***## Project Outcomes***

*- Supervised Learning: use supervised learning techniques to build a machine learning model that can predict whether a patient has diabetes or not, based on certain diagnostic measurements.The project involves three main parts: exploratory data analysis, preprocessing and feature engineering, and training a machine learning model.*

***### Duration:***

*Approximately 2 hours and 40 minutes*

***### Project Description:***

*In this projects, you will apply supervised learning techniques to a real-world data set and use data visualization tools to communicate the insights gained from the analysis.The data set for this project is the "Diabetes" dataset from the National Institute of Diabetes and Digestive and Kidney Diseases The project will involve the following tasks:*

* *Exploratory data analysis and pre-processing: We will import and clean the data sets, analyze and visualize the relationships between the different variables, handle missing values and outliers, and perform feature engineering as needed.*
* *Supervised learning: We will use the Diabetes dataset to build a machine learning model that can predict whether a patient has diabetes or not, using appropriate evaluation metrics such as accuracy, precision, recall, F1-score, and ROC-AUC. We will select at least two models, including one ensemble model, and compare their performance.*

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*>* ***#### Instruction***

*> The instructions for these two projects can be found in their* ***JUPYTER notebooks (Supervised learning - Project.ipynb)****.*

***### Submission Guidelines:***

*For this project, you will need to submit a link to your github repo that contains all of the files listed. The files submitted will be evaluated.*

*Your repo must include the following:*

*- Include JUPYTER notebook file for both projects with your presentation. It should be named \*MachineLearning\_Supervised\_LastNameFirstName.ipynb\*.*

***### Evaluation Guidelines:***

*Here are some things you’ll need to keep in mind for this evaluated project:*

*- Familiarize yourself with the Eval Rubric tab so you can read about the competencies you will be evaluated on for this particular project and review what the different levels of each competency require.*

*- If you receive Unsatisfactory for any competency, your project will be rejected. If this happens, you will need to review the feedback provided, make changes to your project based on that, and resubmit your updated project within 48 hours in order to get it accepted and stay on track. This is not a bad thing! Having to resubmit is an opportunity for you to improve.*

*- Please ensure that you submit your project immediately following your presentation to help ensure you get feedback as soon as possible.*

***### Rubric:***

*Provide link to the rubric that will be used to evaluate the submitted documents.*