UJIAN AKHIR: KECERDASAN BUATAN (MTI1033)

FINAL EXAM: ARTIFICIAL INTELLIGENCE (MTI033)

CPMK 1033.03

Mahasiswa mampu menemukan permasalahan pada suatu sistem terintegrasi dan merancang AI yang tepat untuk memperbaiki performansi dan atau menyelesaikan permasalahan pada suatu sistem terintegrasi.

CPMK1033.03

Students are able to find problems in an integrated system and design appropriate AI to improve performance and/or solve problems in an integrated system

# Nama mahasiswa:

# Student name:

## Instruksi dan pedoman (Baca dengan seksama)

### Instruksi

1. Tuliskan hasil laporan Anda sesuai dengan struktur yang ada pada format tugas besar pada file ini
2. File laporan disimpan pada file PDF. Format lainnya tidak diijinkan.
3. Di bagian akhir laporan, Anda diminta untuk memberikan link file presentasi dan link rekaman presentasi
4. Jangan menghapus deklarasi plagiasi.

HARAP DICATAT: Segala bentuk plagiasi akan diinvestigasi sesuai dengan syarat dan ketentuan yang berlaku

PEMBERITAHUAN PENTING: Harap pastikan bahwa Anda telah memeriksa tanggal jatuh tempo untuk tugas ini pada situs kuliah

## Instructions and guidelines (Read carefully)

### Instructions

1. Create a report based on the structure contained in this file.
2. Submit your assignment in **PDF only**. No other file types will be accepted. Avoid obfuscating plagiarism declarations.
3. At the end of the report, you are asked to provide a link to the presentation file and the link to the presentation recording.
4. Do **not delete the plagiarism declaration** or the **assignment instructions and guidelines**. They must remain in your assignment when you submit.

PLEASE NOTE: **Plagiarism cases will be investigated in line with the terms and conditions for participants.**

IMPORTANT NOTICE: Please ensure that you have checked the for the due date for this assignment in Learning Management System (LMS)

### Petunjuk

1. Temukan permasalahan pada suatu sistem terinetgrasi yang terdiri dari Man, Material, Machine, Money, Method, Information, Energy dan Environment atau orang awam menyebutnya perusahaan
2. Berikan suatu usulan bagaimana AI dapat membantu Anda sebagai managerial level dalam menyelesaikan permasalahan tersebut dan atau meningkatkan performansi dari sistem
3. Teknik AI apa yang, dan mengapa teknik AI tersebut perlu diterapkan?
4. Rancanglah suatu framework bagaimana usulan Anda dapat direalisasikan?
5. Analisalah dampak dan resiko yang mungkin muncul atas usulkan penerapan teknik AI yang Anda usulkan?
6. Adalah hal terkait dengan etika yang perlu Anda pertimbangkan?

Tuliskan hasil pekerjaan Anda sendiri. Jangan menyalin dari buku teks, sumber di internet atau sumber lainnya.

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| **Deklarasi Plagiasi:** |
| 1. **Saya menyadari bahwa plagiarisme tidak etis. Plagiarisme adalah tindakan mengakui karya orang lain dan menjadikannya milik sendiri.** 2. **Tugas ini sepenuhnya milik saya sendiri.** 3. **Saya tidak mengizinkan, dan tidak akan mengizinkan, siapa pun untuk menyalin pekerjaan saya untuk dianggap sebagai milik mereka.** 4. **Saya mengakui bahwa menjiplak suatu tugas (atau sebagian dari suatu tugas) adalah tidak etis dan menyatakan bahwa tugas saya sepenuhnya adalah karya saya sendiri.** |

### Guidelines

1. Find problems in an integrated system consisting of Man, Material, Machine, Money, Method, Information, Energy and Environment or what ordinary people call a company

2. Give a suggestion on how AI can help you as a managerial level in solving these problems and/or improving the performance of the system

3. What AI techniques are, and why do they need to be applied?

4. Design a framework for how your proposal can be realized?

5. Analyze the impacts and risks that may arise from the proposed application of the AI ​​techniques that you are proposing?

6. Is there anything related to ethics that you need to consider?

Write down the results of your own work. Do not copy from textbooks, Internet sources or other sources.

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| **Plagiarism declaration:** |
| 1. **I am aware that plagiarism is unethical. Plagiarism is the act of appropriating another's work and passing it off as one's own.** 2. **This assignment is entirely my own.** 3. **I have not permitted, and will not permit, anyone to copy my work in order to pass it off as their own.** 4. **I acknowledge that plagiarizing an assignment (or a portion of an assignment) is unethical and declare that my assignments are entirely my own work.** |

Bagian 1: Temukan permasalahan pada suatu sistem terinetgrasi yang terdiri dari Man, Material, Machine, Money, Method, Information, Energy dan Environment atau orang awam menyebutnya perusahaan

Petunjuk:

Pada bagian ini tugas Anda akan direview berdasarkan :

1.Penjelasan problem yang relevan

Part 1. Find problems in an integrated system consisting of Man, Material, Machine, Money, Method, Information, Energy and Environment or what ordinary people call a company.

Instruction:

In this section your assignment will be reviewed based on:

1. Explanation of relevant problems

Tulis Jawaban Bagian 1 Anda di sini:

Start writing Part 1 here:

PT. Solusi 247 is an Information Communication Technology (ICT) company that has been focused on delivering Big Data Solution from 2000. The solution provided at early date start with offering service to implement existing solution. As open-source technology become Available, PT. Solusi 247 starting to create their own big data ecosystem solution that nowadays Has been proven in a wide range of clients including telecommunication, governance, banking, Private company, medical, and so on.

