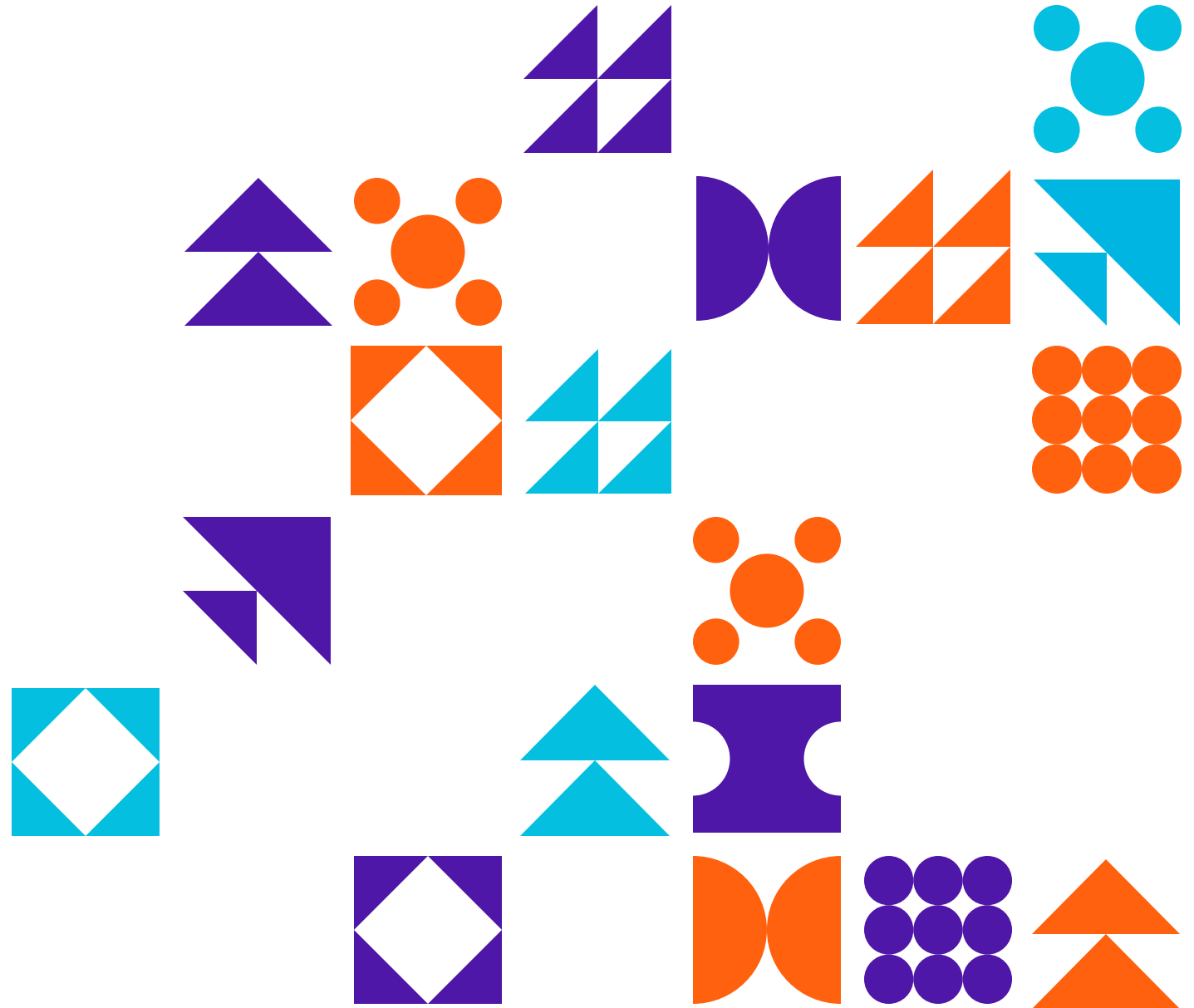


AI USE CASES FOR PROJECT MANAGEMENT STATUS REPORTING



Agenda

1. Objective

- Automate the generation and updating of project status reports using generative AI tools

2. Tools used

- Anthropic Claude 3.5 Sonnet – to create sample data
- OpenAI GPT 4o – to create status report

3. Use Cases

- Generate sample Project data
- Create Executive Status Report
- Auto creation of PowerPoint slide deck

