Welcome to Project and Portfolio III

Who are we

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Full Midterm Project Process

Applied Human Computer Interaction → **Project and Portfolio II** → **Project and Portfolio III**

- Pre Production
  - Design Document
  - Product Backlog
- AHI Topics
  - Nielsen's heuristics
  - Usability
  - UX

- Core Functionality
  - Critical game systems
  - Interface and UI creation
- First Use/Playable
  - Playable complete Experience
  - Fun factor

- Alpha
  - Full Functionality
  - Example Content
- Beta
  - Content complete
  - Balancing
- Finalizing
  - QA process
  - Presentation

Midterm Project Grading

Grading Scale: Overall Grade

Grading Scale: Team Evaluation

Team Grade

- The team portion of your grade represents the total team accomplishments during the project as a whole.
- Each milestone is graded on its own based on the sprint goals from that milestone
  - During Alpha are all the features completed?
  - During Beta did we replace all placeholders?

ALPHA MILESTONE

GOALS

CRITERIA	EXCELLENT 100%	SATISFACTORY 80%	NEAR STANDARDS 60%	BELOW STANDARDS 40%	INSUFFICIENT 0%
All Features necessary to complete the game are completed and integrated 40 points	Is fully achieved	Is nearly complete Is partially achieved	Is worked on but not achieved	Little work is done on the task Is not achieved	Is completely missing
The game world is populated with at least 1 example of each game object (all game object types) 30 points	Is fully achieved	Is nearly complete Is partially achieved	Is worked on but not achieved	Little work is done on the task Is not achieved	Is completely missing
Overall game progress can be shown (e.g., multiple levels, multiple objectives) 20 points	Is fully achieved	Is nearly complete Is partially achieved	Is worked on but not achieved	Little work is done on the task Is not achieved	Is completely missing
The game contains win/loss conditions	Is fully achieved	Is nearly complete Is partially achieved	Is worked on but not achieved	Little work is done on the task	Is completely missing

Grading Scale: Personal Evaluation

Personal Tasks

- Based on completion of the work that you commit to for the duration of the project.
  - Personal Tasks Completed
    - Completed all assigned userstories with a high level of quality and integrated into the build.
  - Team Practices
    - Updated task board tasks and completed peer reviews of completed userstories.

ALPHA PERSONAL CONTRIBUTION

SPRINT PERSONAL EVALUATION

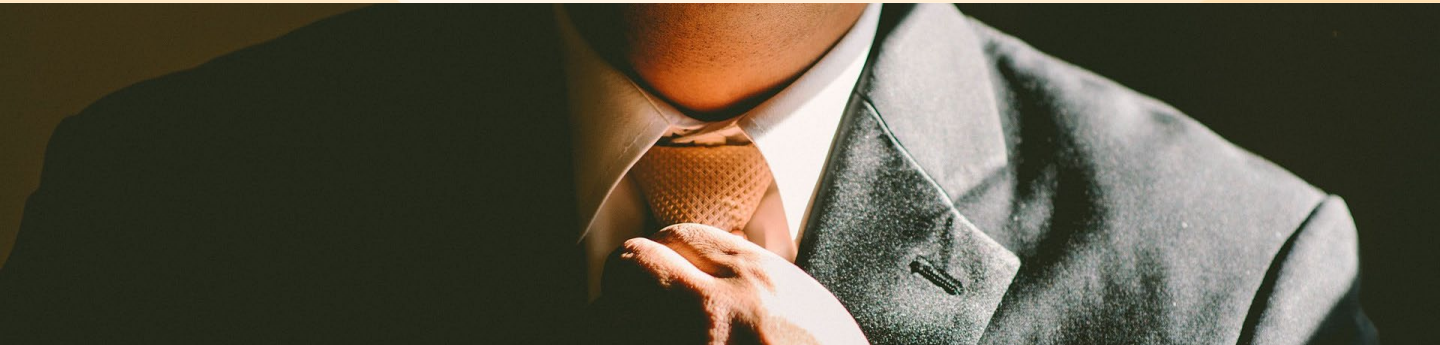
CRITERIA	EXCELLENT 100%	SATISFACTORY 80%	NEAR STANDARDS 60%	BELOW STANDARDS 40%	INSUFFICIENT 0%
Personal Tasks Complete Completes the expected amount of work toward the project while maintaining a high level of quality 70%	Completes all assigned tasks while maintaining a high level of quality of work	Does not complete all tasks assigned or has significant issues in quality	Completes an insufficient amount of tasks on the project	Completes little to no tasks on the project	Does not work on the project
Team Practices Updates task-board tasks on the scrum board showing work progress and completes peer reviews on teammates' tasks 30%	Keeps the scrum board accurate and clean Documents time spent on work Quickly assists in peer check offs	Needs prompting to update the task board to show work and peer review teammates' work	Inconsistently updates tasks, documents time spent on tasks, and completes peer reviews of tasks	Does not update the task board timely enough for use	Never updates the task board

Grading Scale: GPS

Professionalism

- The faculty reserves the right to identify what is considered unprofessional and what constitutes a breach of the assignment.

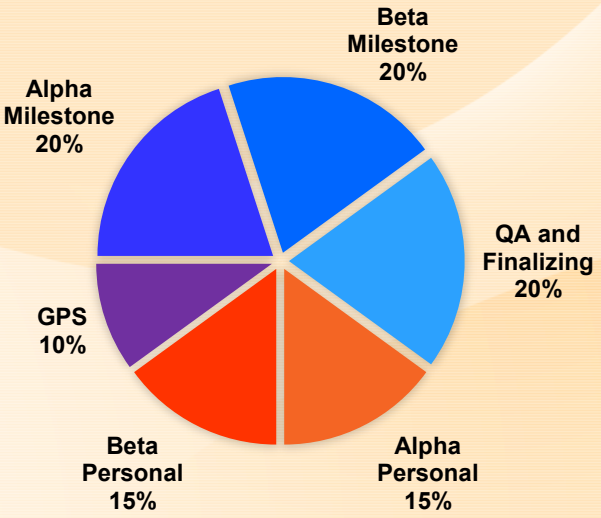
- Common GPS problems include
  - Not complying with imperatives from assigned by CDs
  - Refusal to cooperate with the project methodologies
  - If you choose to come in and work during the other lecture or lab period and are loud or disruptive during the other class' lecture
  - Being off task during free work hours(on campus lectures)



