CHAPTER 09

PAPER PROTOTYPING





Benefits of Paper Prototypes



Benefits of Paper Prototypes
Paper Prototyping Tools



- Benefits of Paper Prototypes
- Paper Prototyping Tools
- Example Paper Prototype



- Benefits of Paper Prototypes
- Paper Prototyping Tools
- Example Paper Prototype
- Constructing the Prototype



- Benefits of Paper Prototypes
- Paper Prototyping Tools
- Example Paper Prototype
- Constructing the Prototype
- Playtest Questions



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- Best Uses of Paper Prototyping



- Benefits of Paper Prototypes
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- Best Uses of Paper Prototyping
- Poor Uses of Paper Prototyping





Digital technologies have led to a whole new world of possibilities for game design



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Digital technologies have led to a whole new world of possibilities for game design But many designers still use paper prototypes to quickly implement and test new game ideas The two main reasons for this are: Speed & Ease of implementation





Initial Development Speed



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It is very fast to get from concept to playable prototype



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- Low Technical Barrier to Entry



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Low Technical Barrier to Entry

- Very little technical knowledge or artistic talent is required to make a paper prototype
- Therefore, anyone on your team can meaningfully contribute





Collaborative Prototyping Process

- It is possible to collaboratively create a paper prototype



- It is possible to collaboratively create a paper prototype
- This can help your team learn to collaborate and share ideas



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- Focused Prototyping and Testing



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Focused Prototyping and Testing

 A paper prototype is always very different from the final digital game



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Focused Prototyping and Testing

- A paper prototype is always very different from the final digital game
- This allows you to test specific aspects of the game without playtesters being distracted by the rest of the product



Paper Prototyping Tools



Paper Prototyping Tools

Large Sheets of Paper



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- 24" x 36" Post-it[®] sheets are particularly popular


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- Grid paper can also be found



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 - Place a regular card in the sleeve with a slip of paper on top of it



3x5 Note Cards



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- 3" x 5" note cards can be used in several situations



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Brainstorming



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- Have lots of colors of markers available
- Be sure to snap a photo of the board before erasing it!



Pipe Cleaners / Legos / Building Toys



Pipe Cleaners / Legos / Building Toys

- Tools you can use to quickly build things



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- A Notebook



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 - Some people can use a digital notebook
 - An iPad or other tablet
 - I carry both digital and paper notebooks

Example Paper Prototype




Initial Digital Game Concept

- Tablet game



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- Based on the *Blitz* turn-based tactical combat system in Valkyria Chronicles (SEGA, 2008 for PlayStation 3)



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 - Player moves a single character in real-time
 - The character can move a limited distance
 - Enemy characters are immobile, but can shoot at the player's character if they see her





Top-down map view. Player draws a path to set movement for an ally.



Tapping on a green cover area will cause the ally to go into cover. While in cover, enemy shots will hit less frequently, and the ally can see around corners



As the ally moves, the camera is 3rd person over-the-shoulder. Areas glow green to show possible cover.



Any time during the move, the player can press the Attack! button. Then she has until the yellow timer runs out to line up her shot and press Fire!

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Initial Game Concept





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Initial Game Concept

Start by making simple mockups of the digital game screens





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• Elements that can be tested with the paper prototype



Elements that can be tested with the paper prototype

Map Layouts / Level Design



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- As the Game Master (GM), the designer will play the role of the AI
- Acting as the computer player during playtests, the designer can learn several things



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 - How much information about the player's troops the AI should have



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 - The best goals (and ranking of goals) for the AI



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 - Good AI moves and attack types



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- Remember, the AI should be designed not to defeat the player, but instead to be fun for the player to defeat!



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Weapon Designs

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- But, the fun of the core mechanic should come from tactically outsmarting the enemies
 - This can **absolutely** happen in the paper prototype




Start this game by building a Player Map





Start this game by building a Player Map

- 1/2" Hex graph paper





Start this game by building a Player Map

- 1/2" Hex graph paper
- Gray = buildings / Brown = low walls / Red = capture points







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Then make a GM (Game Master) Map

- 1/4" Hex graph paper





- 1/4" Hex graph paper
- Little red triangles = Enemy units





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 - You are designing for player fun and (eventual) success
 - Players want to be able to sneak up on enemies
 - Leave blind spots in your patrols







Objective

- The player's objective is to capture all three control points



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- A sheet of paper for playtest notes





Setup

- The player is given four units



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- The player is given four units
 - In the first playtest, all units will have the same weapons and abilities
- Player may select any hex on the edge of the map as her start position and place one unit there
 - All other player units must be placed in adjacent hexes







Visibility





Visibility

- A unit can see a distance of 10 spaces in an arc in front of it





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Units can also share visibility information with nearby units





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 As soon as an enemy unit is visible to the player, the GM should place it on the player map



Visibility

- A unit can see a distance of 10 spaces in an arc in front of it

- Units can also share visibility information with nearby units
- Buildings block visibility
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- When the enemy unit is not longer visible, the GM should remove it







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Weapons and Firing

Each unit carries one weapon



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– Counterattacks!

- If the targeted unit is survives the attack:
 - It immediately turns to face its attacker and shoots back



Cover



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Corner Cover and Visibility





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 - Simulates peering around the corner









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- In an Interception Attack half of the normal shots are fired (rounded up)
- If both the active unit and the stationary unit wish to fire at the same time, the active unit always shoots first



Capturing Control Points



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• It unit ends its action in a shaded Control Point area



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Capturing Control Points

- The active unit may claim a Control Point if:
 - It unit ends its action in a shaded Control Point area
 - And there are no conscious enemies within the Control Point
- Enemy units can recapture the Control Point using the same rules
- If the player captures all three Control Points, she wins!

Constructing the Prototype: GM Strategy


Remember, your goal is for the player to have fun



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 - Take notes about which strategies work well to provide a fun, challenging experience for the player



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- More on testing in Chapter 10, "Game Testing"



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 - With 10 shots, it is much more likely that you will get close to the average damage of the gun at that distance (5 points)




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These are easy questions to answer with a paper prototype





Tracking lots of information

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- The general feel of each weapon
 - The "risky" shotgun and the "reliable" machine gun
- Fine-tune this information later with the digital prototype





Game rhythm for fast or slow games



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Physical interface

 Paper prototypes work well for GUIs but have very little to tell us about physical interfaces



Game rhythm for fast or slow games

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 - Gamepad controllers / Touchscreens / Keyboard and Mouse / etc.
- Only a digital prototype can test the actual physical interface that will be used by the player





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- One of the most important aspects of game design is testing
- The next chapter covers several different types of game testing and shows you how to run them