Final Draft (Step 3):

10-ft Interface and Controller Prototype

User Interface | *User Navigation and Input*

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UXD-60102-001-202160: PRINCIPLES OF INTERACTION
Module 4: *Survey of Prototyping Methods* | Prof. Monica Ralston

Responsive Design—Final

10-ft Interface

Input and Navigation Design

Introduction — New Streaming Interface

The goal of this design is introduce a new device which consists of:

- Pluggable **streaming device** into an HDMI port
- Hand-held **remote** designed specifically for system input
- **System navigation**

Because users increasingly have more choices, the interface and input device have been designed to be more user-centric, putting the user in control of their viewing experience. Because, in the long-term, viewers will gravitate to those streaming services who add to their experience, not force them to conform.

According to ***Designing Interactions,*** questions to be asked are:

- What are the contextual, physical, temporal, sensory, social, cognitive, factors that must be considered as embark on design.
- What is essence of existing user experience?
- What essential factors should be preserved?[1]

To avoid "**device clutter**"[2], we must talk about usability goals and device specialization. Usability goals help make the device a pleasurable experience for the user, which will make them loyal customers.

Usability Goals:

- Effective to use (**Effectiveness**)
- Efficient to use (**Efficiency**)
- Safe to use (**Safety**)
- Having a good utility (**Utility**)
- Easy to learn (**Learnability**)
- Easy to remember how to use (**Memorability**)

Trying to cram too many inputs into a remote frustrates users and is inefficient leading to a non-pleasurable experience, e.g., it may be better to keep the TV remote separate from the remote for the input device for the streaming service because we can never design enough input to take care of every TV version. Therefore **"device specialization"** comes into play. According to the authors of Interaction Design, *"…Specialization may be a better solution where the form, look and feel, and features of a single device are designed for a specific task. The benefit of doing so is that the device is designed to fit the task and the person using it."*[3]

Rogers, Sharp, and Preece define interaction design as "designing interactive products to support the way people communicate and interact in their everyday and working lives.… it is about creating user experiences that enhance and augment the way people work, communicate, and interact."[4]

They also suggest turning usability goals into usability criteria:

- Time to complete a task (Efficiency)
- Time to learn a task (Learnability)
- Number of errors made when carrying out a given task over time (Memorability)

And that there are desirable and undesirable aspects for any user experience:

Desirable Aspects

Satisfying	Helpful	Fun
Enjoyable	Motivating	Provocative
Engaging	Challenging	Surprising
Pleasurable	Enhancing Sociability	Rewarding
Exciting	Supporting Creativity	Emotionally Fulfilling
Entertaining	Cognitively Stimulating	

Undesirable Aspects

Boring	Childish	Cutesy
Frustrating	Unpleasant	Gimmicky
Making one feel guilty	Patronizing	
Annoying	Making one feel stupid	

Design Principles

- **Feedback** — products should be designed to provide adequate feedback to users to ensure they know what to do next in their tasks.
- **Findability** — the degree to which a particular object is easy to discover or locate—be it navigating a website, moving through a building, or finding how to delete an image option on a digital camera.[5]

Design Parameters | Alpha-Version User Testing

The first iteration of the remote control and navigation of the streaming system were designed as if the designer were the user / consumer of the product. Subsequent iterative low fidelity testing will enable us to refine the user experience before resources go into more expensive prototypes and programming.

Task | Goals—Stream studio and studio partner-specific TV / Movie content.

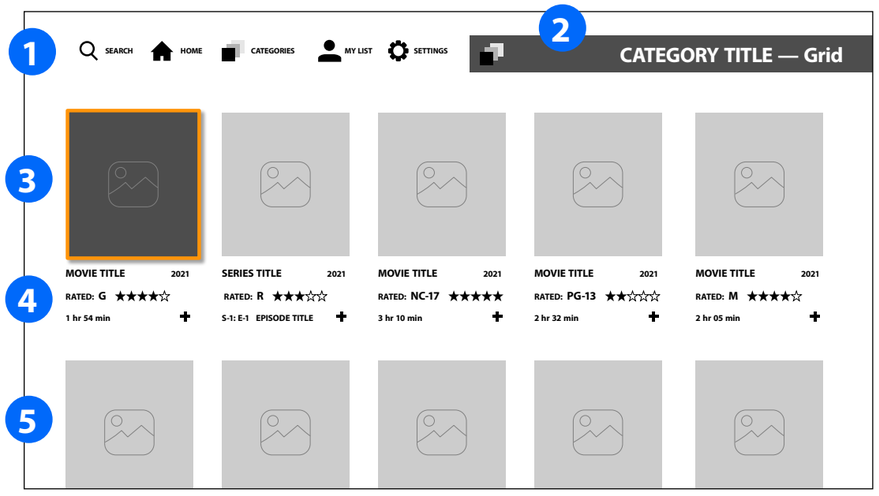
- Diagram the interface— content-level viewing (user has selected a category and the display is now showing all of the content for that category.
- Create wireframes that shows at least one viewport (one screen's worth) of content with two views:
  - Grid
  - Single Column View

