storage as simple set.

For visualization and presentation, we use POWER BI & Python (Jupiter Note book). Python is also used for EDA of Data.

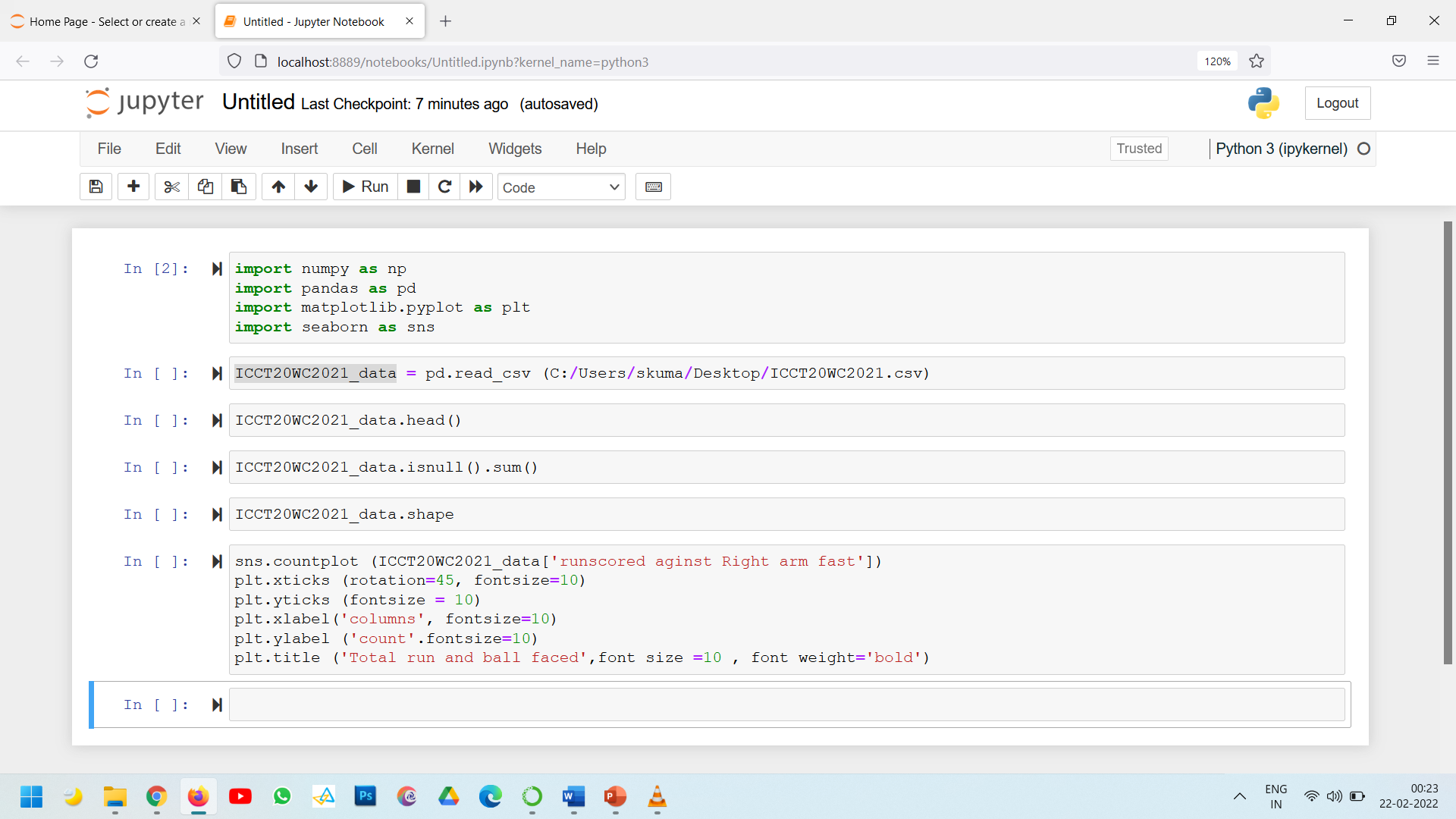


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1. Testing

We will compare our collected data visualization and the data which was presented on site (ICC) for testing of data.

