Intro to Agile & Efficient Computing

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Course Goals

Improve software skills

Making the right product:

- Understanding and delivering what the stakeholders want
- Being effective

Making the product right:

- Using good processes and tools
- Being efficient

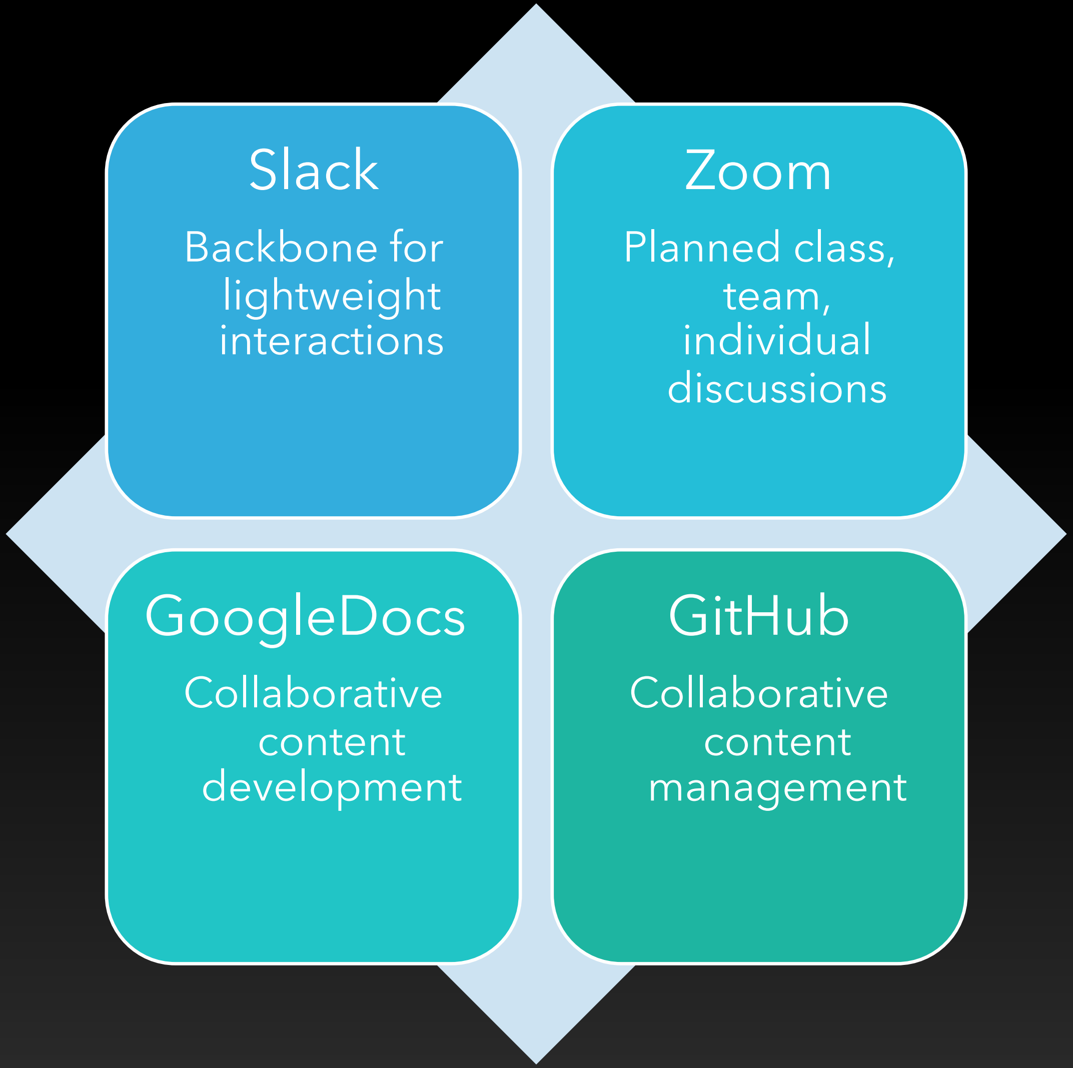
Use computing for insight

Use data, algorithms in simulations

- Random sampling for gnarly problems
- Past results for future prediction

Estimate and simulate for decision support

Communication tools



Slack

Backbone for lightweight interactions

Zoom

Planned class, team, individual discussions

GoogleDocs

Collaborative content development

GitHub

Collaborative content management

Slack: Creating persistent presence

- Enables a virtual team room experience
- Have it on your phone, desktop, tablet, Apple Watch
- Monitor it regularly

Expectations

Keep course goals in mind

- Effective and efficient software product development
- Insight using computing

Be transparent

- Communicate to me and your team about opportunities, challenges
- Communicate early, when issues are just emerging and easier to address

