PROJECT MANAGEMENT

PMU199: Intro to Game Design

Context for Game Design

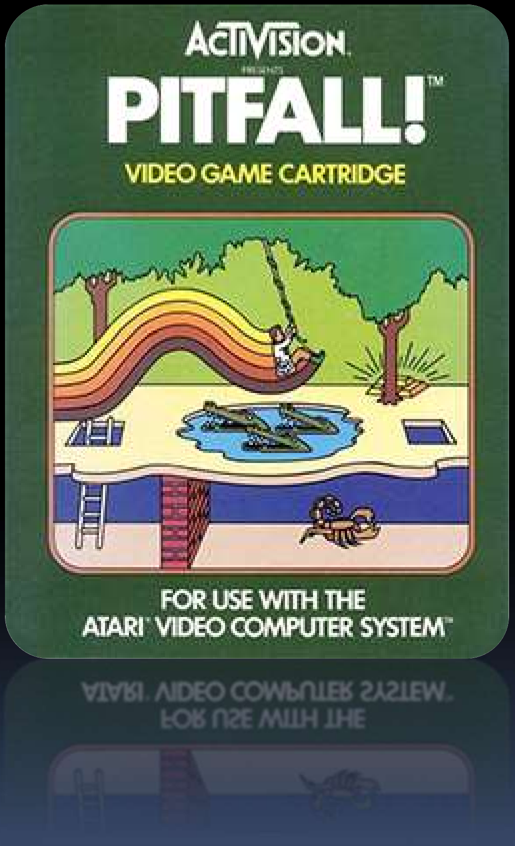
- Game development is an agile development process.
    - Incremental development
        - Demonstrable product
        - Product milestones
    - Small groups
    - Changing requirements
    - Unexpected developments

Recommended approach

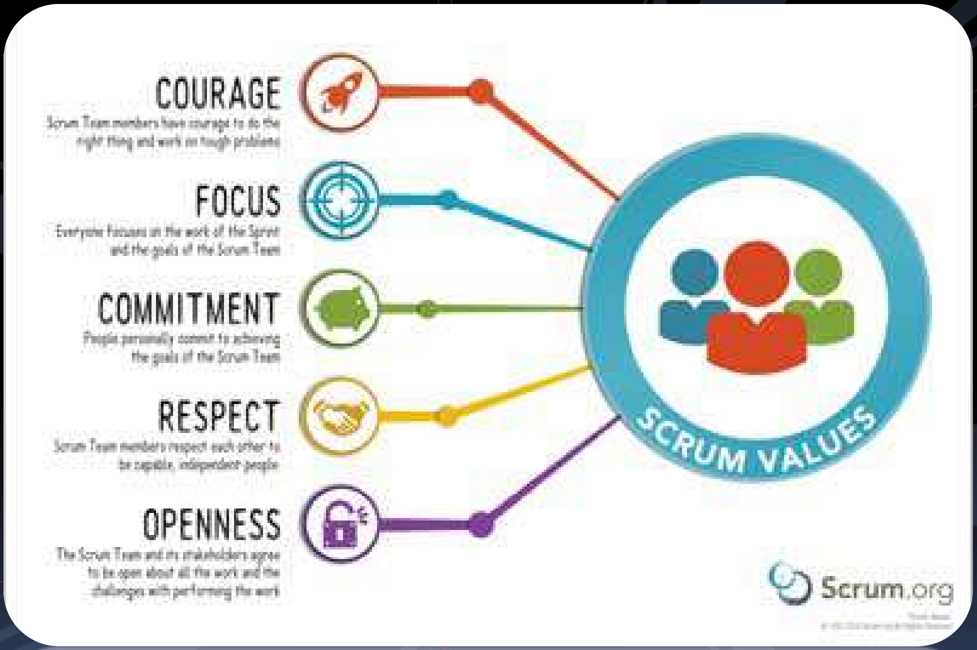
- Constant communication
- Working build
- Shared workspace
- Team development
- Prioritize features
- Playtesting Playtesting Playtesting!