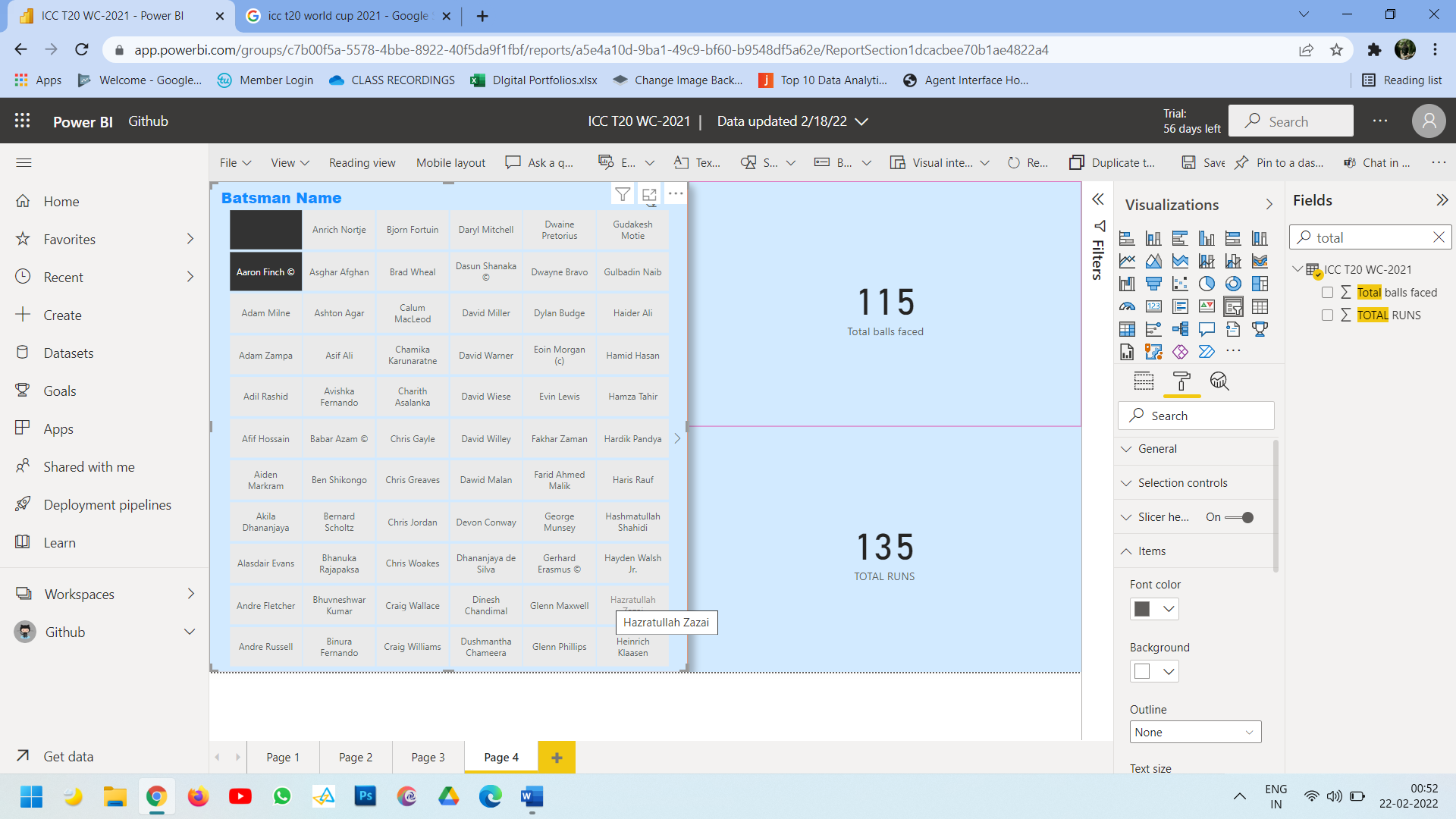


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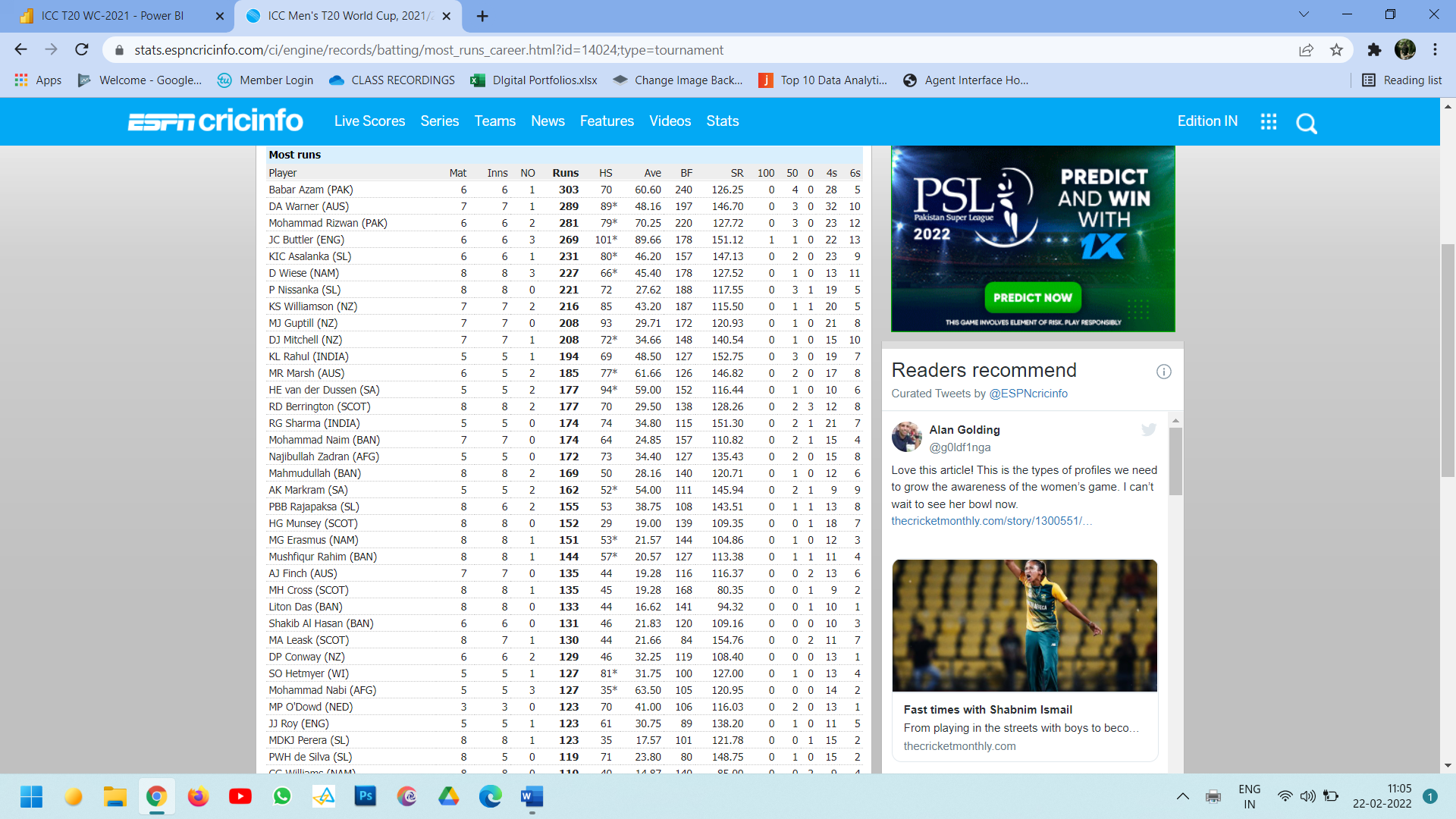


Image [12]

1. Future Scope

It will improve the stats and performance of batsmen. It will also improve the stats and performance of bowlers. It will also improve performance of fielders. It will also help to prepare for their opponent. It will also help to know about their strength and their weak point. The best solution is to prepare self for problem that were faced during their matches. **Reduces Overfitting:** Less redundant data means less opportunity to make decisions based on noise. **Improves Accuracy**: Less misleading data means modelling accuracy improves. **Reduces Training Time**: fewer data points reduce algorithm complexity and algorithms train faster.

In future we also want to this project continue regarding the predictive analysis using AI and Machine learning. We also want to collect the data regarding the bowler’s performance in their matches. It will be very helpful to teams to prepare themselves regarding that specific player.

There were some limitations associated with this study; however, generally, these limitations lead to important future directions. The data described here is exploratory in nature, and outcomes were based on effect size, goodness-of-fit, and most theoretically interpretable.