Grading Scale: PP3 Weighting

Overall Weighting

- Project Milestones (Team): 60%
- Personal tasks: 30%
- GPS: 10%



Schedule

Full Time

This is your only class for a reason
- (other than the career module)

- We are now full time dev on this project
- You need to work on the project every day
  - In person is best
  - The 304B classroom or Blackmore are available for you on non class days
- Stay in contact with us and keep communication open

Attendance

Students can miss 10% of their class time unexcused

- The class has 8 lectures (1 lecture is 12.5%)
- This means you can't miss a full lecture without getting the hours excused

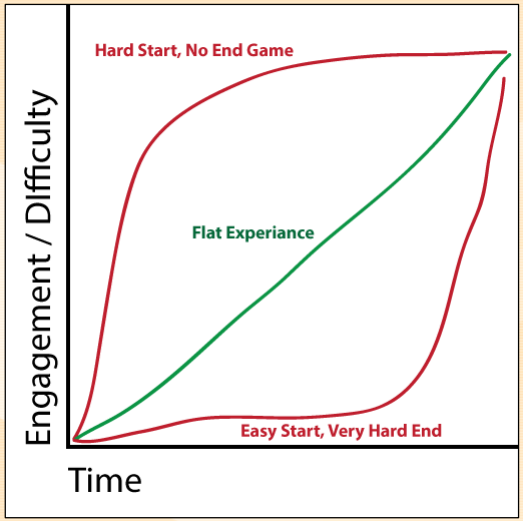
Excused hours requires 2 things

- An excusable reason for missing the hours
- Work from the missing hours completed

IPM Documents and Difficulty Curves

Difficulty Curve

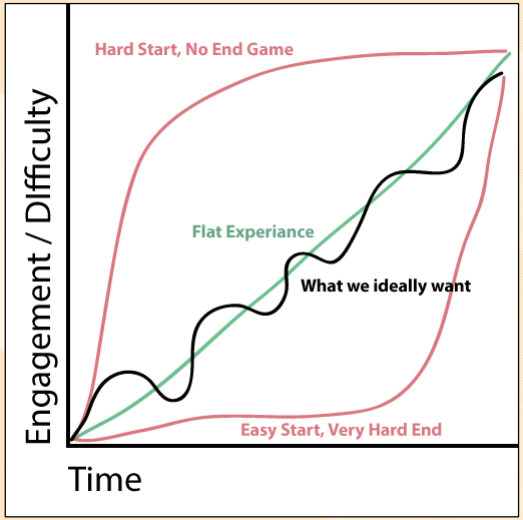
A plotting of the challenges the user faces while playing a game, against the time that that user has used the product



Difficulty Curve

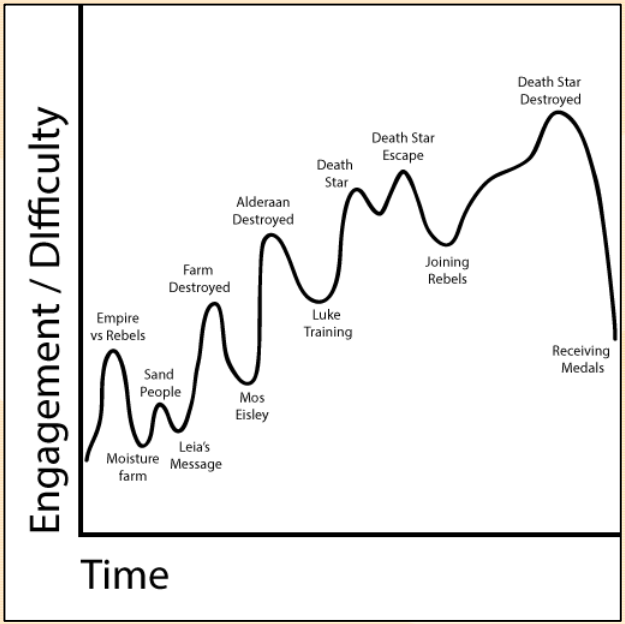
Ideally intended to ensure

- Players never feel bored
- Players never feel overwhelmed
- Spread the challenges evenly throughout the product



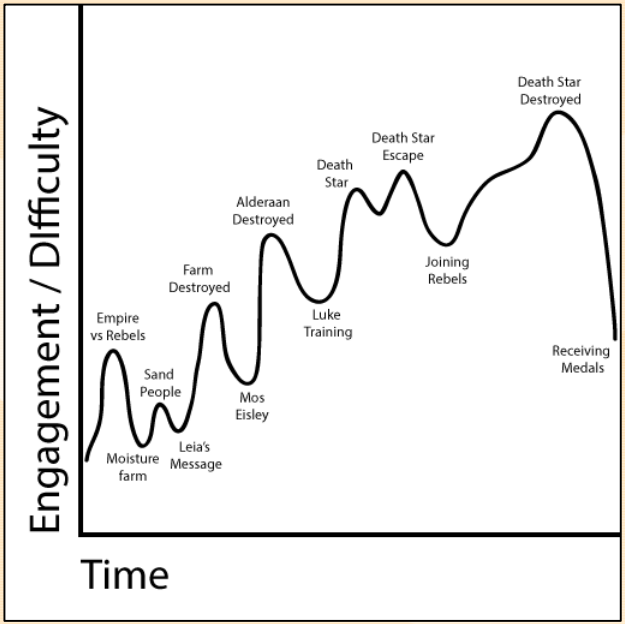
Dramatic Arc

There is a similar concept to this in general entertainment based on viewer engagement called the dramatic arc