Biggest pitfalls

- Lack of communication
  - Diffusion of responsibility
- Lack of planning
  - Last-minute development
  - The curse of demo day
- Navel gazing
  - (Omphaloskepsis?)
- Feature management



Agile Development



COURAGE
Scrum Team members have courage to do the right thing and work on tough problems

FOCUS
Everyone focuses on the work of the Sprint and the goals of the Scrum Team

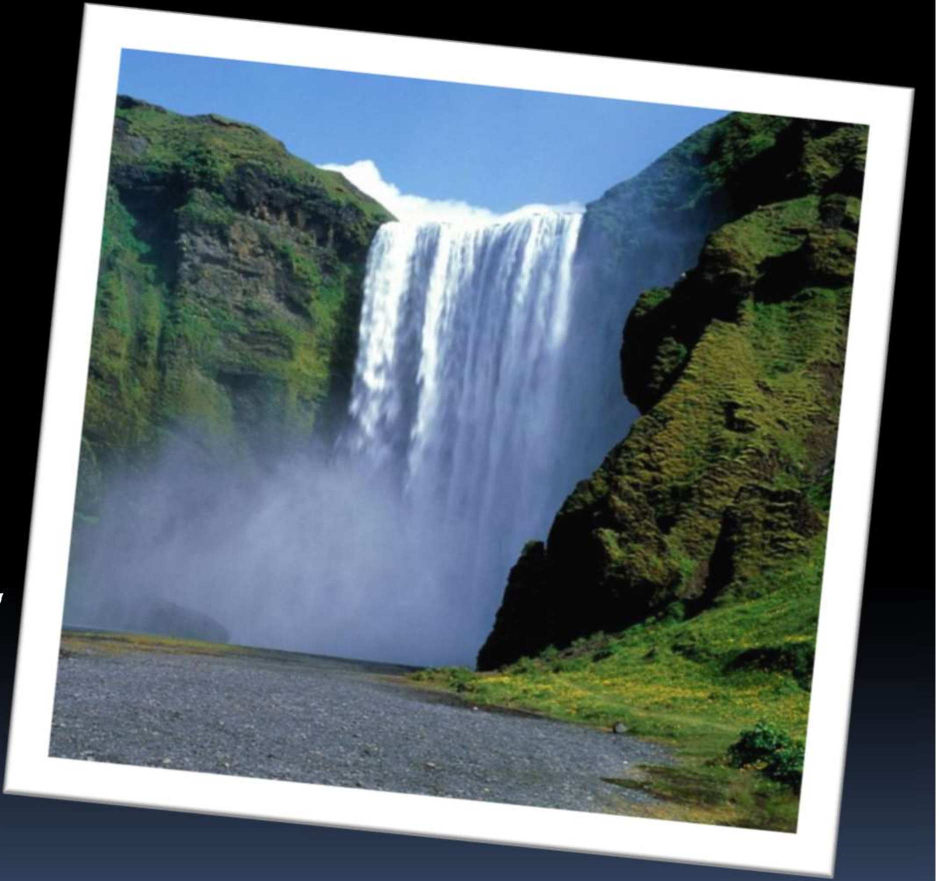
COMMITMENT
People personally commit to achieving the goals of the Scrum Team

RESPECT
Scrum Team members respect each other to be capable, independent people

OPENNESS
The Scrum Team and its stakeholders agree to be open about all the work and the challenges with performing the work