Furthermore, it may be possible that a more fine-tuned assessment of oculomotor behaviour is necessary to capture the sensory and motor components of batting and bowling. For example, a more in-depth analysis of smooth pursuit velocities and gaze error given a target position to name a few. This work demonstrated clearly that visual ability influences motor performance in interceptive tasks such as baseball and cricket. High-performing athletes demonstrate that both heredity and environmental conditions contribute to success. This recent work indicates that there are both functional and training differences that influence motor performance success. Further research is necessary to determine what training strategies can facilitate batting success and to fully understand the relationships between the sensory and motor components of cricket performance. The goal of training should be to limit the required reaction time for success by training to enhance the sensory components of the batting and bowling process

11. Conclusion

It provides the hitting ability of a batsmen. It provides the strike rotation of a batsmen. It provides accuracy regarding the stats of a batsmen. It provides the hitting area of a batsmen i.e.; in which area he hits the ball for four/six mostly. It provides the data about all our performance of a team throughout the tournament.

The aims of this study were to examine the relationship between eye movement patterns and batting performance in cricket. The results demonstrated that several oculomotor eye-tracking measures were good predictors of batting and bowling performance in cricket. Additional research is needed to provide a more thorough understanding of the relationship between oculomotor function and performance and develop effective training methods that improve these swing qualities, which are indicative of skill level and success rates.

Appendix A Project Code

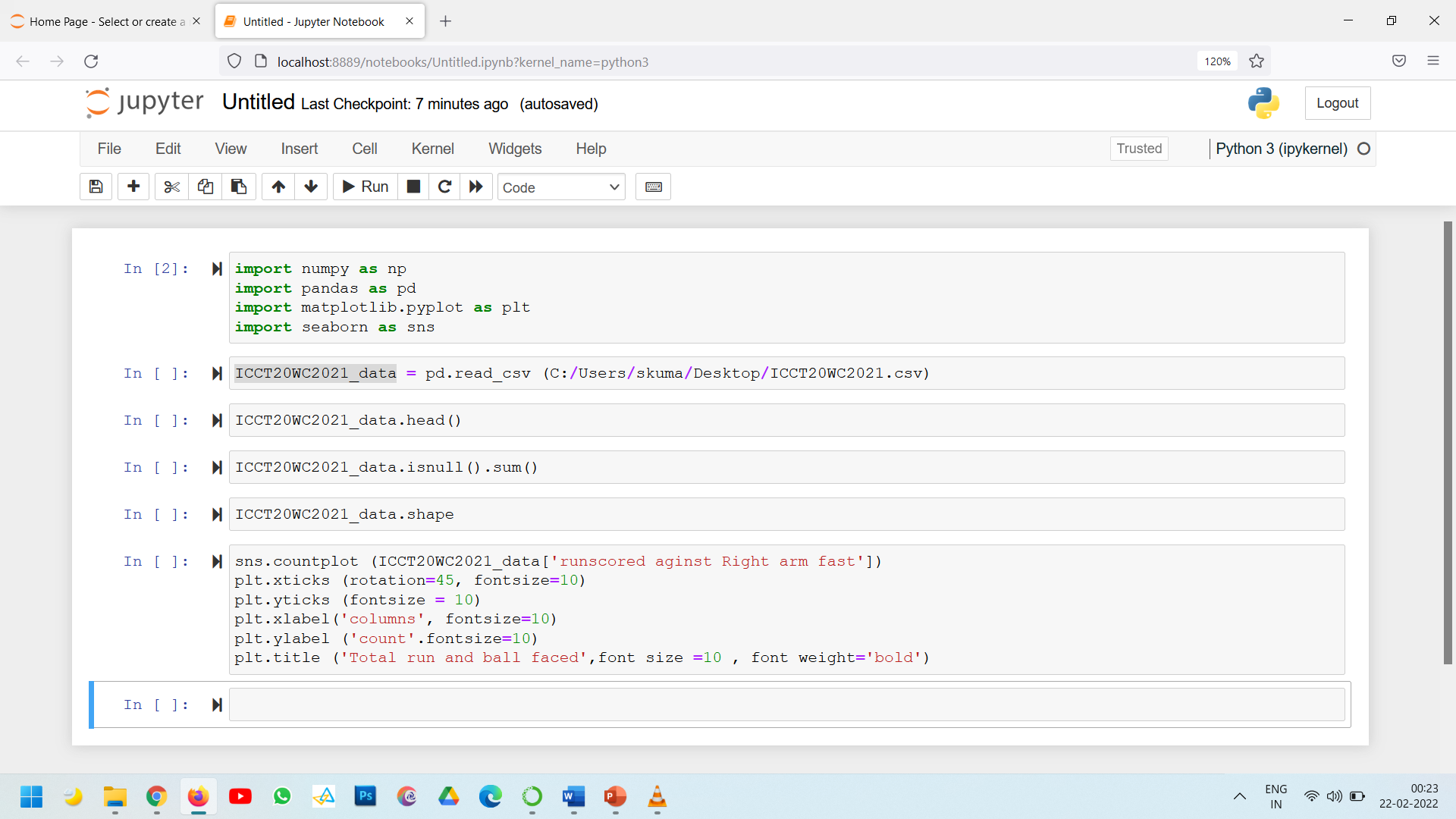


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Appendix B Screenshot of Project