Alpha-Version User Testing

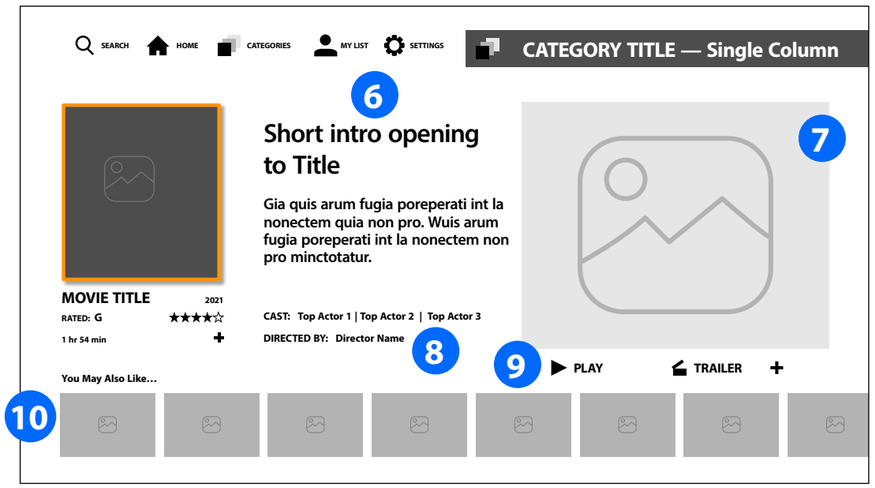
Our testing plan details how we will test participants using low-fidelity printouts of screen designs. *(See "Testing" and "Testing Tasks," page 4.)*

10-ft Interface and Controller Prototype

Screen — CATEGORY *(Grid View—scrollable vertically—accessed by Category Menu item)*



Screen — CATEGORY *(Single Column View—scrollable vertically (horizontally for #10))*



Summary—The **Device interface** *(left—placed at 21%; designed at 1024 x 767px)* and **Controller** *(right—placed at 100%))* are designed so that users can quickly find their content without having to learn a complicated physical or digital interface.

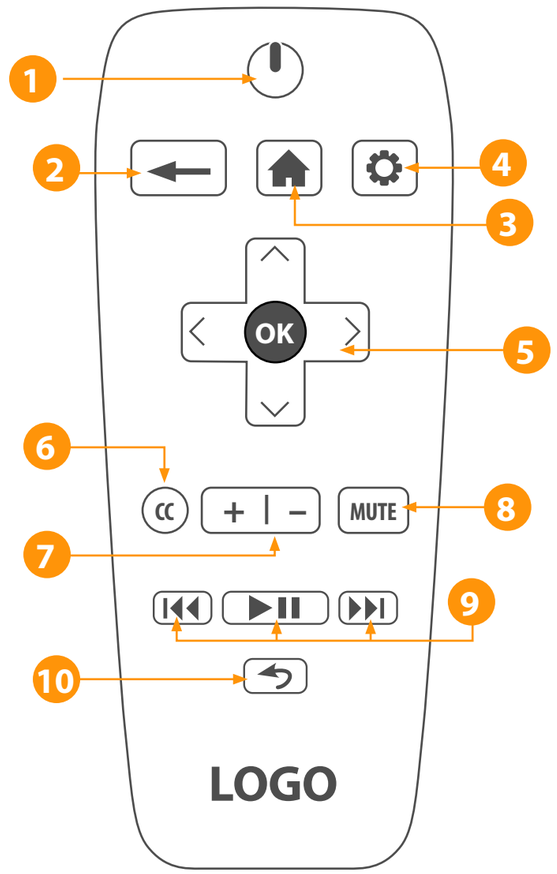
The **device interface** uses large type, graphics, and simple icons with text to make wayfinding easy for user. Double-clicking on the highlighted tile in the category views brings up an expanded view

The **controller** is designed to fit into the user's hand without a lot of weight, with distinctive buttons that do not require sight to use, and has all of the features most used when selecting a movie. It also does not compete with the TV screen or any other digital devices being used (such as a phone) because it does not have any lights or screens.

