

IME 100 Interdisciplinary Design and Manufacturing

Introduction to Project Management

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What is a Project?

A project is a temporary endeavour undertaken to create a unique product or service.

- performed by people
- constrained by limited resources
- planned, executed and controlled

Examples

- developing a new product or service
- effecting change in a structure, staffing or style of an organisation
- designing a new transportation vehicle
- developing or acquiring a new or modified information system
- constructing a building or facility



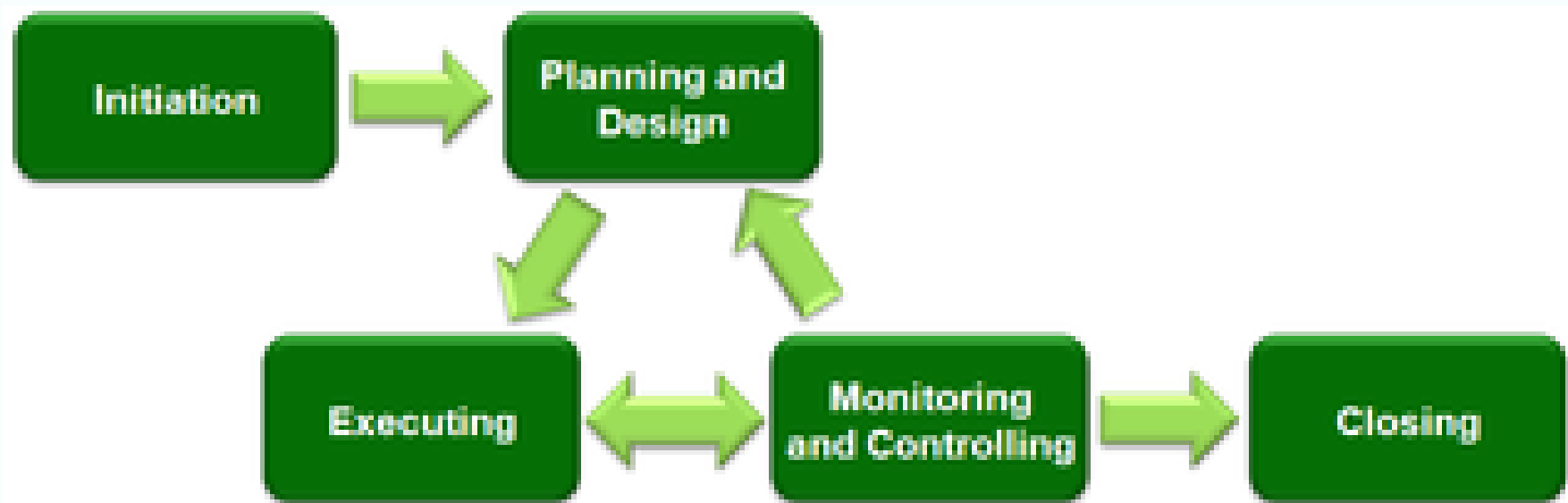
Project features

- Temporary
 - A project has a definite beginning and definite end
 - The duration of a project is finite
 - The opportunity or market window is usually temporary, most projects have a limited time frame in which to produce the product or service
 - The project team - as a team - seldom outlives the project. Most projects are performed by a team created for the sole purpose of performing the project
- Unique result
 - Projects involve doing something that **has not been done before** in the same environment
 - The project may require some innovation to be completed



