

# Risk Management Plan

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## Project Title:

*YANKA – AI-Powered Multilingual Educational Assistant*

## Team Members:

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- *Advikaa Kapil*
- *Gursparsh Singh Sodhi*
- *Ang Li*
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## Product Owner:

- *Yannick Nkayilu Salomon*
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## Introduction

### Overview of the Project:

The goal of this project is to make a multilingual education assistant powered by AI that can make learning more accessible for students in underserved communities through various features such as interactive lessons, voice interaction, and gamified learning.

**Importance of Risk Management:** Risk management is crucial for the success of our project as it helps identify, analyze, and mitigate potential risks that could impede progress. By proactively addressing these risks, we can ensure smoother execution, maintain project timelines, and achieve our desired outcomes.

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## Risk Identification and Assessment

### Technical Risks:

1. **Risk:** *Poor performance from AI for less used languages*
  - o **Likelihood:** *[High]*
  - o **Impact:** *[High]*
  - o **Assessment:** *Since our project is geared towards underserved communities, the languages they speak might not be as represented on the internet as other, more popular languages. As most LLM models learn off of the internet, it is very likely*

*they would not be able to translate to said language well. Since we'll need to present the lessons in the languages of the locals, and they might not speak more popular languages like English, this can prove to be a large barrier in their learning experience.*

2. **Risk:** *Poor performance in low connectivity environments*

- o **Likelihood:** *[High]*
- o **Impact:** *[High]*
- o **Assessment:** *Similar to the previous risk, we again need to consider that we are developing for underserved communities, who very likely don't have good internet connection, if they have access at all. The impacts would be very high, as modern applications hinge on high speed connectivity and that influences all aspects of the application. Users could experience lag or even failure in all features of the application*

**External Risks:**

1. **Risk:** *Biased responses toward users*

- o **Likelihood:** *[Medium]*
- o **Impact:** *[High]*
- o **Assessment:** *Coming into play for the third time now, the amount of data available with respect to the population we are trying to serve is limited. Thus, there is a chance that the data could be very biased, and, in the worst case, include cultural stereotypes that are negative to the users of the application, which would provide a very upsetting experience. As we are unsure how likely it is to happen, it is stated at medium likelihood, since that is still a reasonable assumption.*

2. **Risk:** *Misuse of student data*

- o **Likelihood:** *[Low]*
- o **Impact:** *[High]*
- o **Assessment:** *Since modern cyber security measures are quite developed and can be readily applied to any projects, it is not likely for attacks such as a data breach to occur. However, that is still a possibility, and if any sensitive information falls into the wrong hands, a lot of harmful actions can be done to any student whose information was leaked*

**Organizational Risks:**

1. **Risk:** *Misinformation in AI created content*

- o **Likelihood:** *[Medium]*
- o **Impact:** *[High]*
- o **Assessment:** *While AI models have gotten a lot more accurate, it can't be guaranteed to give accurate answers each time if it runs unchecked. If an AI doesn't know the answer or right explanation to a question, it's not likely to inform the user. Having this possibility may cause the organization to lose credibility in the future*

2. **Risk:** *Failure to comply with privacy regulations*

- o **Likelihood:** *[Medium]*
- o **Impact:** *[High]*
- o **Assessment:** *Since this is a global project, there may be users from many different countries, who may have different regulations on user privacy. While navigating all of these regulations, there is a chance to miss one or two, but the repercussions of that would be enormous on the organization, including court action in the worst case*

### **Project Management Risks:**

1. **Risk:** *Scope creep and bad prioritization*
  - o **Likelihood:** *[Medium]*
  - o **Impact:** *[Medium]*
  - o **Assessment:** *This project has many ambitious features, and it's likely that the group may try to tackle too many at once, leading to all of them being completed, but none of them performing at a high level, or some of them having bugs that get discovered during usage*
2. **Risk:** *Time zone differences*
  - o **Likelihood:** *[High]*
  - o **Impact:** *[Low]*
  - o **Assessment:** *Since the project team and owner are in different time zones, it may be hard to meet with them and report progress on the project. However, as the project is still quite detailed, there should be no major impacts of that as long as the team is able to stay on schedule and readily clarify misunderstandings with the owner*

### **Team Risks:**

1. **Risk:** *Low amount of available meeting times*
    - o **Likelihood:** *[High]*
    - o **Impact:** *[Medium]*
    - o **Assessment:** *The project members all have demanding schedules, so it is hard for us to find a good time that we're all available in. However, with a good outline and planning as well as asynchronous communication, the impact should not be large*
  2. **Risk:** *Lack expertise in project area*
    - o **Likelihood:** *[Medium]*
    - o **Impact:** *[Low]*
    - o **Assessment:** *While project members have all performed well in their classes, some aspects of this projects are not taught in the coursework provided by the university, so members may have to learn and expand their expertise outside of their existing knowledge, but it should not be a terribly hard task for students at a senior level*
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## Risk Management Strategies

