**ASSIGNMENT 1 FOR MACHINE LEARNING**

**Description:** A problem statement for the first assignment under the machine learning module is below. The solution required is also mentioned in the below statement.

A close-up of a paper

Description automatically generated

**Solution for the given assignment**

|  |  |
| --- | --- |
| A | The scenario mentions that the company seeks our expertise to provide a code that uses AI to identify any employees who may resign from the company. Awareness of the potential resigning employees can help the company take suitable actions to avert a challenging situation that may stall the ongoing project. |
| B | The three stages of this problem are shown below   * Stage 1: We can adopt **Machine Learning (ML)** to prepare a solution for the given problem. This is because the company will have a dataset with a list of employees and their assigned tasks. The data can have varying sets of inputs like the employee name, age, experience, working hours, assigned tasks, etc. * Stage 2: While acquiring data set from the company, we can also get crucial data which may label the employees as potential resigning members. Hence, the given problem can be considered as **supervised learning**. * Stage 3: Since the output groups the employees as “potential to resign” or “may not resign”. Here the output is labelled as text. Hence, the category of the output is **classification learning**. |
| C | **Name of the project:** Python Program to Identify Potential Resigning Members in XYZ Company |
| D | The dummy dataset for the given project is shown below. In the given table the first six columns are the inputs, and the last column is the output. |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Employee name** | **Age** | **Experience** | **Details of previous employment** | **Working hours** | **Assigned project** | **Hint** |
| Name 1 | 21 | Fresher | NIL | 9 am to 5 pm | Sorting mail from clients | May not resign |
| Name 2 | 22 | Fresher | NIL | 10 pm to 6 am | Monitoring the working of systems in the company | May resign |
| Name 3 | 35 | 7 years | NIL | Flexible timing | Supervising the project work | May not resign |
| Name 4 | 33 | 5 years | NIL | 9 am to 5 pm | Task manager | May not resign |
| Name 5 | 40 | 8 years | Has experience in 5 different companies | 9 am to 5 pm | Fabrication in charge | May resign |
| Name 6 | 45 | 12 years | Has experience in 2 different companies | 9 am to 5 pm | Team head | May not resign |
| Name 7 | 50 | 18 years | NIL | 9 am to 5 pm | Purchase and maintenance | May resign |