

# Foundation of Artificial Intelligence

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# Lab 1

## Foundation of Artificial Intelligence



# An Overview of Lab 1

## Week 1:

- First Two/three weeks about on introduction to Python
  - Control flow tools (if, else)
  - useful in-built functions, e.g. range()
  - List, Sets, Dictionary
  - Recursion I Function
  - Looping techniques (for, while etc.)
  - Writing small programs
  - use of built-in-library
  - Outcome: basic working knowledge on python



# An Overview of Lab 1

## Week 1:

- Next two/three weeks
  - Write programs for search algorithms (e.g. DFS, BFS, A\* Search algorithms)
  - Outcome: ability to solve small problems using python



# An Overview of Lab 1

## Week 1:

- Final five/six weeks
- Lectures on Naive-Bayes classifier or other predictive models or selected topics of NLP
- Learn to using library for building classifiers or similar models
- E.g. A simple task: estimating language model probability for a given text
- Outcome:
  - You can have your own classifiers or similar predictive systems, and you can use such systems as a part of your project too
  - You can code and implement a search module (say heuristics search) and use them for making simple AI game (e.g. Maze, Chess, 15-Puzzle, tic-tac-toe) on your own
  - You can modify an existing program written in python (e.g. integrate A\* search function into existing game with your own heuristics) [could be an idea for your project etc]



# Starting Week 1: Lab 1

## Week 1:

- Following the “**Getting Started.pdf**” guidelines given in the moodle page, download and install Python and Jupyter Notebook on your computer. Work through a few steps in the general tutorial, to be sure that your installation works and that you can follow instructions without losing too much time.
- Python.org <https://www.python.org/>
- Python Tutorial:

<https://docs.python.org/3.8/tutorial/index.html>

- Python Tutorials [jupyter.org](https://jupyter.org)  
Jupyter Notebook Documentation  
• <https://jupyter-notebook.readthedocs.io/en/stable>



**THANKS!**