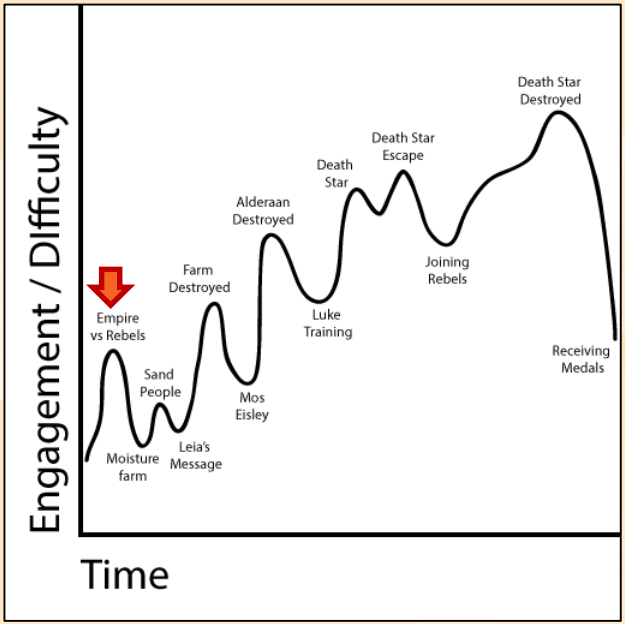
Dramatic Arc

We don't want a flat line of experiences we want a series of peaks and valleys with few plateaus