4. Summary / Q&A

AI POC Initiative

Objective

Build something that demonstrates the effective use of Gen AI in project management, and share it with project management community to help start making use and getting benefits from Gen AI for their own projects

The Gen AI POC Team

NK Shrivastava

Ada Indira Avila, Dennis Ellis
Kevin Davis, Natalie Gonzalez
Nevila Luzi, Nishant Puri
Phillip George, Segun Fatoki
Shrinivas Bayer

The Gen AI Initial POCs

1. **Earned Value Management**
2. **Status Reporting**
3. **Risk Management**

*Do you have an idea/use case for use of Gen AI in project management? Do you want to make it a reality?
Join our team, connect with NK Shrivastava - nks@RefineM.com*



Dennis Ellis, Director, Technology Services

MBA, PMP, CCP, SCM

<https://www.linkedin.com/in/dennisellis/>

Information Technology executive with experience leading teams in private companies and government agencies across a variety of industries, business sizes, and technical domains

- Leveraging AI technologies for the next generation of business improvement
- Strategic focus on the key drivers of each customer's success

Your Expectations

What are your expectations from this webinar?

Why are you here today?

Use Case

Automate the generation and updating of project status reports using generative AI tools

Steps

Collect input data about your project

Generate Status Reports with varying levels of detail

Generate an image/logo for the project

Tools Used

Claude 3.5 Sonnet (generated data about a hypothetical project)

OpenAI ChatGPT-4o

OpenAI DALL·E 3

Use Case:

☰ ☑ Hypothetical Software Project Details ☆ ⋮

D I am a project manager for a software development company. I want you to generate information for a hypothetical software development project. Here are some given parameters. The project started on Jan 1, 2024 and continues to this day. The estimated completion date is 12/31/24. The application being developed is a case management system for a human services agency. the team has approximately 30 members and uses an agile project planning methodology. Using this basic information please generate other hypothetical, but detailed information for this project. I need hypothetical details about the use cases, budget, schedule, risks, technical architecture. I will later use these details to simulate a project status reporting system for the project.



LLM Response:

Thank you for providing those initial parameters. I'd be happy to generate some hypothetical details for your software development project. Here's a more detailed breakdown of the project elements you requested:

Use Cases:

1. Client intake and registration
2. Case assignment to social workers
3. Service planning and goal setting
4. Progress tracking and note-taking
5. Resource management and referrals
6. Appointment scheduling
7. Document management and file uploads
8. Reporting and analytics
9. Secure messaging between staff and clients
10. Mobile access for field workers

LLM Response (cont'd):

Budget:

Total budget: \$3.5 million

Breakdown:

- Personnel costs: \$2.5 million
- Software licenses and infrastructure: \$500,000
- Training and change management: \$300,000
- Contingency: \$200,000

Schedule:

- Q1 2024: Requirements gathering and initial design
- Q2 2024: Core development of main modules
- Q3 2024: Integration, testing, and refinement
- Q4 2024: User acceptance testing, training, and deployment

Key milestones:

1. Requirements sign-off: March 15, 2024
2. Prototype demo: May 30, 2024
3. Beta release: September 1, 2024
4. User acceptance testing completion: November 15, 2024
5. Go-live: December 15, 2024

Risks:

1. Data migration complexities from legacy systems
2. User adoption challenges due to change resistance
3. Integration issues with external systems (e.g., government databases)
4. Potential budget overruns due to scope creep
5. Cybersecurity concerns related to sensitive client data
6. Delays in decision-making from stakeholders
7. Regulatory compliance changes during development

LLM Response (cont'd):

Technical Architecture:

1. Front-end: React.js for web application, React Native for mobile app
2. Back-end: Node.js with Express.js framework
3. Database: PostgreSQL for relational data, MongoDB for unstructured data
4. API: RESTful API with GraphQL for complex queries
5. Authentication: OAuth 2.0 with multi-factor authentication
6. Hosting: Cloud-based infrastructure (AWS)
7. CI/CD: Jenkins for continuous integration and deployment
8. Monitoring: ELK stack (Elasticsearch, Logstash, Kibana) for log management and monitoring
9. Security: End-to-end encryption, regular security audits, and penetration testing
10. Scalability: Microservices architecture for easier scaling and maintenance

Would you like me to elaborate on any of these areas or provide additional information for your project status reporting system simulation?

LLM Response (cont'd):

D Please provide hypothetical details for the client, including the business sponsor, product owner, and end users who will be involved in receiving training and conducting UAT.