Project Management

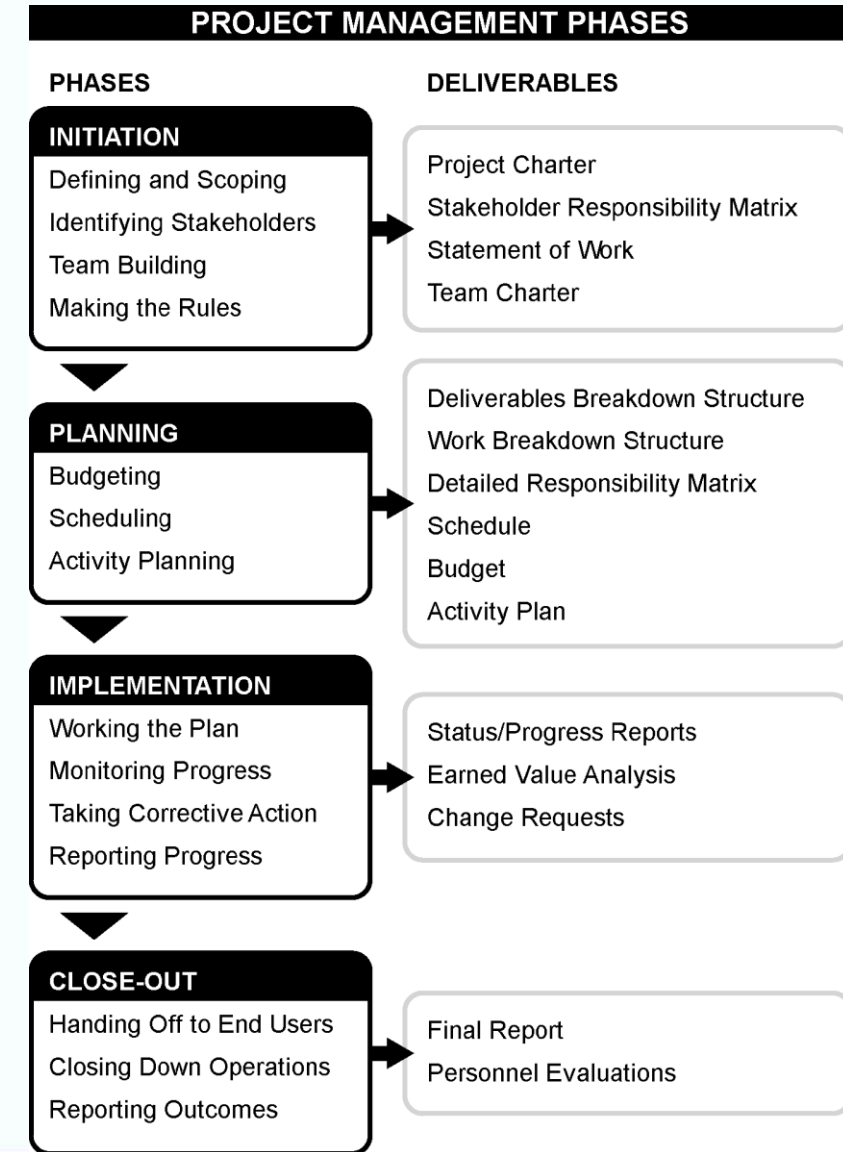
Practice of initiating, planning, executing, controlling, and closing the work of a team to achieve specific goals and meet specific success criteria at the specified time.



The Project life Cycle

- Initiation
- Planning
- Monitoring
- Execution
- Closing

How does this relate to your projects at your Coop or the projects in this class?



Role of the Project Manager

- Leader
- Planner
- Organizer
- Controller
- Communicator
- Negotiator
- Peace Maker
- Advocate
- Risk Manager

Split into groups of 4 or 5 and identify at least 8 characteristics required to be a good project manager



Group Dynamics

Richard Tuckman's theory of group development states that all teams must go through five phases during their natural life cycles:

