



**VAAL UNIVERSITY  
OF TECHNOLOGY**

*Inspiring thought. Shaping talent.*

**DIPLOMA : INFORMATION TECHNOLOGY**

**Subject** : Business Analysis 3 Module 2/ Business Analysis 3.2

**Subject code** : AIBUY3A

**Assessment** : Project

**Date issued** : 13 August 2024

**Lecturer** : Mr. Matsela  
Mr. Matshego

**Examiner** : Mr. Matsela

**External Moderator** : Ms. S Matyila

**Total Marks** : 100

**Due date** : **21 October 2024**

## RULES:

- Group members: You MUST do this project *individually* or *in groups* of between 3 to 10 students (per group).
- Due date: The due date for your project is **21 October 2024 @23h59**.

Submit all your projects documentation together with your presentation BEFORE THE DUE DATE at **Project Documentation Submission** on BLACKBOARD under the Content link.

- Project Management Tool: All the groups MUST have the work on **GitHub** for all the work done. Use **GitHub Project** tool

**Note: ONLY ONE SUBMISSION IS ALLOWED.**

Submissions that are made after 23h59 will not be accepted! You MUST not attempt to make any changes to the submitted documents as they won't be considered. It is YOUR responsibility to make sure you send your documents to the correct LINK. It is a responsibility of each student in a group or individually to make sure that the file they are submitting is a **CORRECT PDF file!**

Please make sure you have backup copies of ALL your documents (lecturer will not entertain stories about laptops being stolen or suddenly not working with all your work, as IT students you are expected to make use of Cloud storages, such as Google Drive etc).

**NO LATE SUBMISSIONS WILL BE ACCEPTED!!!!!!!!!!**

- **Plagiarism:** Plagiarism refers to the appropriation of work or ideas of others.

Plagiarism is both unethical and illegal. VUT places a high premium on its academic standards and subscribes to a value system that requires strict action against plagiarism. Being regarded as a serious contravention of the University's rules, plagiarism can lead to expulsion from the University. Make sure you write and sign a declaration statement in your documents that should clarify that you have submitted your OWN work and referenced where necessary (ALL group members must sign this declaration). **Your project will NOT be marked if this statement doesn't exist in your submissions and if it exist but it hasn't**

**been signed!**

- **Poster:** As part of the presentation you are expected to create a **poster** (in a soft copy format) that sells the idea in your project. Your poster should capture key features of your project and therefore should be straight to the point

Project: this project is based on AI for Business Analysis with python Module as per the syllabus of your subject.

- **Presentation:** each group will be given 20 minutes to present and 5 minutes for questions, please stick to the time allocated. You must be available 30 minutes prior to your presentation. ALL presentations will be done on-campus, ALL students must be available during their allocated time, which will NOT be negotiable. ***First Opportunity presentations will be on the 28 - 30 October 2024.*** Each group will be allocated their specific times and only have to be present during that time.

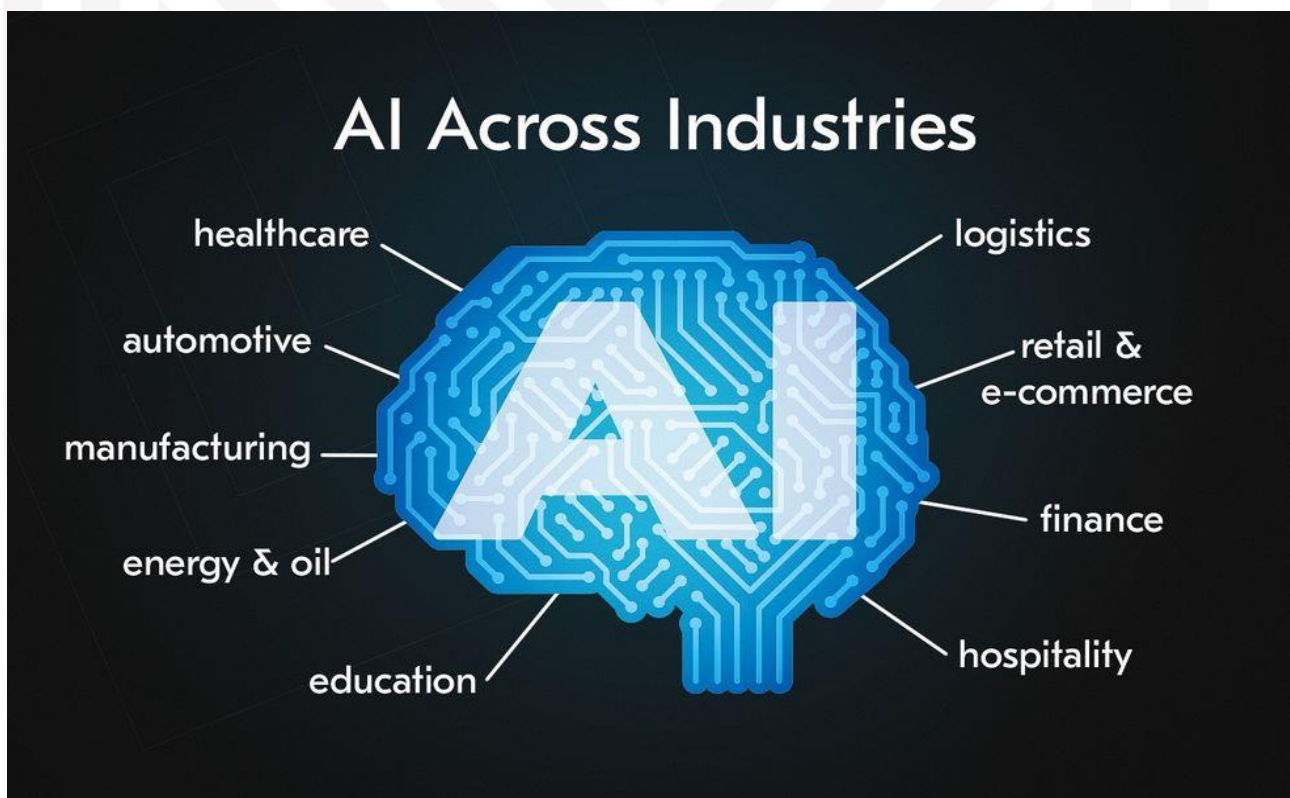
- **Other:** You are allowed to discuss the problems set for the project with fellow students from the other groups. However, each group should produce their own unique solution to the problem. Which therefore means that although you can explain a solution to a fellow student, you must not give him or her access to your solution. If two or more groups submit the same project, all students in those groups will receive zero, and your lecturers will not even enter into any discussion about who did the original work. Your document must be professionally typed with minimal grammatic errors (as an IT student you should be able to use freely available software's such as **Grammarly** to assist you with writing a professional document). With your project, provide a Grammarly certificate or results. Your project documents must be written using Arial font size 12, line spacing 1.5 and text should be justified.