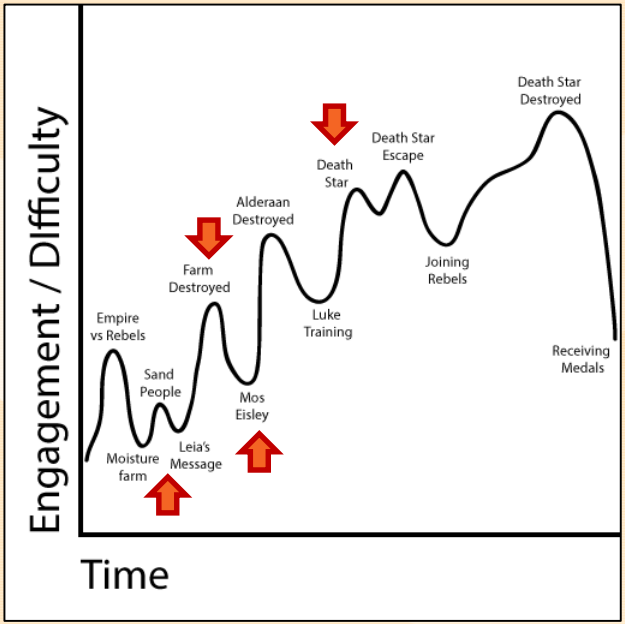
Dramatic Arc

Start with something to hook the audience



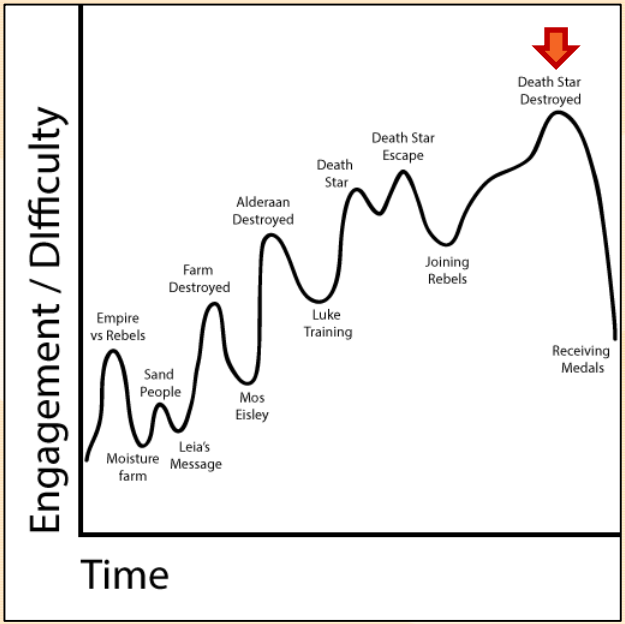
Dramatic Arc

Continuous dipping and building back up to keep the audience engaged



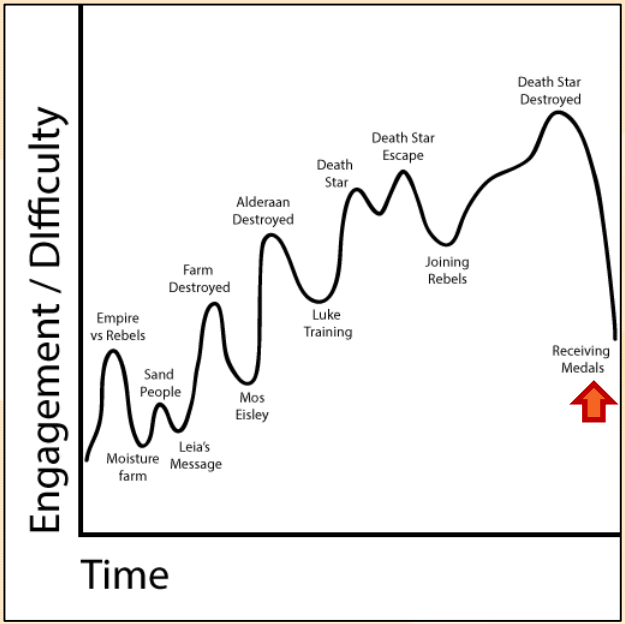
Dramatic Arc

Reach the peak at the most opportune moment



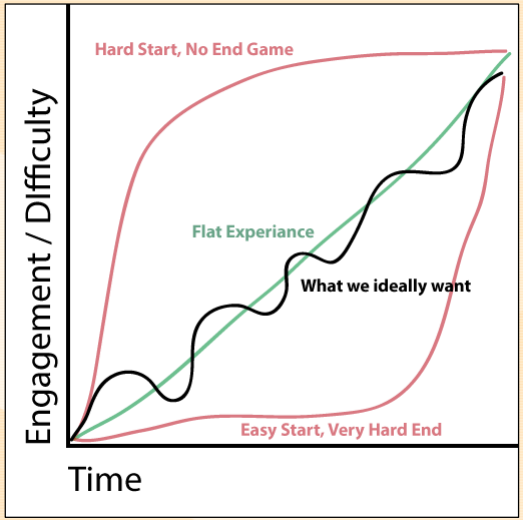
Dramatic Arc

Allow the audience to come back down to wrap up the experience



Difficulty Curve

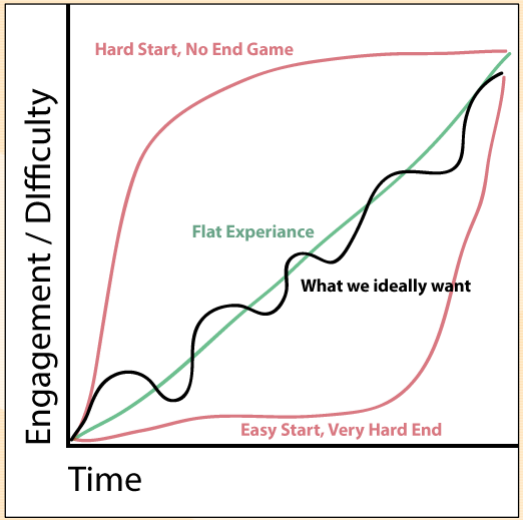
This same ebb and flow is what we want with a difficulty curve as well.



Difficulty Curve

We have to ensure that we do not drop it on our player all at once

- Avoid overwhelming them
- Avoid boring them

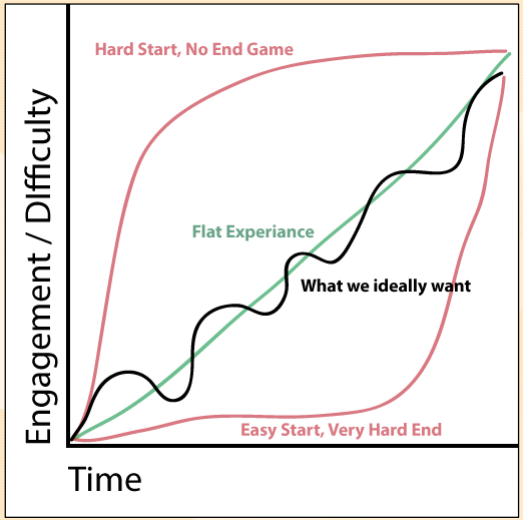


Difficulty Curve

- Feeling of power and control over the game's challenges

  vs.

- Feeling of loss of power and control over the game's challenges



Difficulty Curve

You can’t expect this curve to just appear and feel natural in the game automatically

It takes conscious thought and focus to make it happen

- Document it
- Find faults
- Fix them before wasting time in production

Difficulty Curve

The difficulty that the player encounters when playing a game should be gradual

- Phases of increased difficulty (Introduction)
- Periods of normalcy (Practice)
- Dips in difficulty due to the player becoming acclimated (Mastery)

Then cycling through the phases as more challenges are added in front of the player

Difficulty Curve: Example Items

Control mechanics or player abilities

- Where is it explained to the user?
- Where can they fumble and make mistakes without dire consequences?
- When do we expect the player to experiment with subtleties in the controls?
- When does that control become second nature to them?

Difficulty Curve: Example Items

Types of enemy

- When does the player first encounter it?
- Where can the player acclimate themselves to the scenario's the enemies create?
- When does the player feel like they are in total control again?
- When does the player feel uninterested with an enemy?

Difficulty Curve: Example Items

Types of obstacles

- When does the player first encounter it?
- Where can the player acclimate themselves to the different ways the obstacle can function
- When does the player feel confidant in traversing the obstacles?

IPM Document

List out all points of interest and make that one axis of our chart.

- Mechanics
- Challenges
- Control schemes
- Enemy types
- Weapon types
- Item types
- …
- Any potential stumbling point for the player

Point of Interest	Complexity (1-10)	Stage									
		1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4		I			M					
Double Jump	2			I		M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
	Total	3	9	13	11	15	14	8	5	5	5

IPM Document

The other axis lists out the time table of our users' experiences in whatever best fits our product

- Playable levels/stages
- Character level
- Time spent in game
- (Not all at once in a tutorial level)

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4		I			M					
Double Jump	2			I		M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
	Total	3	9	13	11	15	14	8	5	5	5

IPM Document

Define, for each of points of interest,

- When they are introduced to the user
- When does the user put it in practice
- When is the user expected to have mastered it

Point of Interest	Complexity (1-10)	Stage									
		1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4					M					
Double Jump	2					M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
	Total			13		15	14	8	5	5	5

How an IPM is used

Understanding the game

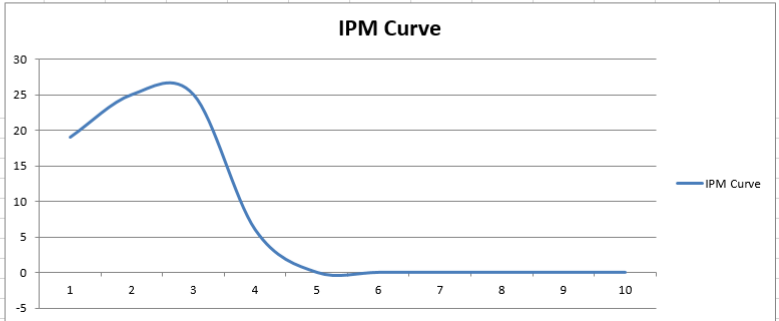
- The act of creating this documents helps teams understand the depth and breadth of the game's challenges

How an IPM is used

From the IPM matrix a graphical representation of our overall learning/engagement curve can be generated.

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4	I	P	M							
Double Jump	2	I	P	M							
Fireball	2	I	P	M							
Dash	3	I	P	M							
Dash Attack	5	I	P	M							
Enemy Dude	2	I	P	M							
Enemy Ninja	6		I	P	M						
	Total	19	25	25	6	0	0	0	0	0	0

Please note this IPM and curve is very subjective and not official. Creation and use of a IMP and curve is a useful tool in design but not a definitive answer.