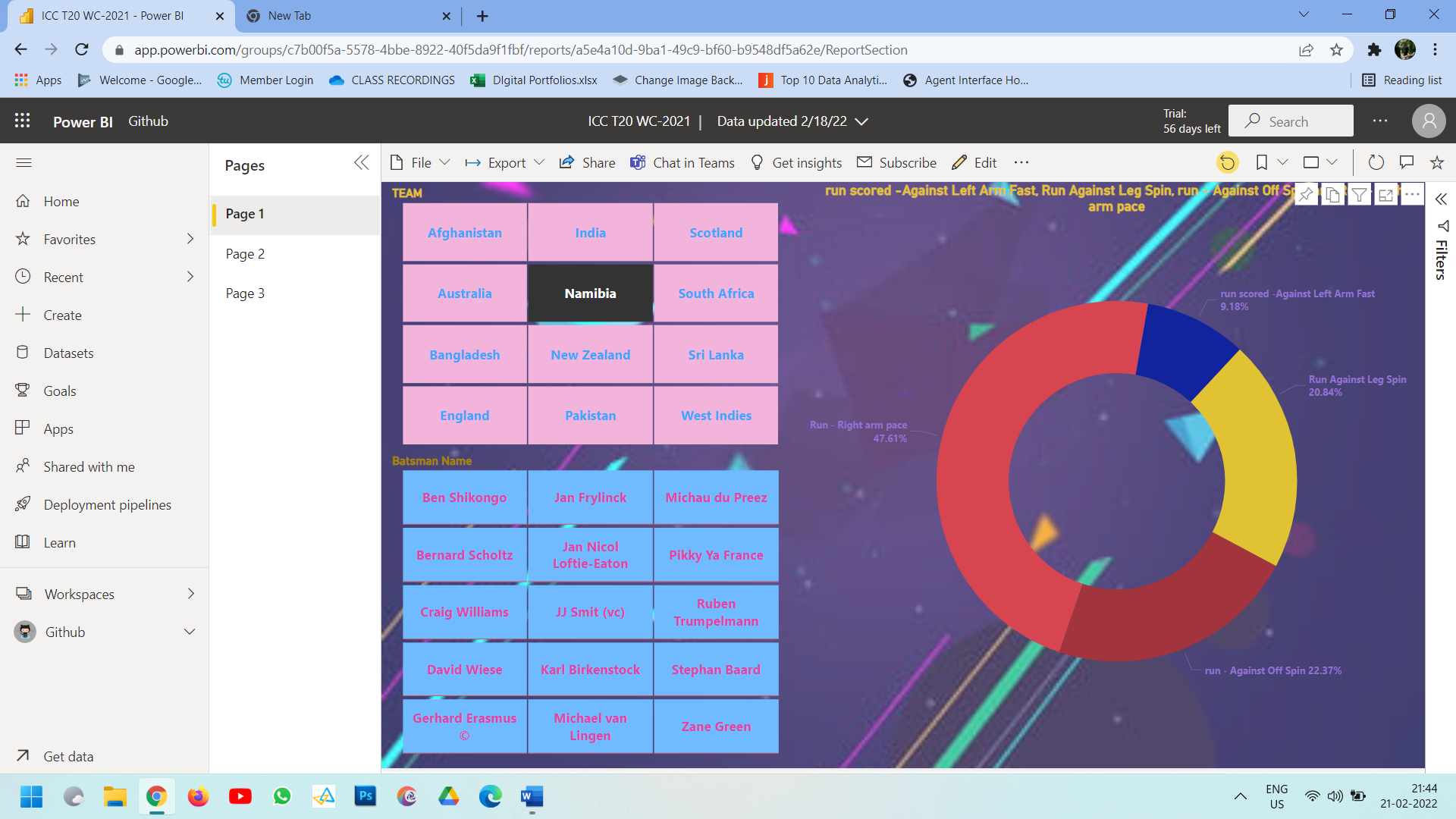


Image:14 Data visualization of run scored against each kind of bowlers

Reference [: https://app.powerbi.com/groups/c7b00f5a-5578-4bbe-8922-40f5da9f1fbf/reports/a5e4a10d-9ba1-49c9-bf60-b9548df5a62e/ReportSection](:%20https://app.powerbi.com/groups/c7b00f5a-5578-4bbe-8922-40f5da9f1fbf/reports/a5e4a10d-9ba1-49c9-bf60-b9548df5a62e/ReportSection%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20)