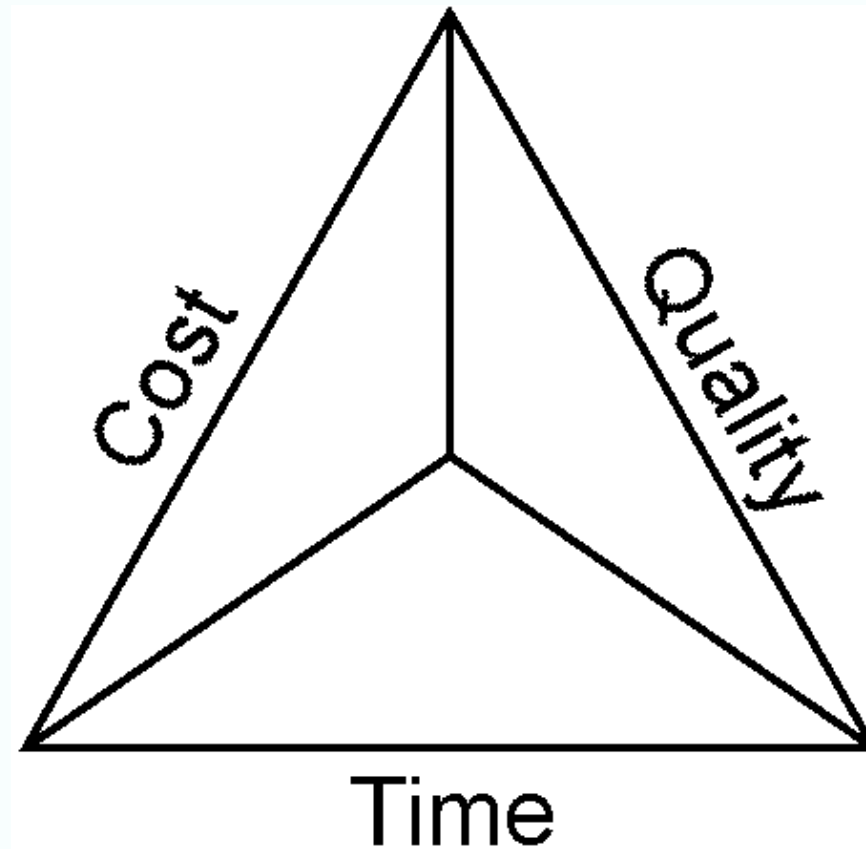
1. Forming
2. Storming
3. Norming
4. Performing
5. Adjourning

Clever rhyming scheme aside, this is a great way to assess group dynamics happening in your team.