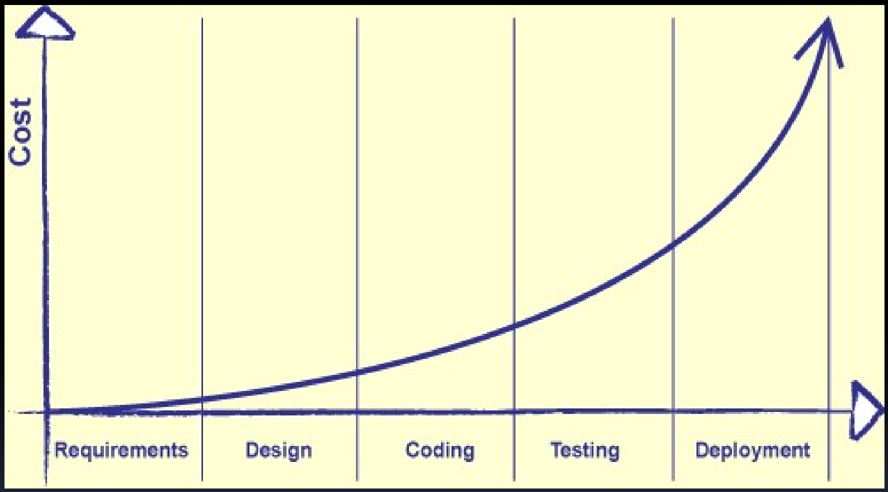
Sturdy Methodologies

- Also known as "traditional" or "waterfall" methods).
  - Underlying philosophy: Measure twice, cut once.
    - Or: The cheapest bug to fix is one that doesn't exist.
  - Inspired by traditional engineering methods, where planning and budgeting is key to winning contracts, and where late changes are expensive and unpopular.
- **Not good for game design.**



Sturdy vs Agile

- Differences in practice are much less than differences in rhetoric.
- Example: Boehm's Curve.



- Need a methodology that responds to this issue.

Agile Methodologies

- "Agile" is a relative term.
  - Lots of small steps, with continuous testing and refactoring.
  - Underlying philosophy: Change is inevitable, so plan for it.
    - Or: "No battle plan ever survives contact with the enemy"
      - Helmuth von Moltke
  - Refers to the sturdy camp (unflatteringly) as BDUF ("Big Design Up Front")
  - Inspired by open source and 1990s web development.

Agile Development
Agility is...
VALUES
adaptability
transparency
simplicity
unity
Strategy
Release
Iteration
Daily
Continuous
Delivery
VISIBILITY
Accelerate Success
VERSIONONE