How an IPM is used

Discover hot spots

- With that curve we can see if there are any points of the curve that the slope is too aggressive or if at any point the game becomes stagnant.

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4	I	P	M							
Double Jump	2	I	P	M							
Fireball	2	I	P	M							
Dash	3	I	P	M							
Dash Attack	5	I	P	M							
Enemy Dude	2	I	P	M							
Enemy Ninja	6		I	P	M						
	Total	19	25	25	6	0	0	0	0	0	0

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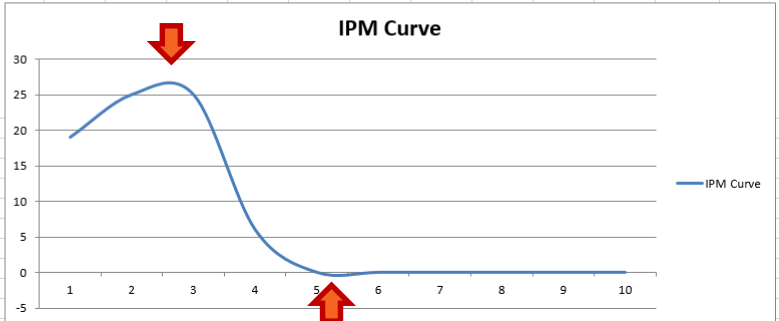

How an IPM is used

Spread out challenge

- The challenges can then be redistributed to make for a more even and engaging user experience

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4		I			M					
Double Jump	2			I		M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
	Total	3	9	13	11	15	14	8	5	5	5

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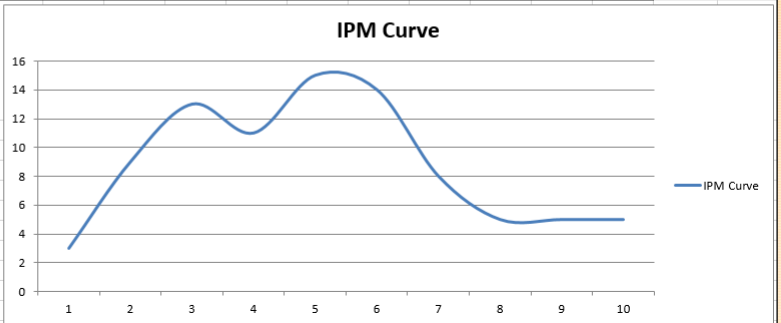

How an IPM is used

Discover gaps in the overall game engagement

- Helps the team discover when there is a lack of content variety and push for more advanced gameplay

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4		I			M					
Double Jump	2			I		M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
Pusher wall	5				I			P		M	
Enemy Samurai	8							I	P	M	
Big Boss Battle	10										M
	Total	3	9	13	16	15	14	21	13	18	15

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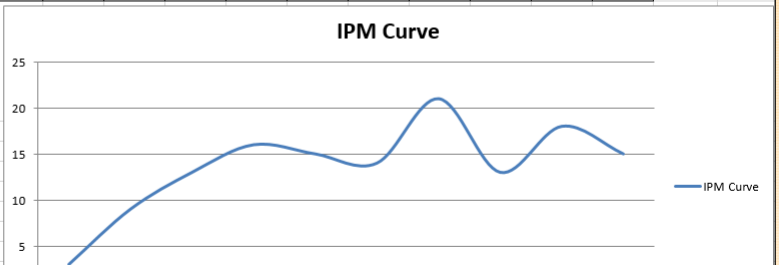

How an IPM is used

Use in level design

- A level designer uses the chart by looking down the column of the level they are going to create and know what features they are responsible for

- Breaks “blank canvas paralysis” as it pertains to level design

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4		I			M					
Double Jump	2			I		M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
Pusher wall	5				I			P		M	
Enemy Samurai	8							I	P	M	
Big Boss Battle	10										M
	Total	3	9	13	16	15	14	21	13	18	15

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How an IPM is used

Use in level design

- A level designer uses the chart by looking down at the level they are going to create and knows what features they are responsible for.

- Stage 6
  - Mastery of the enemy ninja
  - Practicing dash movement
  - Introduction to the dash attack
  - Other features available but not planned for use

Point of Interest	Complexity (1-10)	Stage 1	2	3	4	5	6	7	8	9	10
Player Movement	1	I	P	M							
Precision Jumping	4		I			M					
Double Jump	2			I		M					
Fireball	2		I	M							
Dash	3				I	P	P	M			
Dash Attack	5						I	P	P	P	M
Enemy Dude	2	I	P	P	M						
Enemy Ninja	6			I	P	P	M				
Pusher wall	5				I			P		M	
Enemy Samurai	8							I	P	M	
Big Boss Battle	10										M
	Total	3	9	13	16	15	14	21	13	18	15

Please note this IPM and curve is very subjective and not official.

Part of Alpha

Create this document during alpha

- During alpha we will be finalizing our game'sfeatures
- We will create this document while those features are beingfinalized
- This document will help us pace it out where they will be used
- The plan being formulated wont be fully executed until the and of the beta milestone

Where are we now?

<Activity> Playtesting

30 minutes to play each others games

- Watch for what people find fun
- Watch for what people find frustrating
- Is the experience what you wanted it to be?