<https://www.youtube.com/watch?v=ysWWGf8VsOg>



3 Factors of Project Success



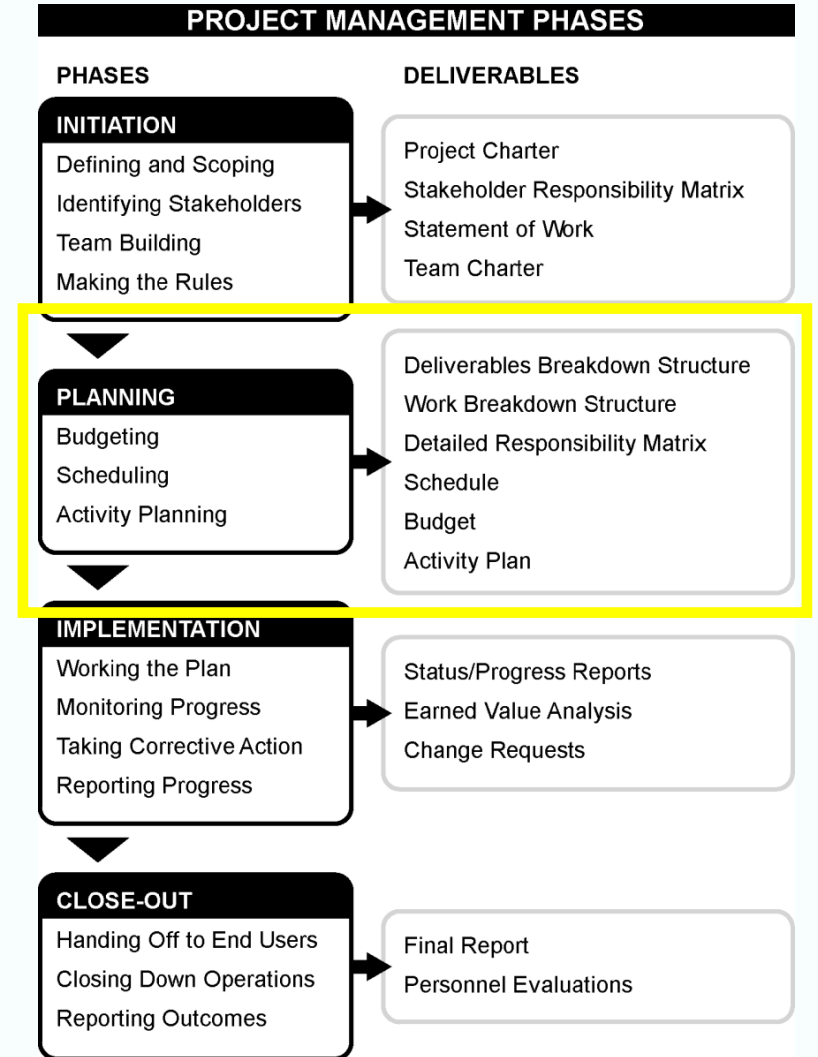
Project Management Laws

- **Murphy's Law** – Anything that can go wrong, will go wrong.
- **Finagle's Law of Dynamic Negatives** or Finagle's Corollary to Murphy's Law - Anything that can go wrong, will – at the worst possible moment.
- **Hofstadter's Law** – It always takes longer than you expect, even when you take into account Hofstadter's law.
- **Parkinson's Law** – Work expands so as to fill the time available for its completion.

