

CS 534 Individual Project Assignment 1 (25 Points)

Due: 11:59 p.m. on 02/02/2025

Project Objective: The goals of this assignment are:

- Help me understand your background so that I can assign you to the right team for the group project assignment that you will work on for the rest of the semester.
- Set up the Python environment and its IDE for your projects.
- Join our AI course community in Discord by 02/05/2025 to help your classmates in assignments and share any AI News.

Note:

- (1) This project is to be done by **EACH STUDENT** individually.
- (2) Your program must be developed and implemented in the PyCharm-like IDE, or 10% of the graded score is deducted. Please check and choose the one from here: <https://realpython.com/python-ides-code-editors-guide/>. Note that we **DO NOT** use the Jupyter as the IDE.
- (3) Assignments are accepted in their assigned Canvas drop box without penalty if they are received by 11:59PM EST on the due date, or 10% of the graded score is deducted for the late submission per day. Work submitted after one week of its original due date will not be accepted.

Project Deliverables: Submit a **zip** file that includes your answers for the below questions of **Section A** in the **pdf** file and the **.py** file of **Section B** to generate the below sample output to Canvas. In **Section C**, please click the given link on Canvas on 02/03/2025 to join our AI course community in Discord. Note that please use your real name after you join the community so that we know who you are in our course.

A. Project Questions:

1. What is your full name? What is your major? Are you an undergraduate or a graduate student? What is your current GPA?
2. What is your current time zone, e.g., Atlantic Standard Time (AST), Eastern Standard Time (EST), Central Standard Time (CST), Mountain Standard Time (MST), Pacific Standard Time (PST), Alaskan Standard Time (AKST), Hawaii-Aleutian Standard Time (HST), etc., to name a few?
3. Have you done any projects related to AI before?
 - If yes, what is this project about? Please provide any details in this project.
 - If no, please type "**None**".
4. Which problem domains (e.g., Transportation, Healthcare, Education, Entertainment, Finance, Business, etc., to name a few) are you interested in your group project assignment? Please give me the top two domains that you are interested in the most.
5. Which types of datasets (e.g., Text, Video, Audio, Image, Tabular, Graph, etc., to name a few) are you interested in your group project assignment? Please give me the top two data types that you are interested in the most.
6. Have you taken any courses related to AI, for example, math models, data structures, algorithms, logic, machine/deep learning, natural language processing, computer vision, etc.?
 - If yes, what is the rating that you would give yourself: 4) Very Strong 3) Strong 2) Fairly Strong and 1) Marginally Strong?
 - If no, please type "**None**". **You may like to consider taking CS 534 later if you have not taken/known two or more related courses/topics listed above.**

7. Do you know Python programming?
 - If yes, what is the rating that you would give yourself: 4) Very Strong 3) Strong 2) Fairly Strong and 1) Marginally Strong?
 - If no, please type **"None"**. **You may like to consider taking CS 534 later if you have not taken/known Python programming.**
8. Do you know any desktop or web application programming?
 - If yes, what is the rating that you would give yourself: 4) Very Strong 3) Strong 2) Fairly Strong and 1) Marginally Strong?
 - If no, please type **"None"**.
9. Have you applied **any existing approaches**, such as math models, data structures, algorithms, logic, machine/deep learning, natural language processing, computer vision, etc., in your work or courses before to solve a real-world problem?
 - If yes,
 - What is the rating that you would give yourself: 4) Very Strong 3) Strong 2) Fairly Strong and 1) Marginally Strong?
 - Would you prefer to work on your group project assignment in applying those existing approaches to solve a real-world problem?
 - If no, please type **"None"**.
10. Have you developed **any novel/advanced methodologies**, including mathematical/data models, computational algorithms, system architectures, etc., in your work or courses before to solve a real-world problem?
 - If yes,
 - What is the rating that you would give yourself: 4) Very Strong 3) Strong 2) Fairly Strong and 1) Marginally Strong?
 - Would you prefer to work on your group project assignment in developing a novel/advanced methodology to solve a real-world problem?
 - If no, please type **"None"**.

Note: **"Novel/Advanced methodologies"** means that they cannot be found in **any existing approaches** or **any advancement/enhancement** that you can make on top of **any existing approaches** after doing the literature review. Fine-tuning model parameters, training more datasets, applying current methods on a different domain dataset, etc., by using the same, existing approaches are not counted towards in this category.

11. If your answers for **Q9 and Q10 are ALL yes**, what is your preference for your group project assignment, i.e., applying any existing approaches or developing any novel/advanced methodologies, to solve a real-world problem, or else please type **"No Preference"**?

B. Python Setups

1. Follow the **"Week 1 - Anaconda Python Distribution and PyCharm IDE Installation Procedure.pdf"** posted on Canvas to setup the Python development environment. ***If you have already installed the old versions of Anaconda, Python, and PyCharm-like IDE, I would suggest you uninstall them all first and then re-install the latest version using the given procedure.***
2. Develop a simple python program (**.py**) on the IDE to generate the below sample output using the given program construct and submit the code (**.py**) **NOT .ipynb**. Note that we **DO NOT** use the Jupyter as the IDE in this course.
 - Your code must be developed inside the **main()** function. Please remove the keyword **"pass"** after your code will have been implemented.
 - Please use the proper naming conventions and provide the program documentation on your code.
 - Enter your own name (e.g., Ben Ngan) to test and generate the below sample output.

```
def main():
    pass

if __name__ == "__main__":
    main()
```

```
Hello World
Enter your name: Ben Ngan
Hello Ben Ngan
```

C. AI Course Community in Discord

I have already set up a Discord for our class. After the add/drop period, I will release the Discord link under the **"Syllabus, Schedule, and Office Hours" module** on Canvas on **02/03/2025**; and invite you to join our Discord, where you can post your questions and/or feedback to help/get help from your classmates, me, and your TA, as well as and share any AI News.

Note that:

- (1) Please use your **real name** after you join the community so that we know who you are in our course.
- (2) Please also add your pronouns to your Discord profile.
- (3) No program codes/solutions/answers of your assignments are posted and shared to avoid the violation of honor codes.

Grading Criteria: Your answers must be complete and clear.

Checkpoint:	Possible Points
Project Questions: PDF Document	10
Python Setups: .py File and Correct Running Outputs	10
AI Course Community with Your Real Name in Discord	5
Total	25