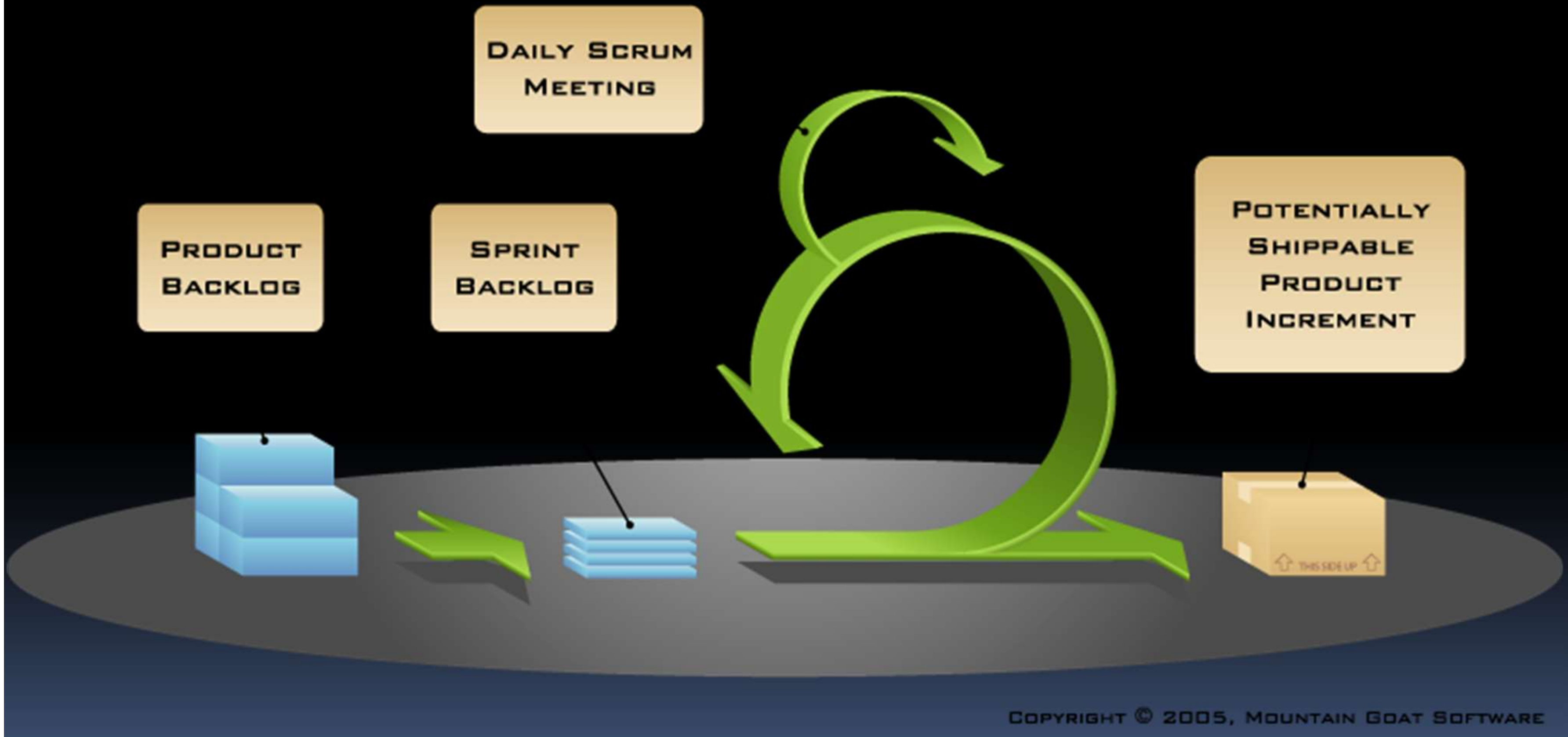
Agile Motivation

- Agile home ground:
  - Low criticality
  - Senior developers
  - Requirements that change often
  - Small number of developers
  - Culture that thrives on chaos
- **Common to game design.**

Implications for you

- So what does this mean for you (individual), you (group) and your project?
  - Your system is *always* buildable and releasable.
    - Easy for us to loop over your commits and check this ☺
  - Regular meetings *with minutes*.
    - Both with client and within group.
  - Issue tracking and prioritization.
  - Comprehensive testing.
  - Refactoring.
  - Collective code ownership.
    - We reserve the right to quiz you on *your team's code* as a part of any exercise.

Scrum at a Glance


Daily Scrum Meeting
Product Backlog
Sprint Backlog
Potentially Shippable Product Increment
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Elements of Scrum

- Product Backlog:
  - A list of things the team hasn't yet implemented
  - Stays forever there until project is done
  - Each item has a priority
  - Visible by client
- Sprint Backlog:
  - Basically, a “to do” list
  - Smaller list of things needed to be done
  - Property of the team
  - Due by next sprint