Certainly, I'll provide hypothetical details for the client, including key stakeholders and end users.

Client Organization: Sunnyvale County Department of Human Services

Business Sponsor:

Name: Dr. Emily Chen

Title: Director of Sunnyvale County Department of Human Services

Background: Dr. Chen has been with the department for 15 years and has a strong vision for modernizing their case management processes. She's the primary decision-maker for budget approvals and overall project direction.

Product Owner:

Name: Marcus Rodriguez

Title: Senior Program Manager, IT Services

Background: Marcus has worked in the department for 8 years and has extensive knowledge of the current systems and processes. He acts as the liaison between the development team and the department's various divisions.

Key Stakeholders:

1. Sarah Thompson - Deputy Director of Child Welfare Services
2. James Wilson - Head of Adult Protective Services
3. Lisa Nakamura - Chief Information Officer
4. David Okonkwo - Director of Finance and Administration

LLM Response (cont'd):

End Users (for training and UAT):

1. Case Workers:

- Maria Garcia - Senior Case Worker, Child Welfare Services (10 years experience)
- John Smith - Case Worker, Adult Protective Services (5 years experience)
- Aisha Patel - Case Worker, Foster Care Services (3 years experience)
- Robert Chen - Case Worker, Elder Care Services (7 years experience)

2. Supervisors:

- Elizabeth Brown - Supervisor, Child Welfare Services
- Michael Lee - Supervisor, Adult Protective Services

3. Administrative Staff:

- Jennifer White - Administrative Assistant, Intake and Referrals
- Carlos Mendez - Data Entry Specialist

4. IT Support:

- Samantha Johnson - IT Support Specialist
- Kevin O'Brien - Systems Analyst

5. Management:

- Rachel Green - Program Manager, Family Services
- Thomas Nguyen - Quality Assurance Manager

Training Plan:

- 3 weeks of phased training sessions
- Mix of in-person workshops and online modules
- Train-the-trainer approach for department superusers

LLM Response (cont'd):

UAT Participants:

- A cross-section of 20 end users from various roles and departments
- 2-week UAT period scheduled from November 1-15, 2024
- Daily feedback sessions and bug reporting

Client Expectations:

- Improved efficiency in case management processes
- Better data accuracy and reporting capabilities
- Enhanced collaboration between departments
- Increased mobile access for field workers
- Compliance with latest data protection regulations

Would you like more details on any of these aspects or information about other areas of the client organization?

LLM Response (cont'd):

D Please provide additional details on risks associated with the project budget.

Certainly. Here are additional details on risks associated with the project budget for the Sunnyvale County Department of Human Services case management system:

1. Scope Creep:

- **Risk:** Stakeholders requesting additional features mid-project.
- **Impact:** Could increase development costs by 15-20%.
- **Mitigation:** Implement a strict change control process with cost impact analysis for each new request.

2. Underestimated Complexity:

- **Risk:** Integration with legacy systems more complex than initially assessed.
- **Impact:** Potential 10-15% increase in integration costs.
- **Mitigation:** Conduct thorough system audits early; allocate buffer for integration tasks.

LLM Response (cont'd):

3. Resource Cost Fluctuations:

- Risk: Skilled developer costs increasing due to market demand.
- Impact: Possible 5-8% increase in personnel costs.
- Mitigation: Lock in rates with contractors; consider hiring bonuses for key positions.

4. Technology Licensing Changes:

- Risk: Unexpected increases in software licensing costs.
- Impact: Could add 3-5% to overall budget.
- Mitigation: Negotiate multi-year contracts with vendors; explore open-source alternatives where feasible.

5. Data Migration Challenges:

- Risk: Data cleansing and migration more time-consuming than expected.
- Impact: Potential 10% increase in data migration budget.
- Mitigation: Allocate more resources to data analysis phase; use automated tools for data cleansing.

6. Cybersecurity Enhancements:

- Risk: Evolving security threats requiring additional protective measures.
- Impact: May necessitate 5-7% increase in security-related costs.
- Mitigation: Build in security contingency fund; prioritize security features in sprint planning.

7. Training Overruns:

- Risk: End-users requiring more extensive training than planned.
- Impact: Could increase training budget by 10-15%.
- Mitigation: Develop comprehensive training materials; implement a train-the-trainer program.