One of the in-house solutions offered is software for Big Data Analytics called HGrid247 AN. Hgrid247 AN is a software that build on top of Big Data Platform for Machine Learning Application with drag-and-drop interface and utilize the power of parallel processing, thus Robust for Big Data Analysis. HGrid247 AN has in total 6 developer from Product Owner, Jr. Product Owner, Full stack Engineer, Backend Engineer, and System Admin. This software firstly released in 2017 and has been used in several client ranging from private company and several governances.

Hgrid247 AN has been struggled with obtaining business requirement. There are several factors in creating this situation including the dependency on PT. Solusi 247 Big Data environment, closed source development, ineffective workshop, training, and demo activities. On the other hand, only two developer that actively deliver development task which often cannot be focused on development since they have to also dealt with random agenda. Therefore, Hgrid247 AN team need to focus on what really matter for user by enforcing team ability to better recognize relevant business requirement.

Bagian 2 Berikan suatu usulan bagaimana AI dapat membantu Anda sebagai managerial level dalam menyelesaikan permasalahan tersebut dan atau meningkatkan performansi dari sistem Petunjuk:

Pada bagian ini tugas Anda akan ditinjau berdasarkan:

1.Kemampuan untuk menjelaskan usulan yang relevan permasalahan dengan permasalahan yang ditemukan

Part 2 Provide a suggestion on how AI can help you as a managerial level in solving these problems and/or improving system performance Instruction:

In this section your assignment will be reviewed based on:

1.Ability to explain proposals that are relevant to the problems found)

Tulis Jawaban Bagian 2 Anda di sini:

Start writing Part 2 here:

Given the context of problem statement, several activities can be performed including

1. Creating an SOP for obtaining business requirement when several events are at hand (workshop, demo, project, and training)
2. Creating questionnaire for data scientist team that constantly engaged in Big Data Project and client who constantly use Hgrid247 AN in day-to-day task

Unfortunately, this process is difficult to maintained since there are less concern from stakeholders that mainly caused by their busy activities. Given the problem, AI can be used to help development team to obtain business requirement, especially towards Hgrid247 AN as low code tools for data analysis machine learning application.

Bagian 3 Teknik AI apa yang, dan mengapa teknik AI tersebut perlu diterapkan?

Petunjuk:

Pada bagian ini tugas Anda akan direview berdasarkan :

1. Kemampuan untuk memilih Teknik AI yang relevan dengan permasalahan yang akan diselesaikan

Section 3 What AI techniques are, and why do they need to be applied?Instruction:

In this section your assignment will be reviewed based on:

1. Ability to choose AI techniques that are relevant to the problem to be solved

Tulis Jawaban Bagian 3 Anda di sini:

Start writing Part 3 here:**4**

This project will use Natural Language Processing (NLP). NLP is being used to analyse data from accumulation of job vacancy descriptions which is believed to contain many important and up-to-date requirement for Hgrid247 AN. NLP is being used in relatively simple manner using word cloud and pie chart based on user defined dictionary. The dictionary formed with the help of Chat GPT 4 to find all possible word related to machine learning, database, and cloud currently available.

**Assignment**

Bagian 4 Rancanglah suatu framework bagaimana usulan Anda dapat direalisasikan?

Petunjuk:

Pada bagian ini tugas Anda akan direview berdasarkan :

1. Kemampuan untuk merancang suatu framework bagaimaan AI bisa diaplikasikan untuk menyelesaikan permasalahan yang ditemukan

Part 4: Design a framework for how your proposal can be realized?

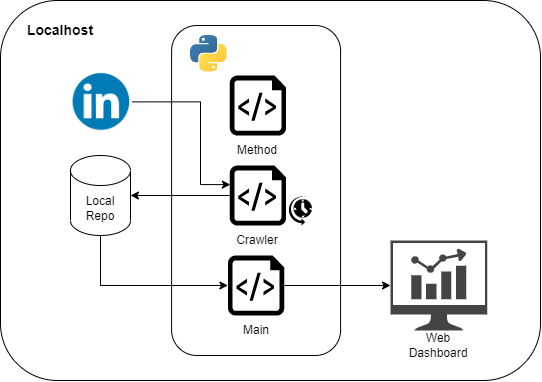
Guideline:

Your assignment will be reviewed based on:

1 . Ability to design a framework for how AI can be applied to solve problems found

Tulis Jawaban Bagian 4 Anda di sini:

Start writing Part 4 here:



Bagian 5 Analisalah dampak dan resiko yang mungkin muncul atas usulkan penerapan teknik AI yang Anda usulkan?

Petunjuk:

Pada bagian ini tugas Anda akan direview berdasarkan :

1. Analisis komprehensif terkait dengan dampak dan penerapan resiko terhadap penerapan AI yang diusulkan

Part 5 Analyze the impacts and risks that may arise from the proposed application of the AI ​​techniques that you are proposing?Guideline:

Your assignment will be reviewed based on:

1. Comprehensive analysis regarding the impact and implementation risks of the proposed AI application

Tulis Jawaban Bagian 5 Anda di sini:

Start writing Part 5 here:

Bagian 6 Adakah hal terkait dengan etika yang perlu Anda pertimbangkan?

Petunjuk:

Pada bagian ini tugas Anda akan direview berdasarkan :

1. Kemampuan untuk menjelaskan mengenai hal terkait dengan etika yang perlu dipertimbangkan dalam mengaplikasikan AI yang diusulkan

Part 6: Is there anything related to ethics that you need to consider?

Guideline:

Your assignment will be reviewed based on:

1. Ability to explain ethical matters that need to be considered in applying the proposed AI

Tulis Jawaban Bagian 6 Anda di sini:

Start writing Part 6 here:

**Link File Presentasi:**

**Link Presentation File:**

**Link File Rekaman:**

**Link Recording File:**