Universiti Kuala Lumpur
Where Knowledge is Applied

ASSESSMENT COVERSHEET
(STUDENTS: Fill in all sections)

Attach this coversheet as the cover for your submission. All sections need to be completed.
For online submission, attached this document as pdf or in MS Words.

Section A: Submission Details

Programme	:	BACHELOR IN INFORMATION TECHNOLOGY (HONOURS) (INTERNET OF THINGS)
Course Code & Name	:	IIB40303 - PROGRAMMING FOR DATA ANALYTIC
Course Lecturer(s)	:	Megat Norulazmi
Type of Submission	:	Group Project
Penalties	:	• 5% will be deducted per day to a maximum of four (4) working days, after which the submission will **not** be accepted. • Plagiarised work is an Academic Offence in University Rules & Regulations and will be penalised accordingly.

Section B: Academic Integrity

Tick (√) each box below if you agree:

√	I/You have read and understood the UniKLs' policy on Plagiarism in University Rules & Regulations.
√	This assignment is own work, unless indicated with proper referencing.
√	This assignment not submitted and not published previously.
√	This submission follows the requirements stated in the course.

Section C: Submission Receipt

Office Receipt of Submission

Date & Time of Submission (by student)	Student Name(s) (by student)	Student ID(s) (by student)
24/12/2025	Muhammad Aqma Farhan bin Zahanizam	52224223028
	Muhammad Syahmil Izat bin Abdul Razak	52224223063

- -

Student Receipt of Submission

This is your submission receipt, the only accepted evidence that you have submitted your work. Cut along the dotted lines above & retain this for **your record**.

Date & Time of Submission (Written)	Course Code	Submission Title	Student ID(s) & Signature(s)

Gaming Hours vs Academic & Work Performance Data Analysis

1. Introduction

With the rapid growth of digital entertainment, gaming has become a common activity among students and working adults. While gaming can provide relaxation and cognitive benefits, excessive gaming may negatively impact productivity, focus, and academic or work performance.

This project aims to perform an end-to-end data analysis on a gaming behavior dataset to understand how gaming hours, sleep, stress, and focus levels influence academic or work performance. The analysis follows a structured data analytics workflow, including data cleaning, exploratory data analysis (EDA), visualization, and insight generation.

2. Objective of the Study

The objectives of this project are:

1. To analyze gaming habits among individuals.
2. To study the relationship between gaming hours and academic or work performance.
3. To identify how sleep, stress, and focus levels affect performance.
4. To provide actionable insights that can help individuals maintain a healthy balance between gaming and productivity.

3. Dataset Description

The dataset used in this project was obtained from **Kaggle** and contains **1,000 records** representing different users.

Key Attributes:

- user_id: Unique identifier for each user
- age: Age of the user
- gender: Gender of the user
- occupation: Student or working professional
- game_type: Type of game played
- daily_gaming_hours: Average daily gaming time
- weekly_gaming_hours: Total weekly gaming time
- sleep_hours: Average sleep duration
- stress_level: Self-reported stress level
- focus_level: Ability to concentrate
- academic_or_work_score: Performance score
- productivity_level: Productivity rating
- performance_impact: Overall perceived impact of gaming

The dataset includes both **numerical and categorical variables**, making it suitable for comprehensive data analysis.

4. Tools and Technologies Used

- **Python**
- **Jupyter Notebook**
- **Pandas** – Data manipulation
- **Matplotlib & Seaborn** – Data visualization

- **GitHub** – Project version control
- **YouTube** – Video presentation

5. Data Cleaning and Preprocessing

Before analysis, the dataset was cleaned to ensure accuracy and consistency.

Steps Performed:

- Checked for missing values and duplicates.
- Removed duplicate records.
- Standardized column names to lowercase and underscore format.
- Selected numerical columns for correlation analysis to avoid data type errors.

This step ensured reliable results and prevented issues such as KeyErrors and invalid correlations.

6. Exploratory Data Analysis (EDA)

6.1 Distribution of Gaming Hours

The distribution of daily gaming hours shows that most users spend a **moderate amount of time gaming**, while a smaller portion engage in excessive gaming.

6.2 Academic / Work Performance Distribution

Performance scores follow a near-normal distribution, indicating varied productivity levels across users.

6.3 Gaming Hours vs Performance

A scatter plot revealed that:

- Moderate gaming hours are associated with better performance.
- Excessive gaming hours show a declining trend in performance scores.

7. Correlation Analysis

Correlation analysis was performed using **only numerical variables**.

Key Findings:

- Daily gaming hours have a **negative correlation** with academic/work performance.
- Sleep hours show a **positive correlation** with performance.
- Higher stress levels negatively impact focus and productivity.
- Focus level has a strong positive relationship with performance score.

This indicates that gaming indirectly affects performance through sleep, stress, and focus.

8. Group-Based Analysis

Users were categorized into gaming levels:

- Low (0–2 hours)
- Moderate (2–4 hours)
- High (4–6 hours)
- Very High (>6 hours)

Observation:

- Users in the **Moderate gaming group** achieved the highest average performance scores.

- The **Very High gaming group** showed the lowest performance, highlighting the negative impact of excessive gaming.

9. Actionable Insights

Based on the analysis, the following insights were derived:

1. Moderate gaming (2–4 hours daily) does not negatively impact performance and may help reduce stress.
2. Excessive gaming hours significantly reduce academic or work performance.
3. Adequate sleep improves focus and productivity, even among frequent gamers.
4. High stress levels combined with heavy gaming result in lower performance scores.
5. Time management and balanced gaming habits are crucial for maintaining productivity.

10. Conclusion

This project demonstrates how data analytics can be applied to behavioral datasets to extract meaningful insights. While gaming is not inherently harmful, excessive gaming negatively affects performance, focus, and productivity. By balancing gaming time with adequate sleep and stress management, individuals can maintain healthy performance levels.

The findings from this analysis can be useful for students, educators, employers, and individuals seeking to improve productivity while maintaining recreational activities.

11. Teamwork Contribution

Each group members contributed to different aspects of the project, including data cleaning, analysis, visualization, reporting, and presentation. The collaborative effort ensured comprehensive analysis and high-quality deliverables.

12. Project Links

- **GitHub Repository:** *https://github.com/aqma-rgb/gaming-hours-analysis.git*

- **YouTube Video Presentation:** *https://youtu.be/7oYgsrPJUL4*