LLM Response (cont'd):

8. Regulatory Compliance Changes:

- Risk: New regulations requiring system modifications.
- Impact: Potential 5-10% increase in development and testing costs.
- Mitigation: Stay informed of upcoming regulations; build adaptable, modular system architecture.

9. Infrastructure Scaling Needs:

- Risk: Underestimating cloud infrastructure requirements.
- Impact: Possible 8-12% increase in hosting and infrastructure costs.
- Mitigation: Implement robust load testing; design for scalability from the outset.

10. Delayed Decision Making:

- Risk: Stakeholder indecision leading to idle developer time.
- Impact: Could result in 3-5% budget waste.
- Mitigation: Establish clear decision-making timelines; have backup tasks for development team.

11. Currency Exchange Rate Fluctuations:

- Risk: Unfavorable changes in exchange rates for international vendors or resources.
- Impact: Potential 2-3% increase in certain cost categories.
- Mitigation: Use forward contracts or other hedging strategies for significant international expenses.


LLM Response (cont'd):

12. Contingency Fund Depletion:

- **Risk:** Early use of contingency funds leaving no buffer for later stages.
- **Impact:** Increased financial strain in later project phases.
- **Mitigation:** Implement tiered release of contingency funds tied to project milestones.

Would you like me to elaborate on any of these risks or provide information on other budget-related aspects of the project?

D What is the Project name?

 Edit

I apologize for not including that important detail earlier. Let's give this project a name:

The project name is "Project COMPASS" (Comprehensive Online Management Platform for Agency Social Services).

This name reflects the goal of the software to guide and direct the agency's case management activities, much like a compass. It also forms an acronym that's easy to remember and use in project communications.

Would you like me to incorporate this project name into any of the previously provided details or generate any project artifacts using this name?

Status Report (using ChatGPT)

Project Status Report: Project COMPASS

Project Overview:

Project COMPASS (Comprehensive Online Management Platform for Agency Social Services) aims to modernize case management processes for Sunnyvale County Department of Human Services.

Budget: \$3.5M

- **Personnel:** \$2.5M
- **Software & Infrastructure:** \$500K
- **Training & Change Management:** \$300K
- **Contingency:** \$200K

Schedule:

- **Q1 2024:** Requirements & Design
- **Q2 2024:** Development
- **Q3 2024:** Testing & Integration
- **Q4 2024:** Deployment & UAT

Please generate a one page Project Status Report for this project. The content should be suitable for a high level view on a single PowerPoint slide.

Current Status:

- Development is on track with core modules completed. Preparations are underway for the upcoming integration and testing phase.
- Focus areas for the next quarter include enhancing cybersecurity measures and finalizing data migration strategies.

Status Report (using ChatGPT)

Milestones:

- **Requirements Sign-off:** March 15, 2024
- **Prototype Demo:** May 30, 2024
- **Beta Release:** September 1, 2024
- **UAT Completion:** November 15, 2024
- **Go-live:** December 15, 2024

Key Risks:

- Integration issues with legacy systems
- User adoption challenges
- Potential budget overruns due to scope creep
- Cybersecurity concerns

Technical Architecture:

- **Front-end:** React.js and React Native
- **Back-end:** Node.js with Express.js
- **Database:** PostgreSQL & MongoDB
- **Hosting:** AWS Cloud

Client & Stakeholders:

- **Business Sponsor:** Dr. Emily Chen, Director
- **Product Owner:** Marcus Rodriguez, Senior Program Manager
- **Key Users:** Social workers, administrative staff, IT support

Status Report - Summary

Project COMPASS Status Update

Objective:

Develop a comprehensive management platform to modernize case management for Sunnyvale County's Human Services.

Overall Status: On Track

Budget:

Total: \$3.5M

Spent: [Insert current expenditure]

Remaining: [Insert remaining budget]

Timeline:

- **Start Date:** January 2024
- **Expected Go-Live:** December 15, 2024

Key Milestones Achieved:

- Requirements sign-off completed
- Prototype development underway

Please summarize the project status at a high level, that will fit on one PowerPoint slide.