Device Interface Navigation

1) **Persistent Menu:**
   - Search — *whole site*
   - Home — *Takes to "HOME" page, (see page 4)*
   - Categories —*Opens up either a Grid or Single Column View*
   - My List — *Users personal database list*
   - Settings — *User preferred settings*
2) **Category Title** *(Shows viewer which category they are in)*
3) **Selected State** *(Movie Tile)*
4) **Movie Information**
   - Title / Year
   - Film Rating / Star User Rating
   - Run Time or Series Information / + Add to "My List"
5) **Next row in category**
6) **Intro Title / Brief Summary**
7) **Expanded Screenshot**
8) **Top Billed Cast / Crew**
9) **Controls to Play Movie or Trailer or Add to My List**
10) **Similar TV / Film List** *(Scrollable)*

Controller Prototype *(2.5-in w x 6-in h)*



Controller Design and Input Buttons

1) **On / Off** *(for TV)*
2) **Back** *(One menu item)*
3) **Home** *(Device Home)*
4) **Settings** *(Device Settings)*
5) **D-Pad** *(Up / Down / Right / Left / Center Select)*
6) **Closed-Caption** *(On / Off)*
7) **+ / – Volume**
8) **Mute Volume** *(On / Off)*
9) **Movie** *(Reverse / Play | Pause / Forward)*
10) **Movie** *(Skip-Back 30 sec.)*

Design Rationale—

- The controller buttons have a **physical appearance / affordances** that help the user distinguish different buttons by **touch / size / spacing** as well as by sight. **This makes the controller usable in a darkened environment as well as in a lighted room**—also making the device much more accessible for low-sighted users.
- Buttons are "grouped" according to **usage categories**, i.e., System controls are at the top; the main D-Pad is prominently in center; sound controls *(CC / Volume / Mute)* are on the same line; and movie controls are grouped at bottom.
- With a width of 2.5 inches and a height of 6 inches, the controller itself is designed to fit comfortably in hand for either a left- or right-handed person. The buttons are spaced and designed with Learnability, Memorability, Efficiency, and Utility in mind.

Device Interface Navigation, cont.[i]

All screens *(sans "Start-Up")* have a **persistent main navigation menu** that enables users to perform a **Search**, navigate to **Home**, select **Categories**, add to a personal **My List**, and designate personal **Settings**.

Category GRID View—

- The grid view allows users to scroll vertically in a condensed format.

Category SINGLE COLUMN View—

- The Single Column view is still a searching view, but with more expanded data. Scrolling down in this view, scrolls the entire screen to a new movie.

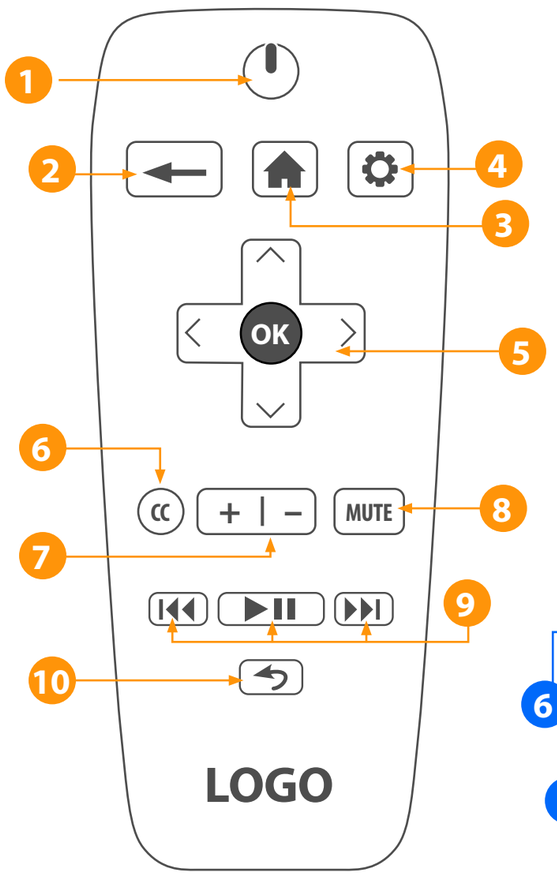
Design Rationale—

- The main user goal for designing the navigation system is easy **Wayfinding** which should result in an Efficient and Effective user experience. Affordances such as highlighting movie tiles and using icons along with their text references, make user wayfinding simple to use.
- Because the **navigation is easy to learn**, the user is able to get to their content more quickly, and thus their user experience becomes a more satisfying one, which will result in more frequent usage of the Streaming Device and the company's content and that of it's partners.

