

K. N. Toosi University of Technology

Faculty of Physics

Educational Group of

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Machine Learning Projects (Project 1)

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Academic Year 1401-1402 (First Semester)

Diagnosis of Diabetes

In this project, we ask you to predict whether a patient has diabetes or not based on the measurements in a dataset. You can download the dataset needed to answer this question from this link.¹

There are several variables in this dataset: a number of independent variables along with a target dependent variable. Each of these variables is as follows:

| Columns | Description |
|----------------------------|-----------------------------------|
| Pregnancies | number of pregnancies |
| Glucose | glucose level in blood |
| Blood Pressure | blood pressure measurement |
| Skin Thickness | thickness of the skin |
| Insulin | insulin level in blood |
| BMI | Body Mass Index |
| Diabetes Pedigree Function | diabetes percentage |
| Age | age of the patient |
| Outcome | final result 1 is Yes and 0 is No |

Note: The given data is raw. To answer this question, you must first preprocess the data using the Pandas package.

Important Points

Be sure to

- Leave appropriate comments for different parts of your code.
- Completely explain about the algorithm(s) you use to answer this question.
- Measure your model performance using model evaluation metrics and interpret the obtained result(s).

A part of your score will be allocated to these items.

* You should write all the steps of your project in the **Jupyter notebook** and upload it as a file with the **.ipynb** extension on the vc site.

 $^{^{1}\}mathrm{To}$ save the dataset, you need to press Ctrl+S on the opened page and save the .csv file