Next Steps:

- Begin core module development in Q2
- Prototype demonstration by May 30, 2024

Major Risks:

- Integration complexities with existing systems
- Potential budget overruns from scope changes
- User adoption challenges

Progress by Phases:

- **Design:** 100% complete
- **Development:** 25% complete
- **Testing/Integration:** Scheduled for Q3
- **Deployment:** Scheduled for Q4

Stakeholder Engagement:

- Active involvement from IT, child welfare, and adult services

Project Communications Plan

Please provide a Communications Plan for the project, showing the communications activity, medium, audience, date sent, and status of the communications activity. This content should be presented in a table format and concise enough to fit on one slide.

| Activity | Medium | Audience | Date Sent | Status |
|------------------------------|-------------------|---------------------------------|--------------|-----------|
| Project Kickoff Announcement | Email | All Stakeholders | Jan 5, 2024 | Completed |
| Monthly Progress Update | Email | Key Stakeholders | Feb 1, 2024 | Completed |
| Quarterly Review Meeting | Video Conference | Business Sponsor, Product Owner | Mar 30, 2024 | Scheduled |
| Prototype Demo Invitation | Email | IT Team, End Users | May 20, 2024 | Scheduled |
| Beta Release Notification | Email | Department Heads | Aug 25, 2024 | Scheduled |
| User Training Schedule | Email | End Users | Oct 10, 2024 | Pending |
| UAT Kickoff | In-person Meeting | UAT Participants | Nov 1, 2024 | Pending |
| Go-Live Announcement | Email | All Employees | Dec 1, 2024 | Pending |
| Post-Deployment Feedback | Online Survey | All Users | Dec 20, 2024 | Pending |
| Project Closure Summary | Email | All Stakeholders | Jan 10, 2025 | Planned |



Image Generation – using DALL·E 3

First attempt:

Please generate an image that represents a social services software system called COMPASS. One example image would be an abstract representation of a case file or folder, with a compass needle overlaid on top.

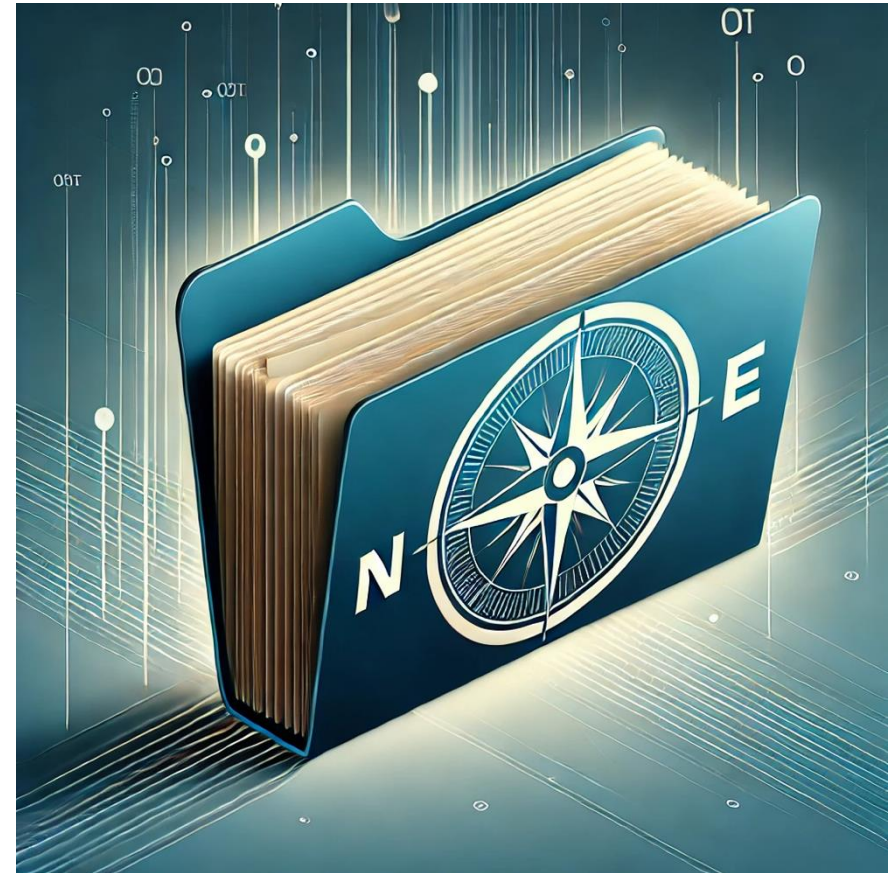


Image Generation – using DALL·E 3

Second attempt:

Please adjust the letters that represent direction so that N, S, E, W are in the proper orientation.



Image Generation – using DALL·E 3

Third attempt:

The letter N should be on top, letter E on the right side, letter S on the bottom, and letter W on the left side.