More Elements of Scrum

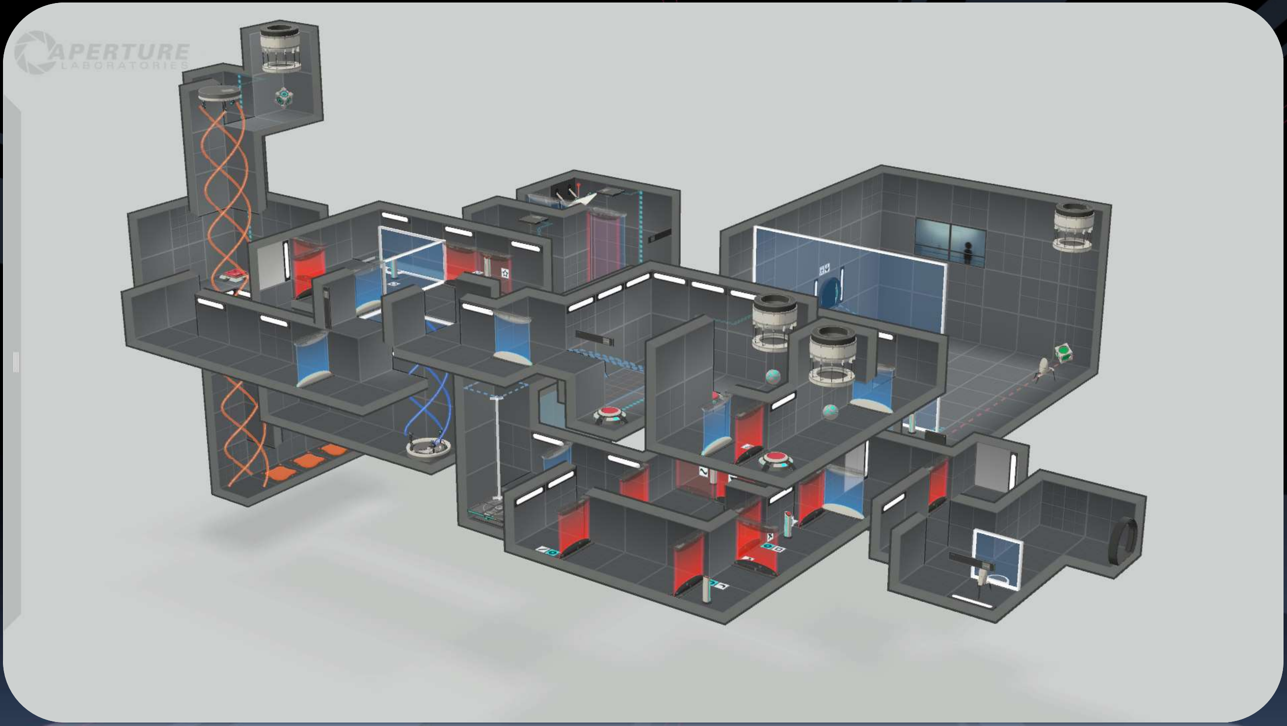
- Sprint:
  - Typically 2-4 weeks long (hence the 30 days)
  - During this time the team gets to finish the sprint backlog items
  - No one is allowed to change the sprint backlog during a sprint
  - Ideally, a team should every 24 hours discuss where they are at in the development

Justification for Scrum

- Scrum takes into account:
  - Things will fall apart because humans are involved.
    - Accept that this problem can't be solved.
    - Work to instead get as much done as possible.
  - Tools
    - Does not discriminate (backlog can be in Excel)
  - Organization
    - Lots of communication is required (lots of meetings/updates)
    - Everybody needs to know how the project is doing.

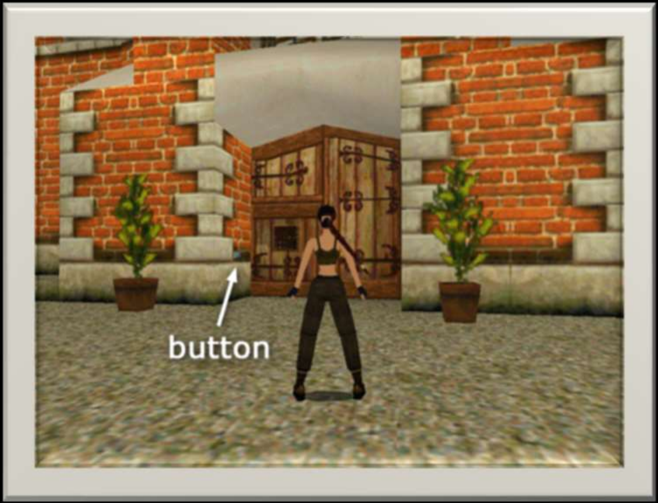
Today’s Activity

Designing a Tutorial Level!



