**DAILY ASSESSMENT FORMAT**

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| **Date:** | **16/07/2020** | **Name:** | **Abhishek Vasudev Mahendrakar** | |
| **Course:** | **Machine Learning with Python** | **USN:** | **4AL17EC003** | |
| **Topic:** | **Week-1** | **Semester & Section:** | **6th-‘A’** | |
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| **FORENOON SESSION DETAILS** | | | |
| **Image of session** | | | |
| **Report – Report can be typed or hand written for up to two pages.**  **What is Machine Learning?**  **“Machine Learning is the subfield of computer science that gives computers the ability to learn without being explicitly programmed.”**  **Major Machine Learning techniques:**   1. **Regression/Estimation** 2. **Classification** 3. **Clustering** 4. **Associations** 5. **Anomaly detection** 6. **Sequence mining** 7. **Dimension Reduction** 8. **Recommendation systems**   **Difference AI and ML:**   |  |  | | --- | --- | | **ARTIFICIAL INTELLIGENCE** | **MACHINE LEARNING** | | AI stands for Artificial intelligence, where intelligence is defined acquisition of knowledge intelligence is defined as a ability to acquire and apply knowledge. | ML stands for Machine Learning which is defined as the acquisition of knowledge or skill | | The aim is to increase chance of success and not accuracy. | The aim is to increase accuracy, but it does not care about success | | It work as a computer program that does smart work | It is a simple concept machine takes data and learn from data. | | The goal is to simulate natural intelligence to solve complex problem | The goal is to learn from data on certain task to maximize the performance of machine on this task. | | AI is decision making. | ML allows system to learn new things from data. | | It leads to develop a system to mimic human to respond behave in a circumstances. | It involves in creating self learning algorithms. | | AI will go for finding the optimal solution. | ML will go for only solution for that whether it is optimal or not. | | AI leads to intelligence or wisdom. | ML leads to knowledge. |   **Python Libraries for Machine Learning:**   * **NumPy** * **SciPy** * **Matplotlib** * **Pandas** * **Scikit learn**   **Difference between Supervised Learning and Unsupervised Learning:**   |  |  |  | | --- | --- | --- | | **Parameters** | **Supervised machine learning technique** | **Unsupervised machine learning technique** | | Process | In a supervised learning model, input and output variables will be given. | In unsupervised learning model, only input data will be given | | Input Data | Algorithms are trained using labeled data. | Algorithms are used against data which is not labeled | | Algorithms Used | Support vector machine, Neural network, Linear and logistics regression, random forest, and Classification trees. | Unsupervised algorithms can be divided into different categories: like Cluster algorithms, K-means, Hierarchical clustering, etc. | | Computational Complexity | Supervised learning is a simpler method. | Unsupervised learning is computationally complex | | Use of Data | Supervised learning model uses training data to learn a link between the input and the outputs. | Unsupervised learning does not use output data. | | Accuracy of Results | Highly accurate and trustworthy method. | Less accurate and trustworthy method. | | Real Time Learning | Learning method takes place offline. | Learning method takes place in real time. | | Number of Classes | Number of classes is known. | Number of classes is not known. | | Main Drawback | Classifying big data can be a real challenge in Supervised Learning. | You cannot get precise information regarding data sorting, and the output as data used in unsupervised learning is labeled and not known. | | | | |