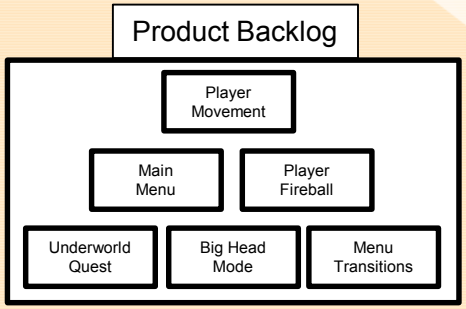
Sprint Process

REVIEW

Product backlog

Everything that could be in the product is collected into a list called the product back log

- Things can get added to the product back log as needed
- Only a wish list for now, Not promises that need to be fulfilled

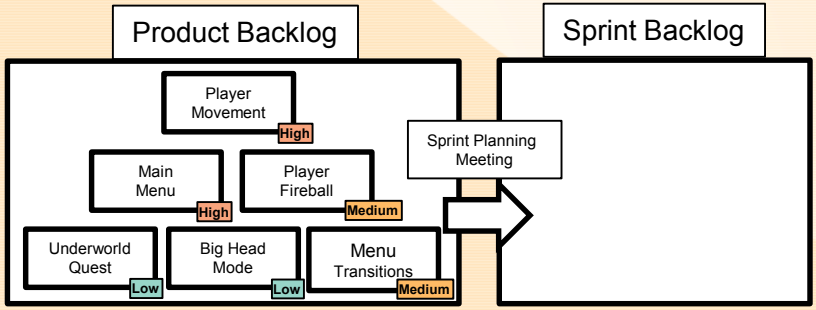


REVIEW

Sprint Backlog

Sprint Planning

- Before the sprint the entire team will meet to:
  - Determine an overall sprint goal
  - Select stories from the product back log to achieve that goal
  - Evaluate the difficulty/hours/complexity of the stories selected
  - Distributing the work load among the team



REVIEW

Planning poker

After the userstories have been selected each userstory is evaluated individually by the group.

- Estimating workload
- Understanding dependencies
- Assigning tasks

Planning poker: Step 1: Bidding

Step 1: Bidding

- Userstory and test cases is read out to the team
  - Answers questions if there are any
  - Modify test cases where needed
    - (Client is involved in this for externally produced projects)

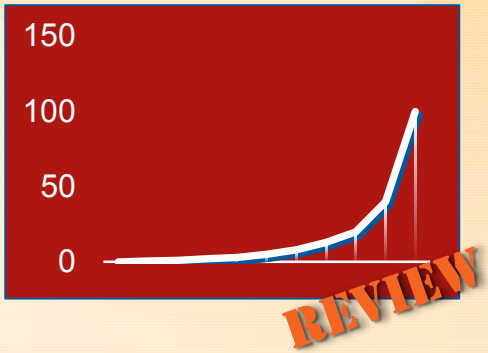
- Each team member
  - Evaluates how difficult they believe the story is to completing, without bias from other members
  - Pick which of the possible bids best represents how difficult they evaluate the task to be

Planning poker: Step 1: Bidding

Bid Value : Estimated Work

- 0 hr
- ½ hr
- 1 hr
- 2 hrs
- 3 hrs
- 5 hrs
- 8 hrs
- 13 hrs (1 day and a half)
- 20 hrs (half a week)
- 40 hrs (1 week)
- 100 hrs (2 weeks)
- Unknown
- Infinite

- The number pattern reflects one of the faults in making estimates
- The larger the estimate the more room for error



Planning poker: Step 1: Bidding

Bid Value : Estimated Work

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- 5 hrs
- 8 hrs
- 13 hrs (1 day and a half)
- 20 hrs (half a week)
- 40 hrs (1 week)
- 100 hrs (2 weeks)
- Unknown
- Infinite

- Each value should be through as a range from the bid below it up
  - Bid of 5 = anything above 3 up to 5

1	2	3	4	5	6	7	8	9	10	11	12	13
1	2	3	5		8			13				

REVIEW

Planning poker: Step 2: Negotiation

Step 2: Negotiation

- Each team member reveals what bid they decided upon on the previous step at the same time
- If bids differ the team must discuss why and come to an agreement on the task's value

Planning poker: Step 3: Allocation

Step 3: Allocation

- After every user story has agreed upon values, user stories must have owners committed to them.
- The story's owner will be the person
  - Best equipped to tackle the story
  - Responsible for completing all task related to the story before the end of the sprint

Planning poker: Step 3: Allocation

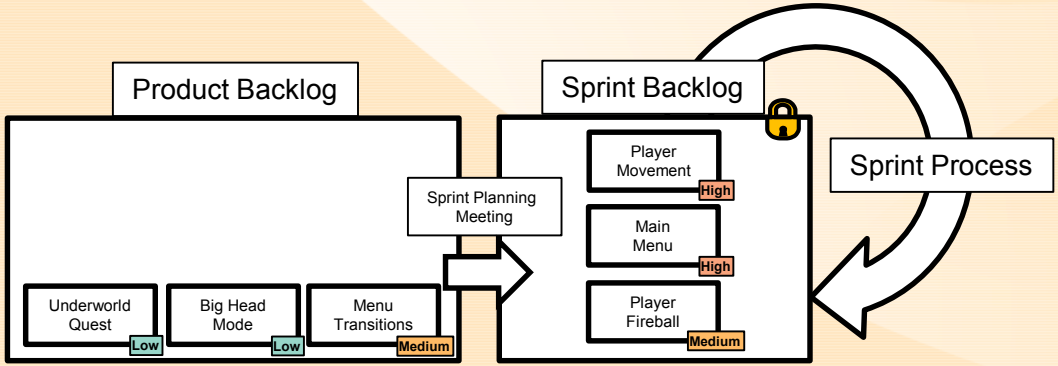
Balance the workload

- Make sure each team member is contributing equally
  - Redistribute stories if they are not
- Make sure the work load matches up with the sprint length
  - Not enough hours to fill the schedule = take more stories from the product backlog
  - Over hours = Discusswith the product owner to return things to pull back on the sprint goal

Sprint Backlog

Sprint Planning

- Once the sprint planning is completed and the sprint has started a commitment has been made for those tasks
- Neither the product owner nor the developers should change a sprint plan once in motion

