



# February Student Newsletter

By: Allison Athman, Spencer Kotys, Danielle DeTuncq, and Avni Jain

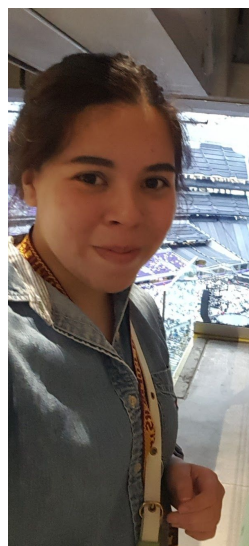
## Student Representatives



Allison Athman  
& Spencer Kotys



I'm Avni Jain, a junior at Eden Prairie High School!



Hello, my name is Danielle DeTuncq. I'm a Junior at Roseville Area High School and I am currently dual-enrolled at the U of M, where I'm studying Electrical Engineering and Computer Science.

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## Announcements

- **Support MN FPS** by using AmazonSmile when you online shop.
  - \* Use the link: <http://smile.amazon.com/ch/41-1731735> to bring you directly to the FPS page. Amazon will donate to MN FPS when you buy using that link.
  - \*This is a great way to shop for your family and friends while supporting FPS!
  - \*Spread the link to all of your family and friends so that they can support FPS too!
  
- **The state competition** is March 24th at Apollo High School in St.Cloud, MN
  - \*Who gets to go to State?
    - # of GIPS Teams: Junior-24, Middle-21, Senior-8
    - # of Individuals: Junior-2, Middle-7, Senior-2
    - # of MAGIC teams: Junior-5, Middle-5

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# Research Tips

By Danielle DeTuncq

- **Articulate your topic** by writing a clear and concise thesis statement or goal.
- **Identify information you need** by turning your topic statement into a list of questions.
  - E.g. if the thesis was “PCs are more functional and versatile than Macs” a few guiding questions would be:
    - What kind of environments do Macs and PCs support?
    - What percent of Software Engineers use a PC vs a Mac?
    - Which allows for more cohesivity between various device environments?
- **Define the scope of your research** by identifying any limitations they place on research such as publication date, publication type, primary or secondary source, et al.
- **Use search engines or databases aimed at researchers** to filter quality resources. These are all examples of high-caliber sources:
  - [JSTOR](#) - Academic journals, books, and primary sources.
  - [Google Scholar](#) - Cross-disciplinary and cross-database. Articles, theses, books, abstracts, court opinions, material from academic publishers, professional societies, online repositories, universities, and other academic websites.
  - [PLoS](#) - STEM publisher (specifically pre-prints (scientific papers published before peer review for rapid dissemination)) with a library of scientific literature that is open access, i.e. free to the public.
  - [SSRN](#) - Social science and humanities research papers.
  - [Pubmed](#) - Free search engine to access the MEDLINE database of references and abstracts on life science and biomedical topics.
  - [World Development Indicators](#) - Primary World Bank collection of development indicators compiled from officially recognized international sources.
- **Evaluate the suitability and reliability of your sources** using these questions.
  - **Who:** Who is the author and what are his/her credentials in this topic?
  - **What:** Is the material primary (i.e. information that is directly from the source) or secondary in nature?
  - **Where:** Is the publisher or organization behind the source considered reputable? Does the website appear legitimate?
  - **When:** Is the source current or does it cover the right time period for your topic?
    - For qualitative studies, anything within the last 5-10 years is satisfactory.

- For quantitative or data driven studies, anything within 5-15 years (excluding population studies which should be within 8 years) is acceptable.
- **Why:** Is the opinion or bias of the author apparent and can it be taken into account?
- **How:** Is the source written at the right level for your needs? Is the research well-documented?

# Cloud Storage

## What is Cloud Storage?



**Cloud Storage:** *a model of data storage which stores digital data in pools; the physical storage spans several servers.*

Cloud Storage is an efficient method to store, access, and share data across the internet. There are two components of cloud storage: hardware and software.

Cloud storage for commercial, private, and public content is a growing phenomenon and is used by both public citizens and private corporations. Cloud storage provides a number of advantages: lower costs for usage, automatic backup and recovery systems, less maintenance than what is required presently, and personal computers do not need to provide large amounts of data storage. From the negative aspect, people worry about reliability and security.