i Selecting a tile in either grid view brings up the "Selected Title" view (shown on page 4 in this document).

10-ft Interface and Controller Prototype—Basic Testing

Controller *(2.5-in w x 6-in h)*



Controller Buttons

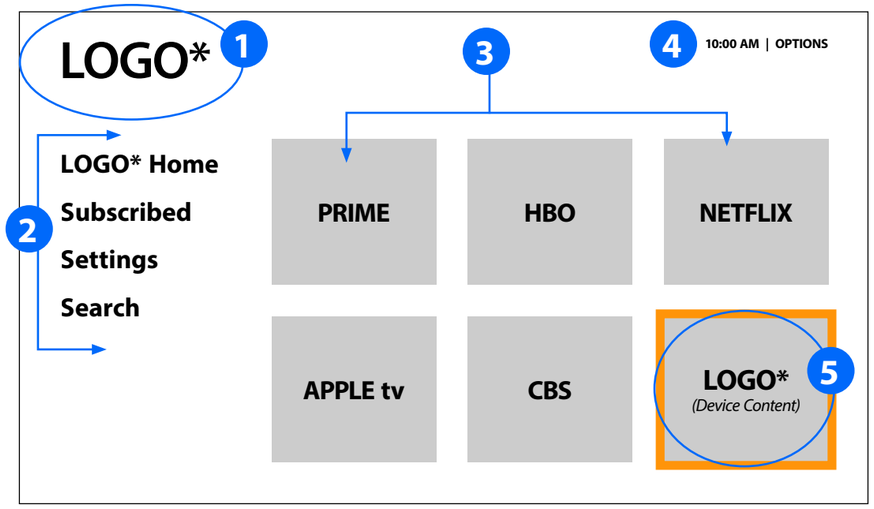
1) **On / Off** *(for TV)*
2) **Back** *(One menu item)*
3) **Home** *(Device Home)*
4) **Settings** *(Device Settings)*
5) **D-Pad** *(Up / Down / Right / Left / Center Select)*
6) **Closed-Caption** *(On / Off)*
7) **+ / – Volume**
8) **Mute Volume** *(On / Off)*
9) **Movie** *(Reverse / Play | Pause / Forward)*
10) **Movie** *(Skip-Back 30 sec.)*

Testing—Simple user testing of the screens involves printing out the screens to the right and having users point to the buttons on the controller and then point to what would happen on the screen—then changing the screen to a new screen.