Tutorial Level Reminder

- Tutorial levels are meant to introduce the player to a few main things:
  - How to control the player character,
  - How to interact with the world,
  - What the goals are,
  - What approaches can be used to achieve those goals.



Shown here: Tomb Raider & Fallout 3

Step #1: General Decisions

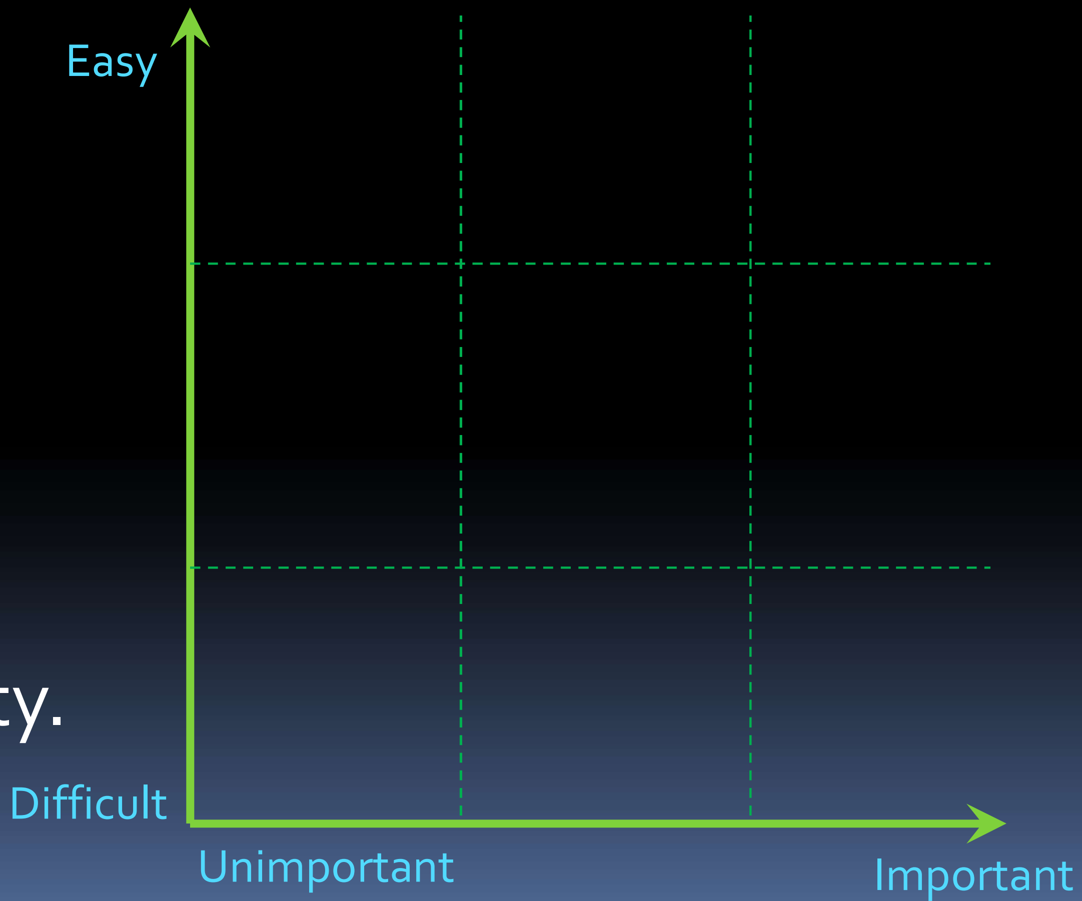
- For each of the following, come up with 3-4 ideas before decising on the next one:
  - What is the general idea of your tutorial level?
  - What will it look like?
  - How will the player be introduced to the different elements of the gameplay?
    - Controls, interacting with the world, goal definition, etc.