Have you considered these questions?

- What would happen if corporations could not access their information stored on a cloud?
- If a cloud system is hacked, how is information secured?
- What if authentication and authorization systems fail?
- The safety of data depends on the third party hosting companies.
- How should businesses protect their data and intellectual property when cloud storage means they've exchanged much of their ability to manage their data directly for ease of operation and convenience?

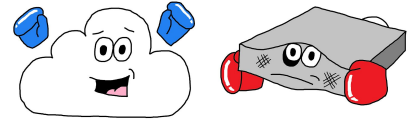
# TIPS:

By Cheryl Whitesitt and Allison Athman

## Step 2-Underlying Problem (UP)

Does the format matter in the UP?

YES! The format in this step is absolutely critical!



You must begin with a **Condition Phrase**:

A fact from the Future Scene

“Due to the fact that....”

This must be followed by the **Stem** (How might we...) and the **Key Verb Phrase** (KVP.) The KVP tells us WHAT you want to do.

Close your UP/Question with the **PURPOSE**. The Purpose tell us WHY you want to accomplish your KVP.

Lastly, embed the parameters of WHERE, WHEN, and be sure the TOPIC is stated or clearly implied.

Let’s put this all together. A possible UP for the topic of Cloud Storage might be:

(**Condition Phrase**) Due to the fact that Cloud Storage Users have expressed concerns about the increased risk of privacy breaches,

(**Stem**) How might we (**Key Verb Phrase**) improve the security of their files

(**Purpose**) So that the Global Cloud Infrastructure can be accessed safely in 2040 and beyond?

## Hmmmm..... So what is the difference between a Challenge Statement and the Underlying Problem?

1. A challenge statement in **Step One** is just that. It’s a statement the shows the cause of an issue and the effect. EXAMPLE: (Cause) Because the level of security you get for Cloud Storage depends on the amount you pay, (Effect) many users may not be able to afford the level of security that they need.
2. Step Two, the Underlying Problem:
  - Asks a QUESTION - How might we...?
  - Tells us WHAT you want to do,
  - Tells us WHY you want to do it,
  - Tell us WHEN it will happen, WHERE it will happen, and shows the TOPIC.

### Step 3- Solutions

1. Solutions solve your Underlying Problem only, not the Challenges from Step 1.
2. To get elaboration points, your solution should include the following: who, what, why, and how.
3. Solutions need to solve the KVP because otherwise it is irrelevant and you will not receive points for that solution.
4. Think futuristically and use categories!

Example: “Google (*who*) will create detailed security questions in order to access files in the Cloud (*what*) by having the user answer questions everytime they want something from the cloud (*how*). Even hackers need to answer the questions correctly to get into someone’s cloud files, which will be very difficult (*how*). This makes the files safer and secure (*why*).”



### Step 4 - Criteria

1. Criteria are simple QUESTIONS.
2. Criteria are WELL focused on YOUR Underlying Problem.
3. They are WELL focused on the TOPIC.
4. While generic criteria are useful, they

do

NOT point us to the BEST solution and

often cause ties on the grid and leave very

little room for creativity when developing the ALoU.

5. Is the format important in this step? **Absolutely YES!** The questions need to be clear and concise.

Following are examples Criteria that are well focused for the Underlying Problem

Example on page Five:

1. Which solution will BEST minimize the risk of privacy breaches?
2. Which solution will MOST improve the security of Cloud Files?
3. Which solution will provide the SAFEST access to the Cloud Files?
4. Which solution will MOST improve the Cloud authorization systems?
5. Which solution will provide the MOST equitable Cloud Storage to all users?

## Step 6 - Action Plan

1. This is the best solution to the UP that was decided by the grid or ALoU.
2. The Action Plan should tell in detail how the solution works to solve the problem and how it will make the world better after it is implemented.
3. Include an obstacle or challenge and explain how you will overcome it.
4. Remember to embed your criteria into the Action Plan.
5. Be **CrE8tiVe** and **HaVe PHUN!**

