

* This document is 2 pages long.

Coding Project (200 points)

A. Coding subject

There are 3 problems in this coding project: (1), (2), and (3). Your problem for this coding project is randomly allocated by the last digit of your Howard University ID ([Check the Video lecture of coding project to find the allocated problem for you by your Howard ID](#)).

Write and run (or debug) a code which computes:

(1) if the last digit of your HU ID is 0, 2, 4, 7, or 9, a Leyland number, $L = x^y + y^x$, for given numbers x and y ($0 < x < 10$ and $0 < y < 10$).

The main part calls twice the procedure that calculates a general power equation a^b .

(2) if the last digit of your HU ID is 1 or 3, Binomial coefficients $C(n, k) = n! / [k! (n-k)!]$ with given numbers n and k ($0 < n < 10$, $0 < k < 10$, and $k < n$). The main part calls three times the procedure that calculates a general factorial $p!$.

(3) if the last digit of your HU ID is 5, 6 or 8, a Cullen number $C_n = n \cdot 2^n + 1$ with given number n ($0 < n < 10$). The main part calls the procedure that calculates a general power of 2 value, 2^m .

B. Code Specification

(a) Input interface: Read the number (or numbers) from the keyboard in decimal format

(b) Output interface: Display the result of calculation on the screen (or console) in decimal format.

C. Submission

(a) A report which includes (i) 1/2 page layperson's summary ([check the Video lecture on Coding project for details](#)) and (ii) the code itself. The file name for the layperson's summary:

ASMpjt_LastName.xxx and the file name for the ASM code:

ASMpjt_LastName.asm

(b) Submission via email or Slack

(c) Submission due: **8pm Wed Dec 8, 2021** No extension

D. Score Distribution and Scoring Rubrics - Total points - 200

	Layperson's summary [50]	All the rest [150]
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150 pts		Distinctively different and original code with <u>correct</u> results as captured/described in the report and as its code tested by the instructor
100 pts		One of the similar codes with <u>correct</u> results as captured/described in the report and as its code tested by the instructor
50 + extra 10 pts	Good summary for general public in contents and mechanics with attached evidence that the summary was well understood by a person without engineering or science background.	
50 pts	Good summary for general public in contents and mechanic.	
40 pt	Good summary in contents and mechanic but not for general public	
0 pt	No summary	No submission