Step #2: Feature Lists

- List all the elements that you will need for your tutorial level:
  - <u>Examples:</u>
    - *"Animating main character"*
    - *"Creating level objects"*
- Then, break these down into atomic components:
  - <u>Examples:</u>
    - *"Creating Image #1 for walk animation"*
    - *"Creating coin for tutorial level"*
    - *"Creating interactions for coin objects"*

Feature Lists (cont'd)

- On a piece of paper, create the grid below:
- Number each task and plot it on the grid:
- Then draw contours from top-right to bottom-left to indicate priority.



Step #3: Setting SMART Goals

- SMART goals typically define goals as:
- Specific
  - Well defined
  - Clear to anyone that has a basic knowledge of the project
- Measurable
  - Know if the goal is obtainable and how far away completion is
  - Find out when you have achieved your goal
- Agreed Upon or Attainable
  - Agreement with all the stakeholders what the goals should be
- Realistic
  - Within the availability of resources, knowledge and time
- Time-Based
  - Enough time to achieve the goal
  - Not too much time, which can affect project performance

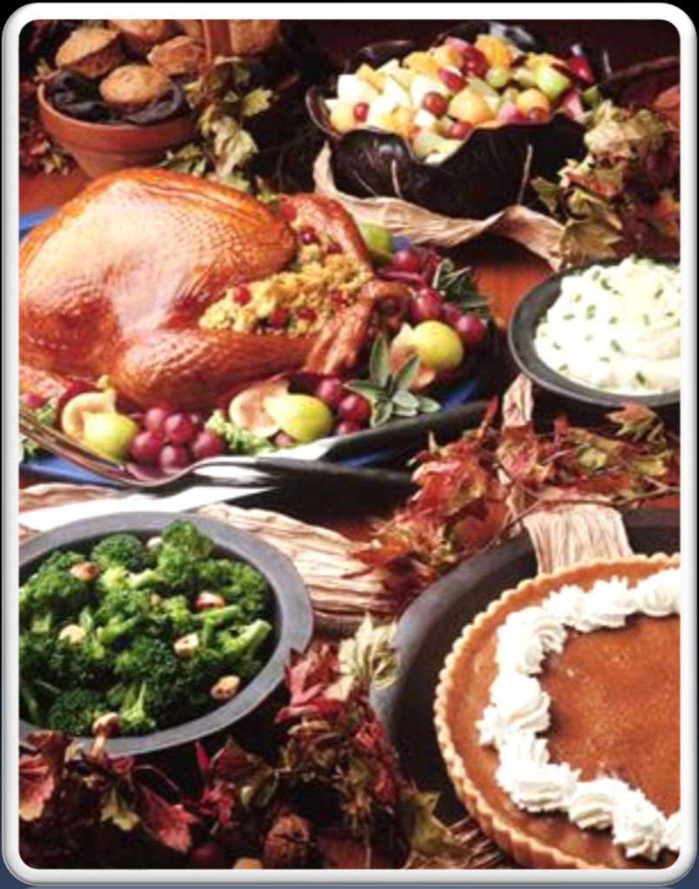
Setting SMART Goals

- Create a shared table like the following:

