**Computer Science Capstone Topic Approval Form**

**INFORM INSTRUCTOR:**

Potential use of proprietary company information: No. According to the dataset to be used on Kaggle.com, the data set is public domain.

**ANALYSIS:**

1. **Project topic and description**:

The capstone project is a basic application of Educational Data Mining and Learning Analytics, interrelated fields of study that involve analyzing data to understand and enhance learning and educational outcomes. Employing machine learning, the project will identify key patterns and trends in relevant student data and predict achievement scores based on historical academic performance.

**Scenario**

MindShift Solution Expert (MSE) is a consulting firm specializing in educational solutions. The client, a high school, has partnered with MSE to provide solutions that will aid in addressing the school's academic initiatives.

**Client**

The client is a high school that is focused on optimizing student academic achievement. The school is determined to be proactive in adopting data-driven solutions that can preemptively identify and address educational challenges, ensuring improved academic performance in the future.

**Organizational Needs**

Recognizing that leveraging data-driven insights is an impactful approach, MSE has decided to create an application that analyzes educational data and predicts academic achievement. Thus, MSE needs to create an application that employs machine learning to process relevant data (i.e. historical grades, parental education levels, etc.), identify critical trends that impact student performance, and predict future student achievement. Such a tool aligns with the school's focus on optimizing academic achievement among all students.

1. **Project purpose and goals:**

The purpose of this project is to develop an application to process and analyze student data in a manner that empowers educators to optimize student achievement.

The goal is to employ machine learning to give insight into critical trends that impact student achievement and predict student achievement based on the data.

1. **Descriptive method:**

**ANALYSIS(Continued):**

1. **Predictive or prescriptive method:**

**DESIGN and DEVELOPMENT:**

1. **Computer science application type (select one):**

* Web

1. **Programming/development language(s) you will use:**

* Python
* Flask
* HTML
* CSS

1. **Programming/development language(s) you will use:**

* Windows

1. **Database Management System you will use:**
2. **Estimated number of hours for the following:**
   * 1. Planning and design: 15 Hours
     2. Development: 120 Hours
     3. Documentation: 15 Hours
     4. Total: 150 Hours
3. **Projected completion date:**

May 17, 2024

**IMPLEMENTATION and EVALUATION:**

1. Describe how you will approach the execution of your project.

* **This project does not involve human subjects research and is exempt from WGU IRB review.**

**STUDENT’S SIGNATURE**

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By signing and submitting this form, you acknowledge that any costs associated with the development and execution of the application will be your (the student's) responsibility.

**INSTRUCTOR’S SIGNATURE:**

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**INSTRUCTOR APPROVAL DATE:**