Image Generation – using DALL·E 3

Fourth attempt:

The N, S, E, and W letters are not correctly located from a compass perspective. Please try again.



Image Generation – using DALL·E 3

Fifth attempt:

This is not at all correct. To test your knowledge, of spatial directions, please explain the concept and directions of North, South, East, and West.

North, South, East, and West are the four primary cardinal directions used to navigate and describe spatial orientation on Earth.

1. North (N):

- North is the direction that points toward the Earth's North Pole.
- On most maps, North is traditionally placed at the top.
- When facing North, East is to your right, West is to your left, and South is behind you.

2. South (S):

- South is the opposite direction of North, pointing toward the Earth's South Pole.
- On most maps, South is placed at the bottom.
- When facing South, East is to your left, West is to your right, and North is behind you.

3. East (E):

- East is the direction perpendicular to North and South, typically to the right when facing North.
- On most maps, East is placed on the right side.
- When facing East, North is to your left, South is to your right, and West is behind you.

4. West (W):

- West is the opposite direction of East, typically to the left when facing North.
- On most maps, West is placed on the left side.
- When facing West, North is to your right, South is to your left, and East is behind you.

In summary:

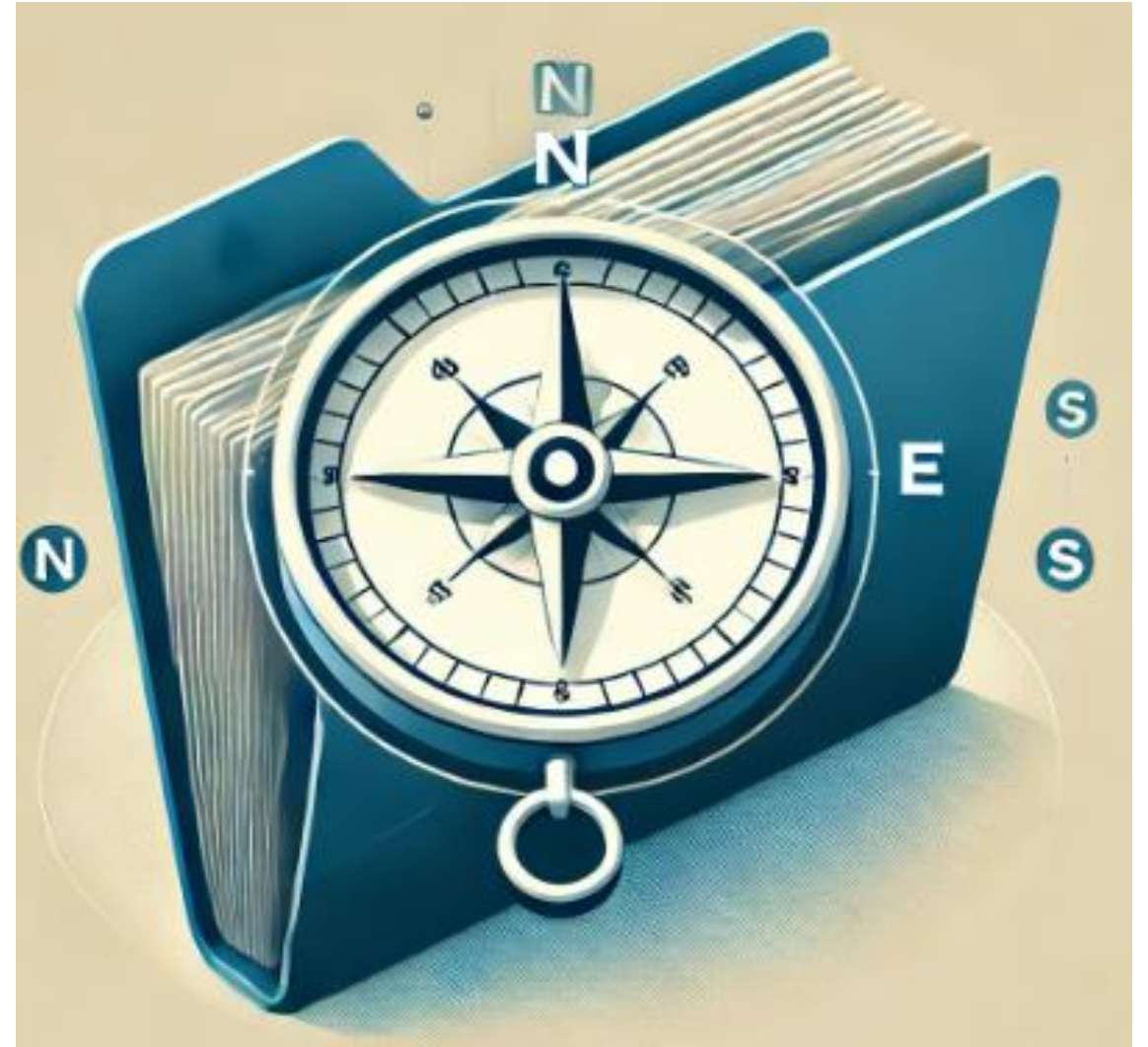
- **North** is up or forward (depending on the context),
- **South** is down or backward,
- **East** is to the right,
- **West** is to the left.



