

### 1. How should one approach the Personal Loan Campaign project?

- Before starting the project, please read the problem statement carefully and go through the criteria and descriptions mentioned in the rubric.
- Once you understand the task, download the dataset and import it into a Jupyter Notebook to get started with the project.
- To work on the project, you should start with data preprocessing and EDA using descriptive statistics and visualizations.
- Once the EDA is completed and the data is preprocessed, you can use the data to build a model and check its performance.
- It is important to close the analysis with key findings and recommendations to the business.

### 2. Decision Tree arrows are missing, how to fix this?

Use the following code as a reference to resolve the issue and make necessary changes (name of the model, feature names, etc):

```
plt.figure(figsize=(20,30))
out = tree.plot_tree(model,feature_names=feature_names,filled=True,fontsize=9,node_ids=False,class_names=None,)
#below code will add arrows to the decision tree split if they are missing
for o in out:
    arrow = o.arrow_patch
    if arrow is not None:
        arrow.set_edgecolor('black')
        arrow.set_linewidth(1)
plt.show()
```

### 3. How to deal with "ZIPCode" as it is a numeric value but it's also essentially a category?

You can explore the following links to deal with zip codes:

1. [uszipcode](#) - Python package that can help in mapping zip codes to different locations
2. <https://www.smartvstreets.com/articles/zip-4-code> - Description of how zip codes are created in the



No, it is not necessary to create dummies for these columns.

### 5. I'm trying to post-prune the decision tree. But I'm getting the following error:

```
"ValueError: ccp_alpha must be greater than or equal to 0"
```

#### How to resolve this?

To resolve this error kindly use absolute values (positive value) of alpha. Use the following lines of code to resolve the error:

```
ccp_alphas, impurities = abs(path.ccp_alphas), path.impurities
```

### 6. I get the following error:

```
ModuleNotFoundError: No module named 'nb_black'
```

#### how do I install nb\_black?

Run the below code in the anaconda prompt

```
pip install nb-black
```

or run the below code in jupyter notebook.

```
!pip install nb-black
```