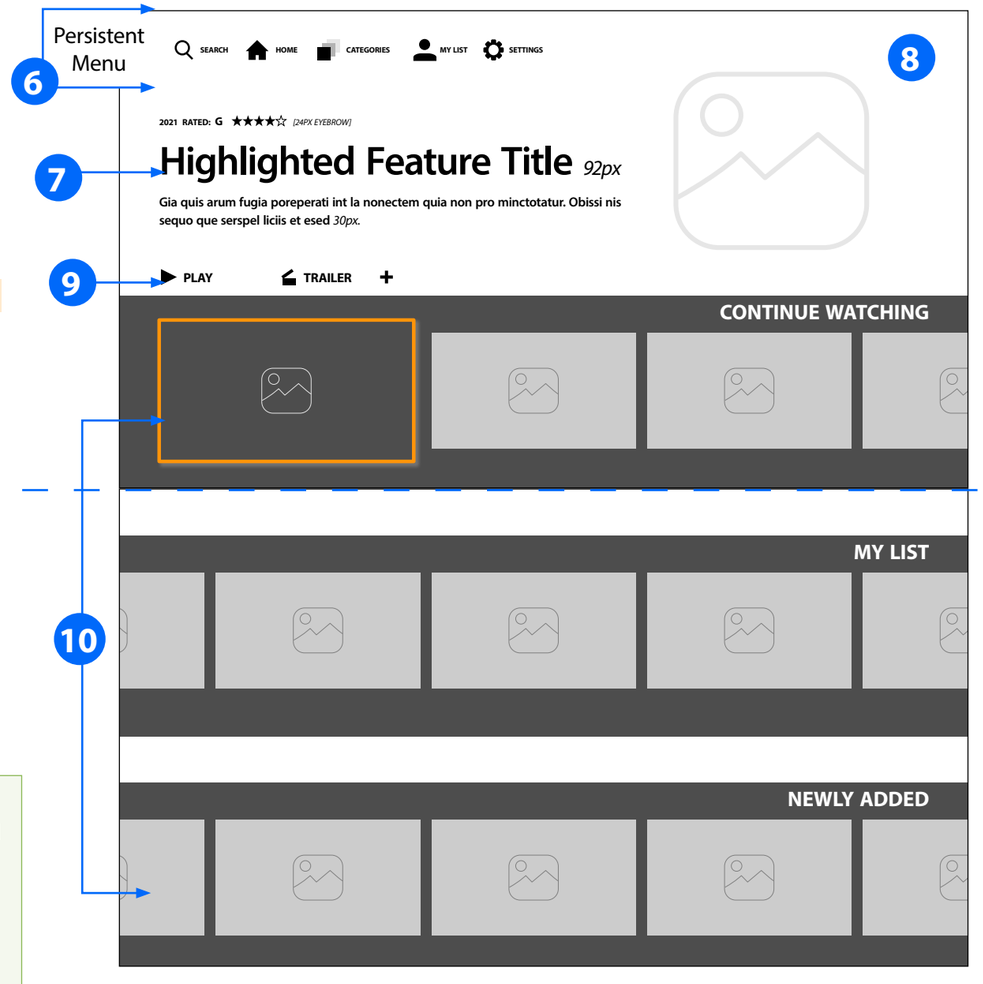
Each touch on a button input would have a new print-out of the screen placed before the user.

Each possible input would have its own screen.

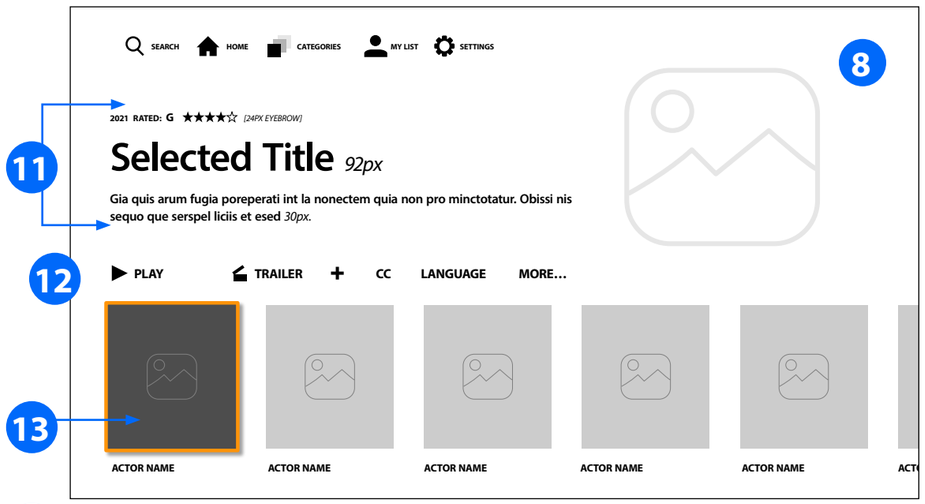
Screen — Streaming Device START-UP MENU View *(Grid View—scrollable vertically)*



Screen — HOME / ALL Category View *(Grid View with sliding carousels—scrollable v / h)*



Screen — Category / SELECTED MEDIA View *(Single Column View)*



14 Below: Similar TV / Film List follows "Cast & Crew" information

Navigation | Test Tasks: Choose a Movie to Watch

1) **Logo on Start-Up Screen** *(Branding)*
2) **Streaming Device Main Menu**
3) **Service Partners**
4) **Time / System Options** *(Global for Device)*
5) **Logo of Device Streaming Service**
6) **Persistent Menu** *(Search / Home / Categories / My List / Settings)*
7) **Feature Title** *(Rating Information / Title / Short Summary)*
8) **Movie Screen Shot** *(Background)*
9) **Controls** *(Play Movie / Watch Trailer)*
10) **Category Rows** *(By User Preference)*
11) **Movie Information** *(Year Made / Rating System / Star Rating / Title / Summary)*
12) **Controls** *(Additional controls become available in this view—Play Movie / Watch Trailer / + Add to List / CC Settings for Closed-Captions / Language / More…)*
13) **Top Cast and Director Information**
14) **Similar TV / Film List** *(Viewers are interested in this after they've watched the selected movie.)*