Image Generation – using DALL·E 3

Sixth attempt:

That is correct. Now, given that you understand these directions, please try again to generate the image and correctly place N for North, S for South, E for East, and W for West.



Lessons Learned

Moral of the story...

- Always check the AI's responses
 - It was easy to see that these images were not valid responses
 - Generated responses that are text-based will be harder to validate

Why does this happen?

- Understanding of Context vs. Visual Representation
- Stochastic Nature of Transformers
- Limitations in Spatial Reasoning

Implications for Generative AI

- Need for Post-Processing or Fine-Tuning
- User Expectations vs. Model Capabilities
- Potential for Iterative Improvement

Automated Creation of Status Report in PowerPoint

- Use LLM to create Status Report
- Use LLM to create PowerPoint code in VBA
- In PowerPoint
 - Enable Development tab
 - Select Visual Basic and create a Module
 - Copy code from LLM into the Module
 - Execute the VBA code

AI Tools

OpenAI

- ChatGPT – <https://chatgpt.com/> A chatbot for general purpose natural language use
- GPTs – <https://chatgpt.com/gpts>. Custom versions of ChatGPT, fine tuned for specific tasks
- API – <https://platform.openai.com/docs/api-reference/introduction> provides an interface to the OpenAI models from custom developed applications
- Assistants API – [Assistants overview - OpenAI API](#) to build AI assistants using models fine tuned for specific tasks
- DALL-E3 – <https://openai.com/index/dall-e-3/> image generation capability within ChatGPT

Anthropic

- Claude – <https://claude.ai> An AI assistant capable of conversation and text-processing, focused on helpful, predictable, and harmless content.

PMI

- Infinity – <https://www.pmi.org/membership/infinity> An AI assistant for project management professionals

Plus numerous others



Summary

- Generative AI tools, (large language models) can assist project managers in performing various tasks
 - Planning
 - Status reporting
 - Drafting communications
- Content needs to be reviewed and validated
- Obtain organization approval before uploading company information into a vendor's LLM
- Never upload PII into a public LLM
- LLMs can be deployed using open-source models in local, private systems

Summary (by the LLM)

Benefits:

- 1. Time efficiency:** AI tools can quickly generate draft reports, saving the project manager significant time in compiling and formatting information.
- 2. Consistency:** AI can help maintain a consistent reporting style and structure across multiple reports and team members.
- 3. Data integration:** Advanced AI tools can potentially pull data from various project management systems, providing a more comprehensive view of the project status.
- 4. Scenario analysis:** AI can rapidly generate multiple "what-if" scenarios, helping in risk assessment and decision-making.
- 5. Language optimization:** AI can improve the clarity and readability of reports, potentially enhancing communication with stakeholders.

Risks:

- 1. Data accuracy:** AI-generated content may contain inaccuracies if fed incomplete or incorrect data, potentially leading to misinformed decisions.
- 2. Over-reliance:** Project managers might become too dependent on AI tools, potentially losing touch with the nuances of the project.
- 3. Confidentiality concerns:** Using external AI tools may raise issues about data security and confidentiality, especially for sensitive project information.
- 4. Loss of personal touch:** Overuse of AI-generated content might lead to reports lacking the personal insights and context that experienced project managers provide.
- 5. Misinterpretation of complex situations:** AI might struggle to accurately capture and convey complex project dynamics or interpersonal issues.
- 6. Learning curve and integration:** Implementing AI tools may require time for team members to learn and integrate them into existing workflows.



THANK YOU

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