# IPC 144 Project - Milestone 1

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## Project Problems:

1. Get your problems by logging onto matrix
2. Then run the program: ~catherine.leung/getproject

Note that this is completely individualized to you. Your classmates will have a different set. Your profs will check to make sure you are doing the set of problems assigned to you

**Copy and paste the output of getproject here**:

**Easy (A2)**

**Intermediate (B12)**

**Hard (C3)**

Look at the files provided to you in the olympic.zip file (highly recommend opening the files in Excel and answer the following questions. See milestone 1 specs for clarification.

### Problem 1 (Easy level): A2

a) **What is the problem you are doing for this part (copy the text of the problem, not just the problem number from the specs)**?

Given the edition of the Olympics (the year and either Summer or Winter), and a country, how many silver medals were won by that country during that edition of the Olympics?

b) **What data file(s) (from the set of provided files consisting of Olympic statistical information) will you need to answer the problem**?

Olympic\_Athlete\_Event\_Results.csv (Contains event results, including medals won.)

Olympics\_Games.csv (Contains Olympic edition years and season information.)

Olympics\_Country.csv (Contains country NOC codes and country names.)

c) **What column(s) (from within each data file) will you need to solve the problem**?

Olympic\_Athlete\_Event\_Results.csv: Games\_ID, NOC, Medal

Olympics\_Games.csv: Games\_ID, Year, Season

Olympics\_Country.csv: NOC, Country\_Name

d) **Is there any missing/incomplete data for the problem**?

Some older Olympic records might have missing medal data.

If a country has no silver medals, the result should be counted as zero.

e) **Other than the data in the files, what other information will you need to solve the problem**?

User input for Olympic year, season (Summer/Winter), and country name/NOC code.

f) **For cases where the problems involve multiple files, how do you relate the data between the files**?

The Games\_ID in Olympic\_Athlete\_Event\_Results.csv will be matched with Games\_ID in Olympics\_Games.csv.

The NOC in Olympic\_Athlete\_Event\_Results.csv will be matched with NOC in Olympics\_Country.csv to get the country name.

### Problem 2 (Intermediate level): B12

a) **What is the problem you are doing for this part (copy the text of the problem, not just the problem number from the specs)**?

How many athletes won a medal in multiple Olympics? List the athletes.

b) **What data file(s) (from the set of provided files consisting of Olympic statistical information) will you need to answer the problem**?

Olympic\_Athlete\_Event\_Results.csv (Contains event results and Olympic participation records.)

Olympic\_Athlete\_Bio.csv (Contains athlete IDs and names.)

c) **What column(s) (from within each data file) will you need to solve the problem**?

Olympic\_Athlete\_Event\_Results.csv: Athlete\_ID, Games\_ID, Medal

Olympic\_Athlete\_Bio.csv: Athlete\_ID, Name

d) **Is there any missing/incomplete data for the problem**?

Some medal data might be missing from older Olympic editions.

If an athlete's participation record is incomplete, only the available data will be considered.

e) **Other than the data in the files, what other information will you need to solve the problem**?

Checking whether an athlete competed in multiple Olympic editions.

Using Games\_ID to verify if the same athlete won medals in different editions.

f) **For cases where the problems involve multiple files, how do you relate the data between the files** ?

The Athlete\_ID in Olympic\_Athlete\_Event\_Results.csv will be matched with the Athlete\_ID in Olympic\_Athlete\_Bio.csv to retrieve athlete names.

### Problem 3 (Hard level): C3

a) **What is the problem you are doing for this part (copy the text of the problem, not just the problem number from the specs)**?

Given the edition of the Olympics (the year and either Summer or Winter), produce a histogram using ascii values of the 10 top ranked countries based on the number of total number medals won. Break ties with number of golds, then number of silvers, then number of bronze

b) **What data file(s) (from the set of provided files consisting of Olympic statistical information) will you need to answer the problem**?

Olympic\_Athlete\_Event\_Results.csv (Contains event results and medal information.)

Olympics\_Games.csv (Contains Olympic edition years and season information.)

Olympics\_Country.csv (Contains country codes and names.)

c) **What column(s) (from within each data file) will you need to solve the problem**?

Olympic\_Athlete\_Event\_Results.csv: Games\_ID, NOC, Medal

Olympics\_Games.csv: Games\_ID, Year, Season

Olympics\_Country.csv: NOC, Country\_Name

d) **Is there any missing/incomplete data for the problem**?

Some medal records from older Olympics might be incomplete.

If data is missing, the affected country will be assigned a zero count.

e) **Other than the data in the files, what other information will you need to solve the problem**?

User input for Olympic year and season (Summer/Winter).

A proper scaling method for generating the ASCII histogram.

f) **For cases where the problems involve multiple files, how do you relate the data between the files** ?

The Games\_ID in Olympic\_Athlete\_Event\_Results.csv will be matched with Games\_ID in Olympics\_Games.csv.

The NOC in Olympic\_Athlete\_Event\_Results.csv will be matched with NOC in Olympics\_Country.csv to retrieve the country name.

The total number of medals per country will be calculated, and the top 10 countries will be ranked for the ASCII histogram.