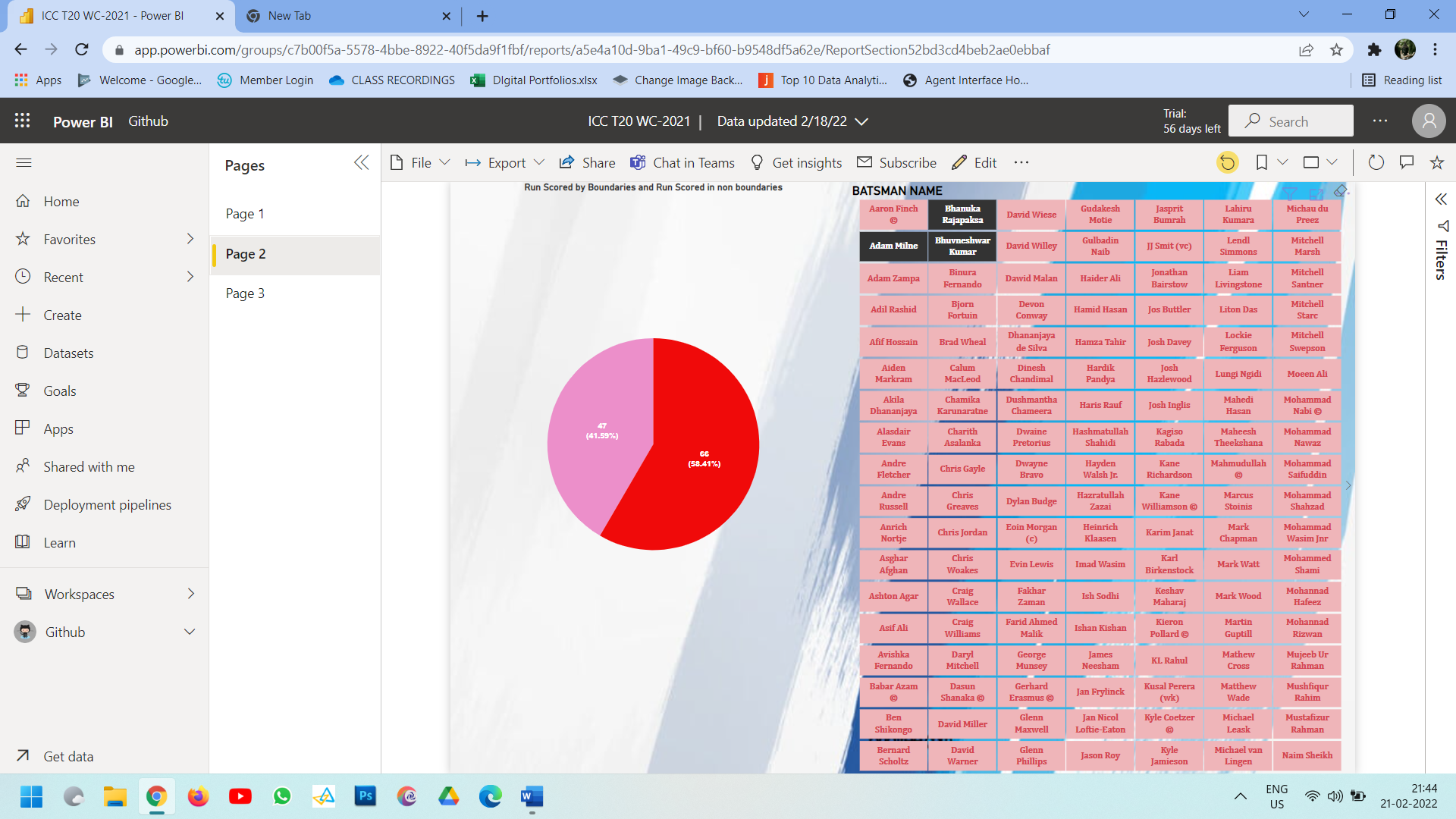


Image:15 Data visualization of run scored against fast and spin bowlers

Reference <https://app.powerbi.com/groups/c7b00f5a-5578-4bbe-8922-40f5da9f1fbf/reports/a5e4a10d-9ba1-49c9-bf60-b9548df5a62e/ReportSection52bd3cd4beb2ae0ebbaf>