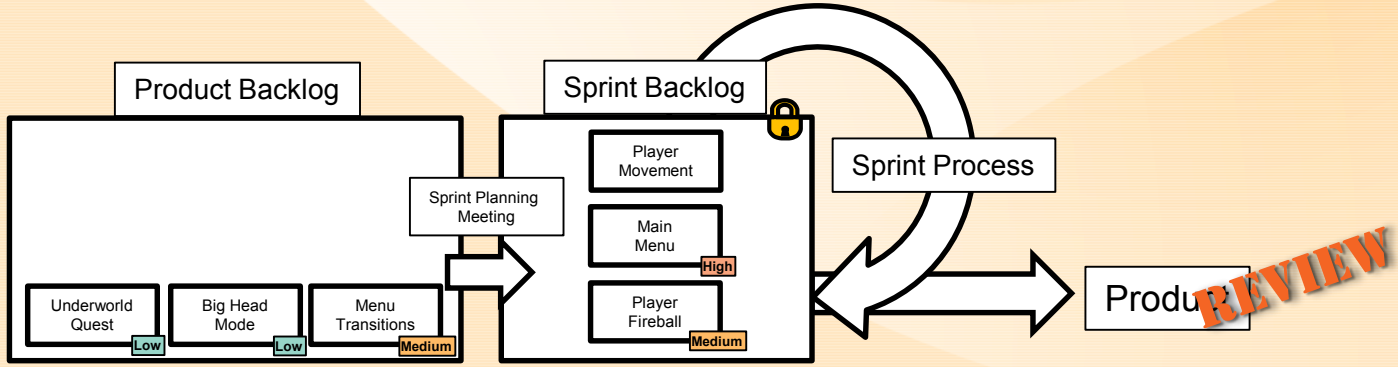


REVIEW

Sprint Process

Teams then work through the sprint to complete the agreed upon tasks

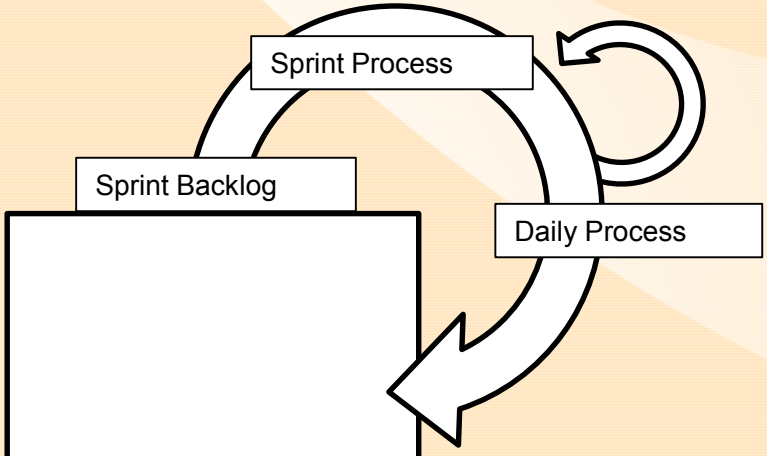
- Completing the tasks
- Integrating into the master build



Work day in scrum

Teams meet every day for a scrum “stand up” meeting

- Maintain transparency
- Hold each other accountable
- Set up help when needed

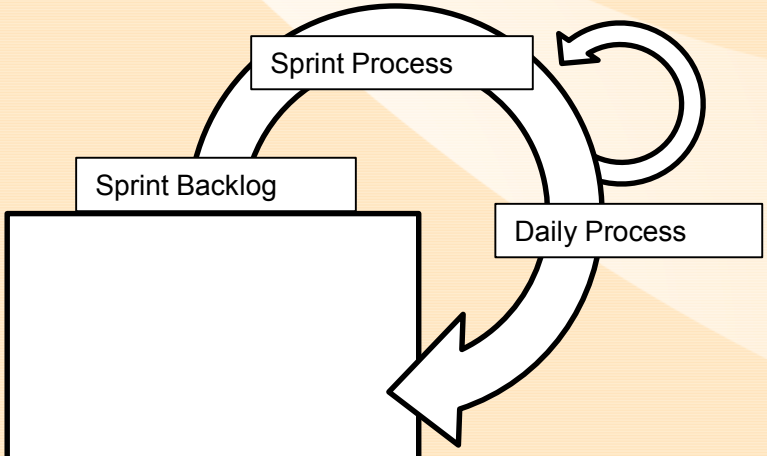


REVIEW

Work day in scrum

Key points of scrum “stand up” meetings

- The meeting should be the start of our working day
- Maximum of 15 minutes.

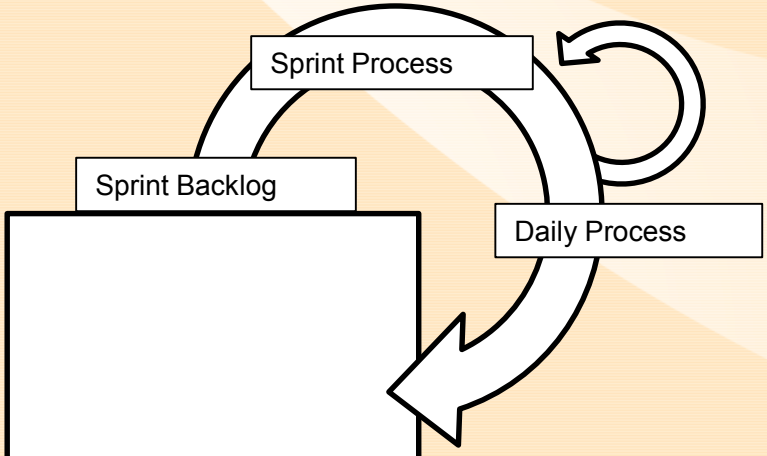


REVIEW

Work day in scrum

The daily meeting needs to answer the following for each team member

- What did you do?
- What are you about to do?
- What currently stands in your way?