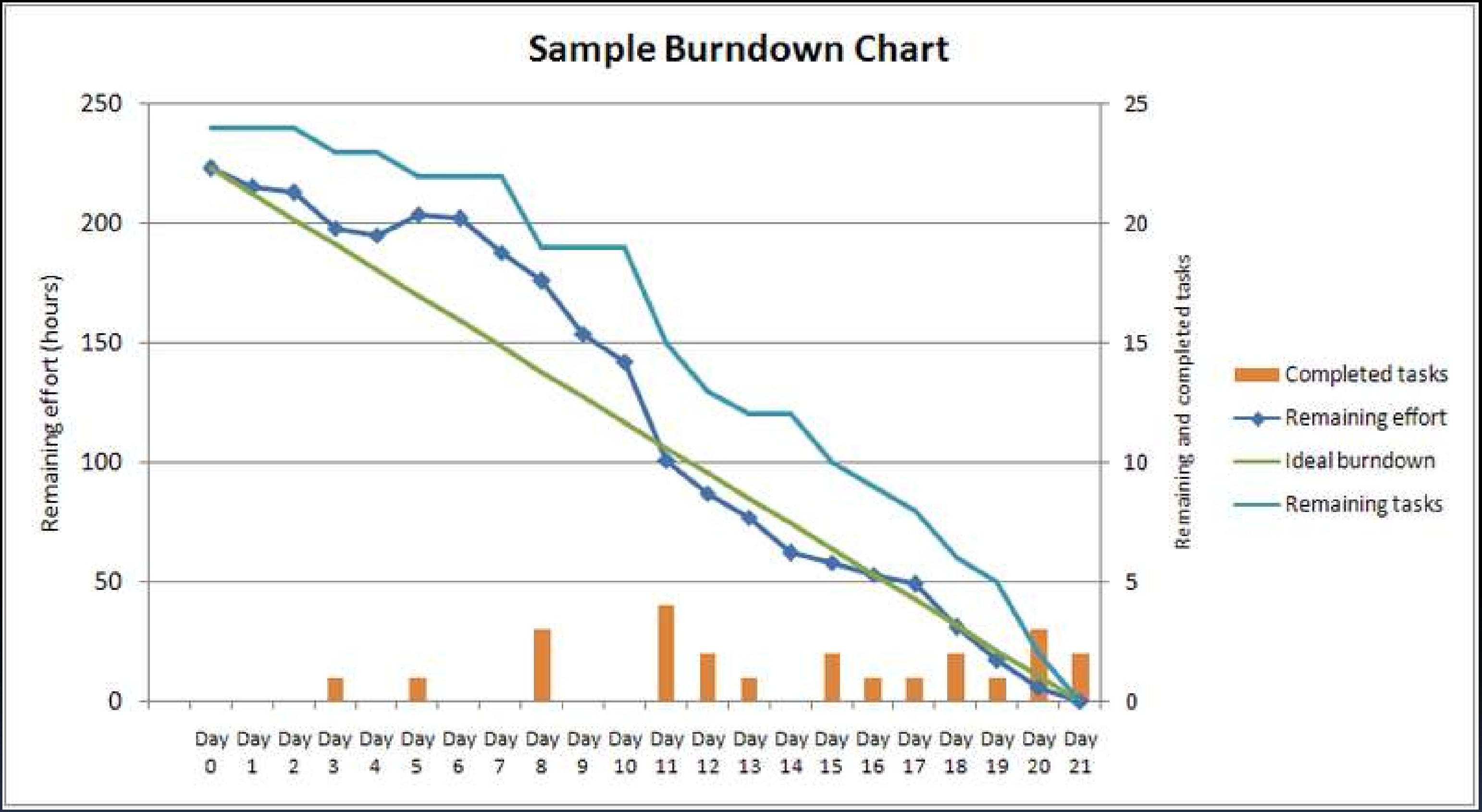
Task	**Time Needed (minutes)**	**Priority (1 = high, 10 = low)**	**Person Responsible**
Finding sprites for walking animation	10	2	Amy
Finding animated coin and star sprites	10	3	Bob
Creating scripts for collecting coins	20	1	Carl
…	…	…	…

Scrum Example: Thanksgiving Dinner

- Roles
- User stories
  - No technical details.
  - When complete, no further consultation with user necessary.
- Product backlog
  - User-side requirements.
  - User sets priority of each item.
- Sprint goals, backlog
  - Developer-side items.
  - Team sets priority of items (prioritization chart).
- Burn down chart
  - Chart of work remaining in sprint backlog.



Burn Down Chart



- If Steve was more diligent, this would be filled with dinner items. Oh well.