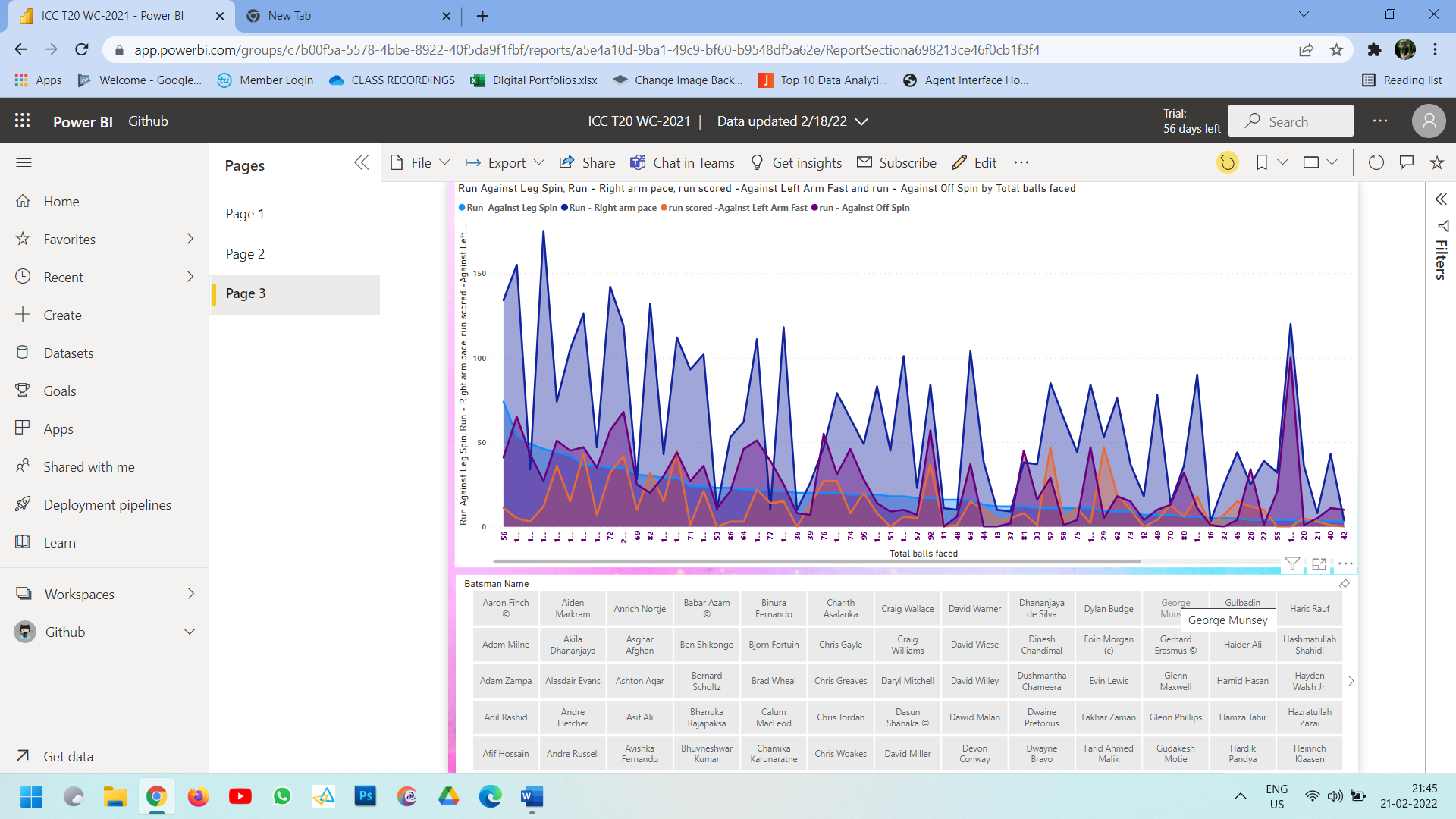


Image:16 Data visualization of run scored and ball faced

Reference <https://app.powerbi.com/groups/c7b00f5a-5578-4bbe-8922-40f5da9f1fbf/reports/a5e4a10d-9ba1-49c9-bf60-b9548df5a62e/ReportSectiona698213ce46f0cb1f3f4>:

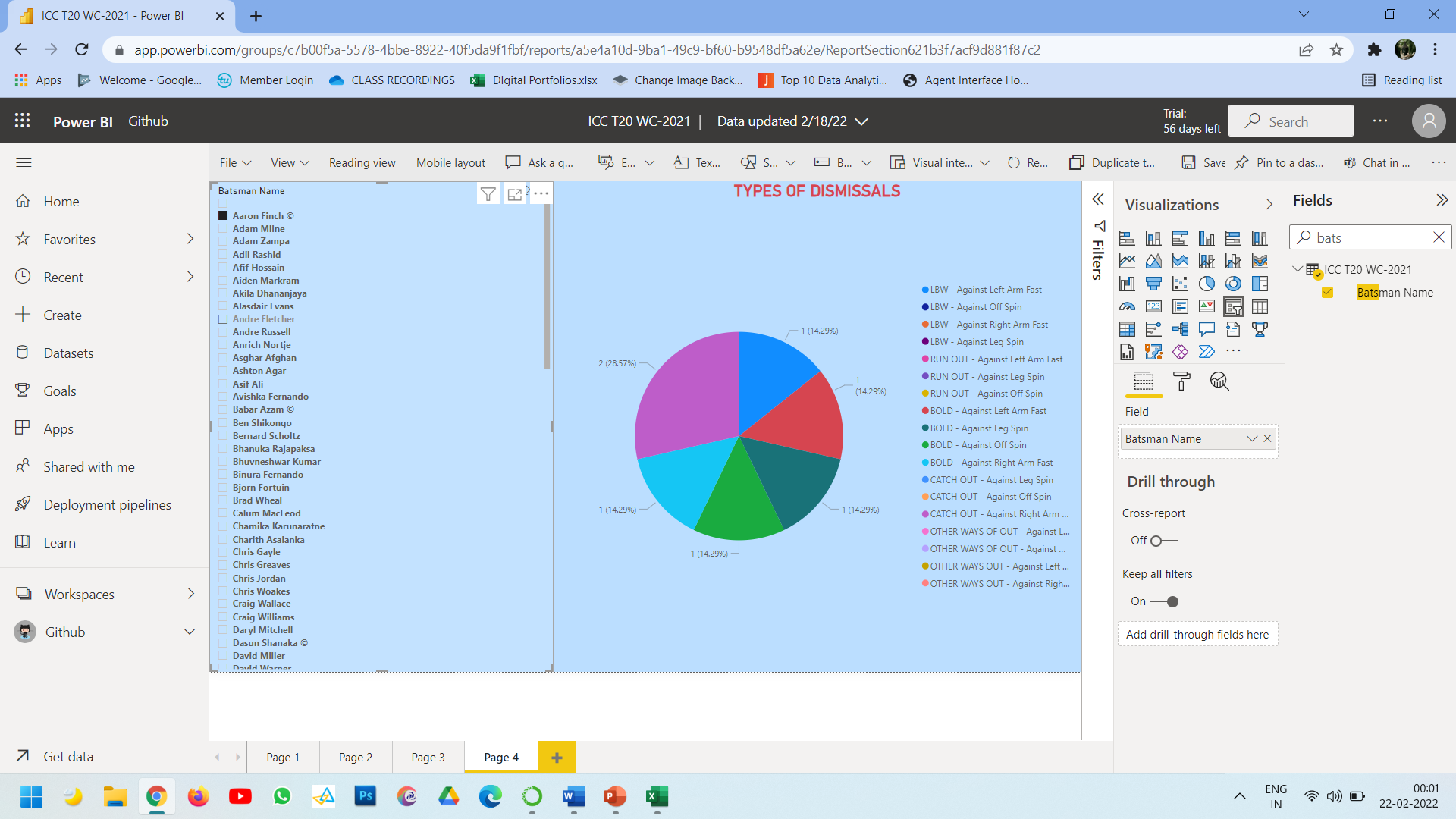


Image:17 Data visualization of run scored and ball faced

Reference <https://app.powerbi.com/groups/c7b00f5a-5578-4bbe-8922-40f5da9f1fbf/reports/a5e4a10d-9ba1-49c9-bf60-b9548df5a62e/ReportSection621b3f7acf9d881f87c2>

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2. [Cric Buzz](https://www.cricbuzz.com/cricket-series/2798/icc-mens-t20-world-cup-2021/matches)
3. [ESPN CRICINFO](https://www.espncricinfo.com)
4. [You Tube](https://www.youtube.com/)
5. [Power BI](https://www.microsoft.com/en-us/download/details.aspx?id=58494)