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# Assignment 6

## AI in Excel (Flash Fill)

## Introduction

AI features are appearing in every day, common, workplace applications. This assignment focuses on one AI feature – Flash Fill.

*Alert! Possible, exam questions ahead!* This Excel feature is an example of **Machine Learning** anda **pattern recognition heuristic**.

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| **Why does this count as AI?** This is a simple example of machine learning. This feature follows a heuristic that generates the multiple possible code “solutions” that are derived (or “learned”) from the user input and selects one that appears to be the best match. |

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| **How does it work?** Microsoft has not publicly detailed the exact algorithmic specifics. The code behind Flash Fill is proprietary.  In addition to “learning” from user input (which it apparently does) it also \*probably\* uses a library of the most common patterns (like, email addresses, phone numbers, etc.).  It also \*probably\* uses a language called RegEx ( or something very similar ) to represent the pattens. RegEx is short for Regular Expressions, and it is a language dedicated to one thing… representing and evaluating patters of text.  You can read about it more here: <https://www.microsoft.com/en-us/research/blog/flash-fill-gives-excel-smart-charge/> |

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| **What’s a heuristic?** A heuristic is a practical method or approach to problem-solving that, while not guaranteed to be perfect, efficient, or rational, is nevertheless sufficient for reaching an immediate, short-term goal or approximation. Heuristics are used to speed up the process of finding satisfactory solutions where finding an optimal or exact solution is impractical or impossible. |

## Instructions

1. Students should download assignment6.zip from the MIS Community site and unzip it into their mis3536workspace. (There is only one spreadsheet in the zip file: FlashFillExample.xlsx. )
2. Open up Excel
3. Open the FlashFillExample.xlsx.
4. Refresh your memory on how “Flash Fill” works! See: <https://www.youtube.com/watch?v=b0KP0qCBxp0>
5. Complete the First Name column.
6. Complete the Last Name column.
7. Complete the Roster Name column in such a way that names appear as last ame, followed by a comma, followed by the first name.
8. Complete the Username column. (Usernames should be first initial concatenated with last name.)
9. Now, using the INDEX and RANDBETWEEN formulas, generate a random password for all the users.
   1. If you need help with INDEX: <https://youtu.be/jZv1gizkF9s?si=SEa0NJ6Ca11-iKdw>
   2. If you need help with RANDBETWEEN: <https://youtu.be/-_NlgzIeHS4?si=72PEu1bnsN84-F-o>
10. Save your work.
11. Discuss: How is Flash Fill better / worse than an Excel formula? Put your comments in the box below.

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1. Turn it in (that is, upload FlashFillExample.xlsx) and this document on the corresponding Canvas Activity.