Commit

- Stay focused
- Adapt as needed

Class time protocols

1. Be on time: We will start right way, most days

2. If comfortable, use your camera when remote and talking

3. Feel free to have your camera off, especially if it permits you to move around a bit

4. Be flexible with me, yourselves, others

Software Projects

Pi Estimator

- Individual project to jumpstart our efforts
- Java + random numbers

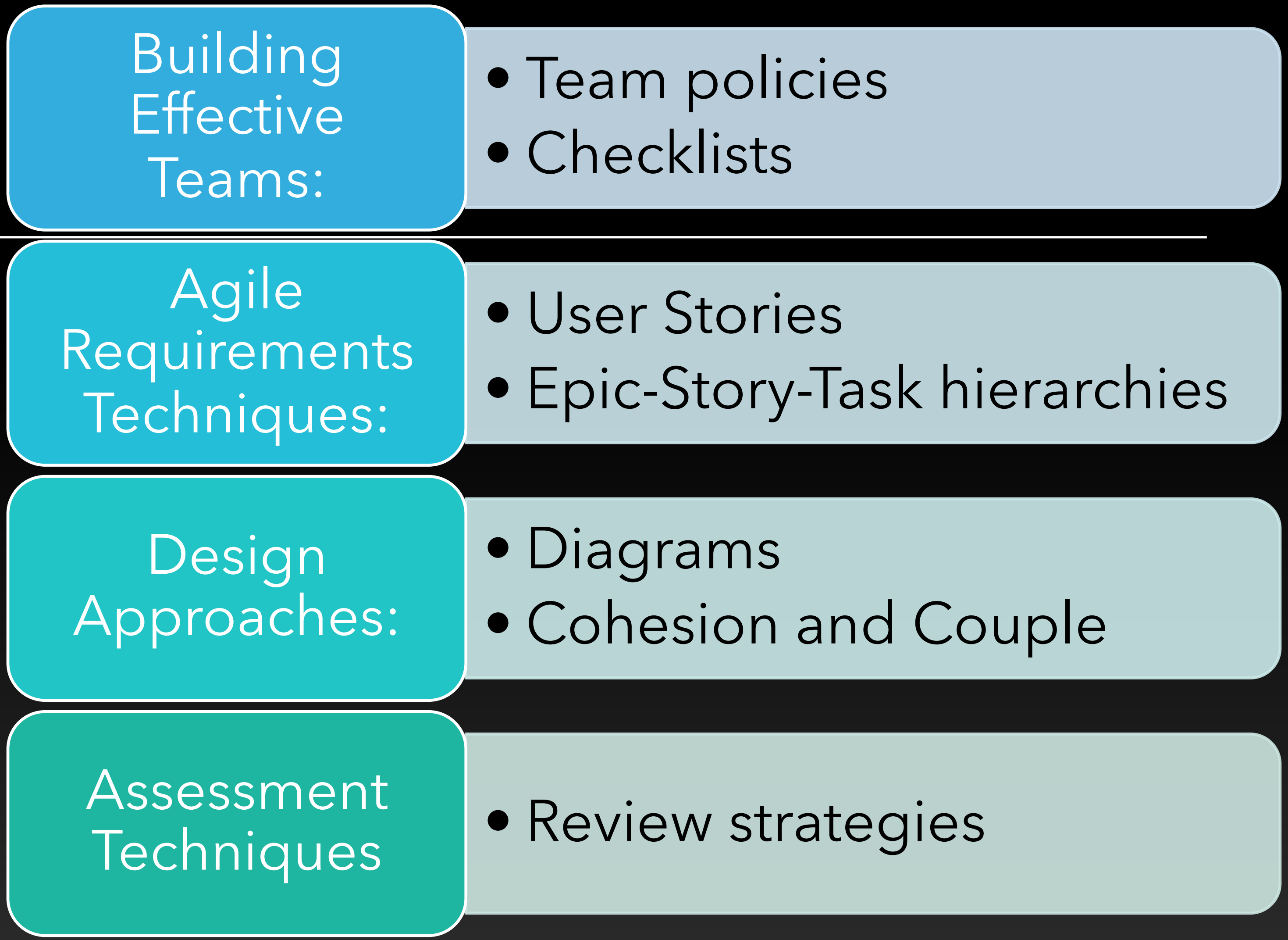
Solitaire Simulator

- Team project
- Use Monte Carlo techniques to estimate winning percentage
- Improve software design skills
- Use a new language (Python or C++)

March Madness

- Team project
- Use data (and basic database concepts) and analysis to predict team rankings

Major Software Topics



Building Effective Teams:

- Team policies
- Checklists

Agile Requirements Techniques:

- User Stories
- Epic-Story-Task hierarchies

Design Approaches:

- Diagrams
- Cohesion and Couple

Assessment Techniques

- Review strategies

Project Management

Project Tuning Knobs:

- Cost - $
- Scope – Work to be done
- Schedule – Timeline

Kanban:

- Backlog, In Progress, Done, and more
- Alternative to Scrum
- Kanban-and vs Scrum-but

Resources

https://maherou.github.io/Teaching