Start-Up Screen View—

- The Start-Up Screen shows the Streaming Service's logo and the available "Studio Partner-Specific" streaming services available or subscribed to by the user. This is also where the user can select the Device's own channel (#5).
- To choose and watch a movie on the **STREAMING DEVICE** being designed, the user chooses "LOGO" *(#5)* which opens up a new screen "HOME / ALL CATEGORY VIEW".

HOME Category View—

- The Home View shows a limited number of features under all available categories. To see all available titles in a category, viewers would select "Categories" in the top persistent menu.

SELECTED TITLE View—

- The single column view appears after a viewer has elected to watch a movie or TV series. .

Test Tasks*—

- User starts out with a printout of the **controller** and the **Start-Up Screen**.
- Task #1: **Select the streaming device's content** and navigate to it using the controller.
- Task #2: **Select a movie** from the Home page and navigate to a more detailed page.
- Task #3: From the "Selected Title" page, **watch the trailer** and **add the movie** to the user's "My List" database.
- Task #4: After watching the movie, find a **similar movie** to watch.

**During the above tasks, the moderator will replace screens as the user points to an interaction.*

Endnotes

1 **Selections from Designing Interactions**—https://learn.kent.edu/bbcswebdav/pid-13622516-dt-content-rid-180972651_1/courses/13537.202160/learning-modules/Module%204/Selections%20from%20Designing%20Interactions.pdf. *(Accessed 2021)*

2 **Interaction Design: Beyond Human-Computer Interaction, 3rd Edition**—©2011 John Wiley & Sons Ltd., West Susses, United Kingdom. O'Reilly electronic version.

3 **Ibid, Interaction Design**—Chapter 1, Section 1.2.

4 **Ibid, Interaction Design**—Chapter 1, Section 1.3.

5 **Ibid, Interaction Design**—Chapter 1, Section 1.6.2

*Additional materials used in this research include:

– **About Face: The Essentials of Interaction Design**—Cooper, Alan. John Wiley & Sons, Inc., Indianapolis, IN. *(2014)*

– **Low-fi prototyping: What, Why and How?**—https://blog.prototypr.io/low-fi-prototyping-what-why-and-how-24f77d9f4995. *(Accessed 2021)*

– **Prototyping: Learn Eight Common Methods and Best Practices**—Rikke Friss Dam and Teo Us Siang. https://www.interaction-design.org/literature/article/prototyping-learn-eight-common-methods-and-best-practices. *(Accessed 2021)*

– **Design Thinking: Get Started with Prototyping**—Rikke Friss Dam and Teo Us Siang. https://www.interaction-design.org/literature/article/design-thinking-get-started-with-prototyping. *(Accessed 2021)*

Appendix—*100% placement of views*

Grid and Single Column Views—placed at 100% of design size *(1024 x 767px).*

SEARCH HOME CATEGORIES MY LIST SETTINGS

CATEGORY TITLE — Grid

MOVIE TITLE 2021
RATED: G ★★★★☆
1 hr 54 min +

SERIES TITLE 2021
RATED: R ★★★☆☆
S-1: E-1 EPISODE TITLE +

MOVIE TITLE 2021
RATED: NC-17 ★★★★★
3 hr 10 min +

MOVIE TITLE 2021
RATED: PG-13 ★★☆☆☆
2 hr 32 min +

MOVIE TITLE 2021
RATED: M ★★★★☆
2 hr 05 min +

SEARCH HOME CATEGORIES MY LIST SETTINGS

CATEGORY TITLE — Single Column

MOVIE TITLE 2021
RATED: G ★★★★☆
1 hr 54 min +

Short intro opening to Title

Gia quis arum fugia poreperati int la nonectem quia non pro. Wuis arum fugia poreperati int la nonectem non pro minctotatur.

CAST: Top Actor 1 | Top Actor 2 | Top Actor 3

DIRECTED BY: Director Name

PLAY TRAILER +

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