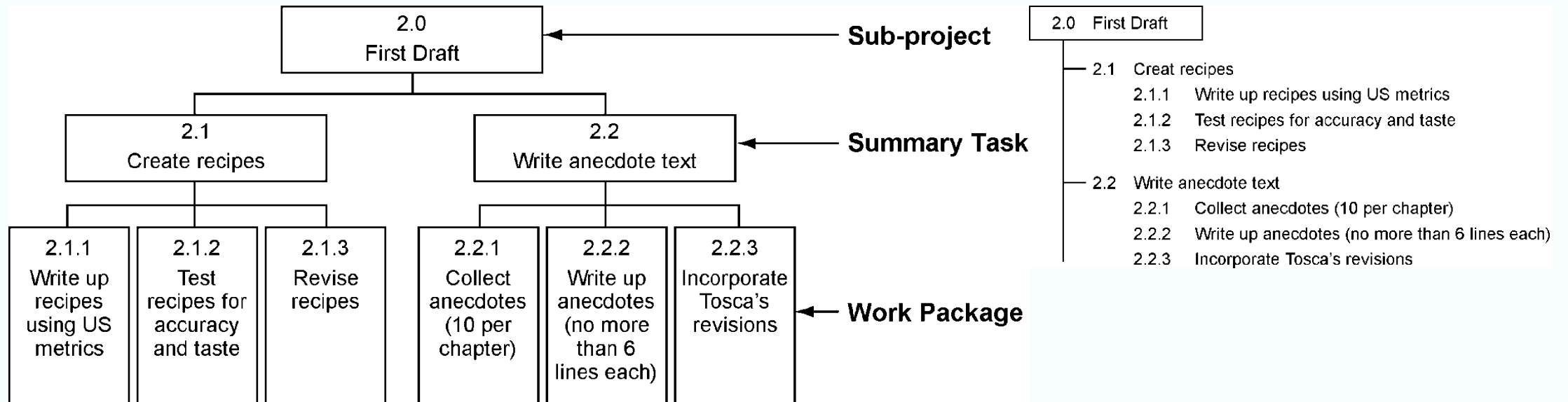


The Project Management Life Cycle

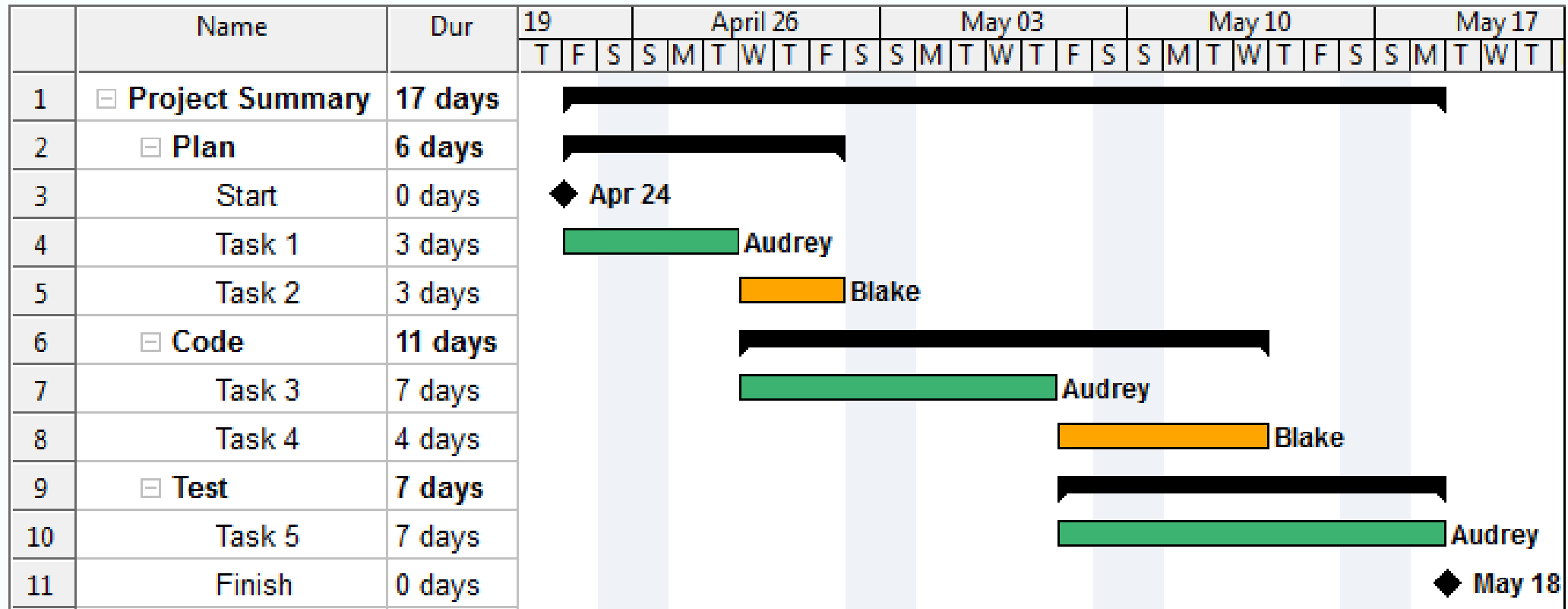
- Importance of planning
 - Discuss as a group how you can improve the planning for your projects
 - Did your planning include provisions for murphy's law?



Work Breakdown Structure



Gantt Chart



Project Budget

| Cost Element | Description | Formula |
|------------------|--|---|
| Labor | People costs, including overtime | <ul style="list-style-type: none">• (regular hours x hourly rate) + (overtime hours x overtime rate)• + pro-rated overhead and fringe benefits |
| Equipment | Purchase, lease, or rental price and the cost of usage | <ul style="list-style-type: none">• Purchase price• lease or rental price x time period• Pro-rated usage fees |
| Facilities | The cost of the space to house the team, utilities, and services | <ul style="list-style-type: none">• Rental cost x time period• Organizational burden rate x time period |
| Supplies | Consumables | <ul style="list-style-type: none">• Estimated volume x cost + inflation adjustment |
| Special expenses | | <ul style="list-style-type: none">• Estimated cost |



Balance the Budget and Schedule

- Shorten the schedule
- Lengthen the schedule
- Increase the budget
- Change the scope
- Change the expected quality



Musical Instrument

- Identify team member roles and instrument (10 mins)
 - Elect communications manager, operations manager, project manager, design manager ...
- Project Proposal (45 mins)
 - Brainstorm design Ideas for instrument design and manufacturing process
 - Identify the tasks/sub-tasks Create a WBS
 - Identify resources needed (Budget for items needing to be purchased)
 - Create timeline (Gantt) for project
 - Create the document (~2 – 4 pages)

Due on Monday Next week!



Section 2 (Mock Competition Thu Week 6)

1. 10:30 AM SmellslikeTeamSpirit vs BusinessMajors
2. 10:35 AM TechnicalDifficulties vs KetteringBuilt
3. 10:45 AM W1 vs W2
4. 10:50 AM L1 vs L2



Section 3 (Mock Competition Thu Week 6)

1. 2:50 PM Saucy7 S vs Vexy
2. 2:55 PM DDD vs MeTeam
3. 3:05 PM W1 vs W2
4. 3:10 PM L1 vs L2