## PROJECT OUTLINE

In our days, technology has advanced, however Developing and under Developed Countries are still lagging behind. The commonly used terminology of fourth industrial revolution (4IR) is widely used by influencers and politicians but people on the ground are not benefiting to a certain degree on the usage of technology in relation to 4IR. The purpose of this project is to unleash the power of 4IR, through Artificial Intelligence in relation to Business Analysis.

*“Modern businesses benefit from AI in industry operations in a variety of ways. From automating IT and business to enhancing customer service and addressing talent shortage issues, the tech-driven landscape offers endless opportunities for cost-efficient growth.”*

The **Theme** for the Project is: **“an AI Solution for Industries.”**



As per the Theme, each group must develop an AI Solution using Python, that would benefit a company in Industry sector of their choice.

An example of a problem in a business may be crime (**DO NOT USE THIS EXAMPLE FOR YOUR PROJECT**), and you may want to create an AI Solution to the problem. Your Solution, may include usage of drones, use of image progressing, facial recognition, etc.

It is important for each group to think carefully of their Solution and make sure it is associated to the Theme!!

You must first provide a detailed explanation of not more than one paragraph explaining the extent to which your solution is relevant to the Theme (some sort of background to the AI solution that you are suggesting or describe the solution you want to introduce).

You must then identify the problem that leads to your proposed solution and write it under problem definition sub-title in NO MORE than 250 words (be precise and clear). In your problem, have a clear answer to these questions: What exactly is the problem (190 words maximum)? How will solving the problem using AI benefit local municipality (in case of a community)?

After Identifying the problem, you must clarify the main objective of your AI Solution.

Provide details of how you are planning to apply AI in solving the problem, use the rubric as a guide at trying to solve the problem.

LIST OF MEMBERS		
1.	2.	
3.	4.	
5.	6.	
7.	8.	
9.	10.	
Total Marks = 100		Final Mark =
AI Solution - DOCUMENTATION ASPECT:		
SOLUTION <i>(very important to note marks, will be deducted, if the format isn't as per the requirements, Grammarly report haven't been included in the document, students seem to</i>	EXAMINER	MODERATOR

<i>struggle to explain each section, although all the information exist)</i>			
<b>AI Solution:</b> The AI Solution is relevant to the theme as well as the environment as explained in the brief.	5		
<b>Business objectives:</b> business objectives, business success criteria and business background clearly articulated. Requirements, constraints and risks are well defined. An initial assessment of Tools and Techniques used to solve the problem are clearly articulated.	25		
<b>Problem definition:</b> The problem definition is factual, achievable, clearly articulated, relevant to the theme. Answers to questions: What is the problem? How relevant it is to the theme? How beneficial it will be in solving the problem? Can be easily found when one read the problem definition.	10		
<b>Poster:</b> an overview of the entire project has been nicely articulated, when one reads the poster	10		
<b>Sub-Total</b>	<b>50</b>		

### AI Solution - THEORETICAL ASPECT:

**(demonstration of all concepts listed below have been well thought of on its totality in relation to the theme as well as the solution).**

<b>Machine Learning Approach:</b> relevant to the solution, well-planned, appropriate set of algorithms.	5		
<b>Data:</b> evidence that data relevant to the solution has been clearly articulated. An example of all forms of data that are relevant to the solution is accurate.	5		
<b>Model:</b> It is clear how the AI Model that is developed will be evaluated for accuracy.  <b>Time Series Analysis on Data:</b> a Sample/description of this analysis exist and appropriate.	10		



<b>Solution Techniques:</b> Appropriate techniques onto finding a solution and how will the AI Model improve its accuracy are clearly defined and are relevant to the solution.	5		
<b>Natural Language Processing, Speech Recognition or Speech Synthesis:</b> Relevant to the theme as well as the proposed solution; and achievable	5		
<b>Deep Learning:</b> ALL techniques (including applications that are relevant to deep learning exist and appropriate).	5		
<b>Other Features: (Chatbot/Softbot)</b> Is this feature relevant to the solution, well-planned and appropriately setup.	5		
<b>Sub-Total</b>	<b>40</b>		
<b>AI Solution (PRACTICAL)</b>			
Practical Solution is relevant to the THEME.	10		
<b>Sub-Total</b>	<b>10</b>		
<b>SIGNATURE</b>			