### Technical Risks:

1. **Risk:** *Poor performance from AI for less used languages*
  - o **Strategy:** *[Mitigate]*
  - o **Justification:** *While we can't make the AI better at performing on the less used languages, we can first supply the software to a small set of users, and deploy quick prototypes so we can get feedback from them. Then we can address the feedback and make the model less likely to malperform for the actual release*
2. **Risk:** *Poor performance in low connectivity environments*
  - o **Strategy:** *[Redesign]*
  - o **Justification:** *Since we can't get rid of this issue and simply provide more internet for the users, we'll have to redesign the application to work mostly offline, with limited functions that require synching to the web, and for the functions that do need internet access, we'll have to work to reduce the amount of time and connectivity they need*

### External Risks:

1. **Risk:** *Biased responses toward users*
  - o **Strategy:** *[Mitigate]*
  - o **Justification:** *Similar to having poor performance on less used languages, we can work with locals to get a quick prototype running first, and incorporate feedback from a set of test users before the actual release. Given that we can incorporate their feedback fast enough and well enough, we should be able to reduce the likelihood of bad responses from the AI by release time*
2. **Risk:** *Misuse of student data*
  - o **Strategy:** *[Mitigate]*
  - o **Justification:** *We can mitigate this issue two fold. On one end, we'll incorporate as many data protection measures as possible that are robust so as to protect the users' data, and then we'll also reduce the amount of data we keep from the user so that we won't be able to accidentally leak too much data. Given that we do both to an appropriate extent, this should make the issue very unlikely to happen*

### Organizational Risks:

1. **Risk:** *Misinformation in AI created content*
  - o **Strategy:** *[Largest Impact First]*
  - o **Justification:** *Since we can't stop AI from having a chance of misinformation, and we can't just redesign AI, we'll have to tackle this problem one step at a time. For that, the best thing to do is to first have the lessons reviewed by a human, to make sure that's at least accurate, and then to increase the credibility of other areas gradually.*
2. **Risk:** *Failure to comply with privacy regulations*
  - o **Strategy:** *[Mitigate]*

- **Justification:** *We can't eliminate the chance of this happening, and doing something on the software side isn't going to prevent it from happening either. The best we can do is decrease the chance of this happening by seeking legal counsel in the countries where users are based and have them double check that every aspect of the application is compliant to the regulations held*

### **Project Management Risks:**

1. **Risk:** *Scope creep and bad prioritization*
  - **Strategy:** *[Mitigate]*
  - **Justification:** *As the owner said that they would like all of the features to be implemented, we cannot just avoid those that have lower priority. We can, however, plan properly with agile and scrum to spread out the tasks in a planned fashion, and ensure that we at least can get an MVP running by the end of the timeline, so that no features would be terribly broken, and all would at least operate at a passable level*
2. **Risk:** *Time zone differences*
  - **Strategy:** *[Mitigate]*
  - **Justification:** *We'll still have to meet, and we can't ask the owner to change time zone, so the best we can do is to ensure that we communicate as much as possible asynchronously, and have quality questions prepared at each meeting we have so that we can get the most out of it in a short time. In addition it'll also be vital to schedule meetings ahead of time and make sure everyone can make it*

### **Team Risks:**

1. **Risk:** *Low amount of available meeting times*
    - **Strategy:** *[Mitigate]*
    - **Justification:** *Similar to meeting with the product owner, we can't just ask team members to change course schedules. So again we'll have to do our best to communicate asynchronously, and make the most out of our synchronous meetings*
  2. **Risk:** *Lack expertise in project area*
    - **Strategy:** *[Largest Impact First]*
    - **Justification:** *If a technology is needed for the project, we can't just not use it, and we can't change the expertise of our project members either. So the best thing is to focus on the most difficult and important concepts first, and in the worst case cut down on learning concepts related to less important features and make them minimally viable. This way the important features of our product will still be operational, and less important features should still be operable, even if not at the best performance*
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## Conclusion

**Assessing the Effectiveness of the Plan:** To assess the effectiveness of this risk management plan, we will:

*To assess the effectiveness of this plan, we could conduct periodic meetings to check how the risk management strategies have been working on dealing with the risks identified, adjust levels as we deal with more of them, and change plans as needed if we see that they are failing to manage the risk. Additionally, we can also add any new risks found during those meetings, to ensure that the management strategy is robust and covers all potential areas of risk in the project. We could additionally consult experts and request user feedback to get external opinion on how well these risks are being managed.*