REVIEW

Logging Hours with Trello

Add yourself as a member of any card you are responsible for

Click the hourglass to start logging hours if interface isn't already visible

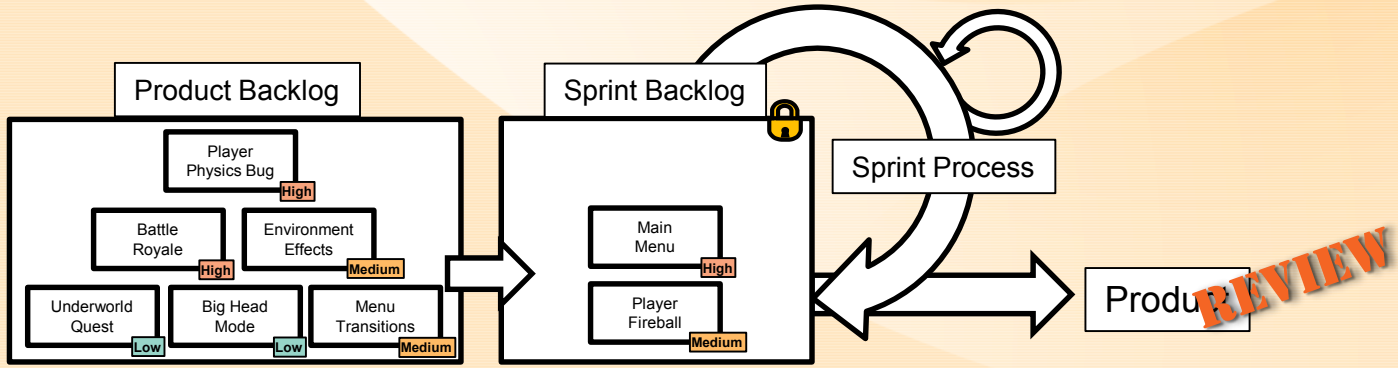
The person who is taking ownership of the task and hours.
Defaults to "me"; the person entering the hours on the card

Log the hours here
E for estimate (sprint planning)
S for time spent (tracking your progress)

Sprint Process

During the sprint, things are added to the product backlog if

- Discovered to make the product better
- Added from outside influences
- Changes in product expectation from client



Todos for today

Sprint Planning

To Dos

Sprint planning

- Understand an overall sprint goal
- Select stories from the product backlog to achieve that goal and move the selected userstories to this sprint board
- Review and edit test cases where needed
- Evaluate the difficulty/hours/complexity of the stories selected through planning poker
- Distributing the workload among the team by assigning owners for all of the stories

- Sprint plan must be reviewed and accepted by the CD before the end of lab

Alpha Sprint Goals

Sprint Goals

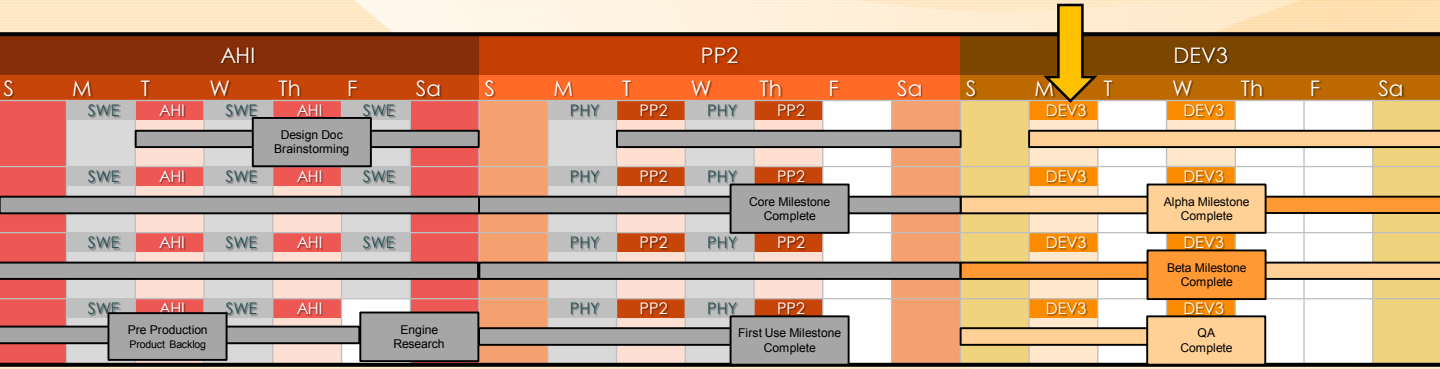
- The game world is populated with at least one example of each game object
  - All game object types
- Game progress can be shown
  - Multiple levels, multiple objectives, persistent data saved between levels...
- The game contains its win/loss conditions
- Cleared Technical debt
- Feature complete
  - Enough asset creation complete to prove the use of features
- Any feature not completed by the end of this sprint must be cut from the product

Schedule

Hourly commitment

- 6 dedicated work days
- ~42 hours a person

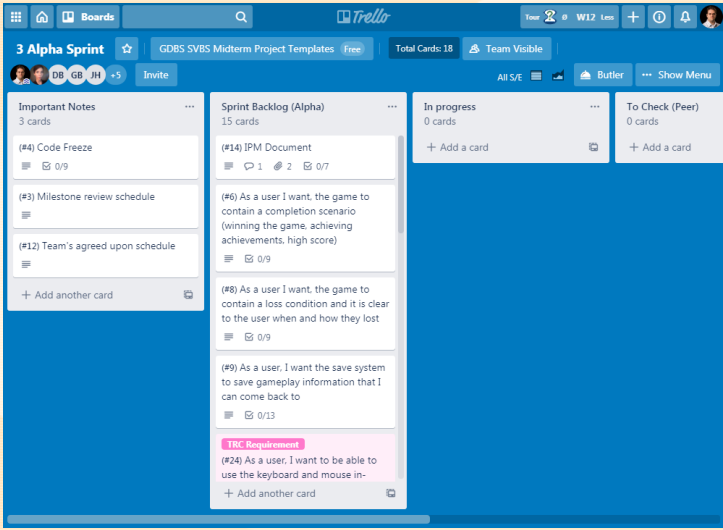
Sprint review day 4 of PP3



Alpha board is created

Move cards from product backlog here that are needed to achieve sprint goals

- Review and edit test cases
- Write new cards if needed



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Alpha Sprint

Sprint Goals

- The game world is populated with at least one example of each game object
  - All game object types
- Overall game progress can be shown
  - (multiple levels, multiple objectives...)
- The game contains its win/loss conditions
- Clear Technical debt
- Feature complete
  - Enough asset creation complete to prove the use of features
- Any feature not completed by the end of this sprint must be cut from the product

Hourly commitment

- 6 dedicated work days
- ~42 hours a person