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CS 188 HW3

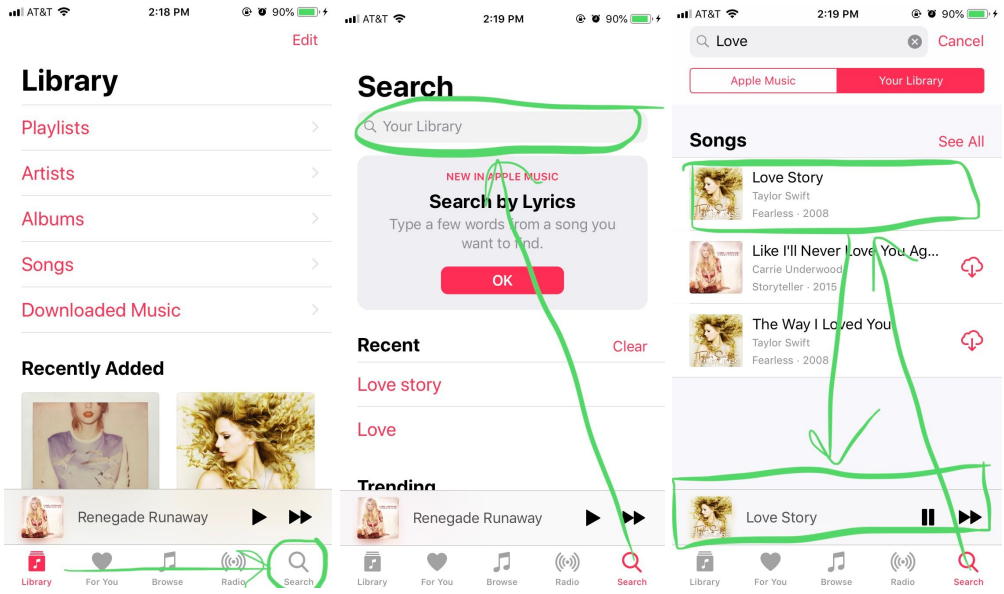
(a) Our three applications are Spotify, Amazon Music and iTunes and our task was adding a song to an existing playlist. Our hypothetical user is a college student who is familiar with technology and often listens to music when walking to class or studying. Our user gets bored easily and likes to listen to new songs, so they frequently add new songs to their playlist.

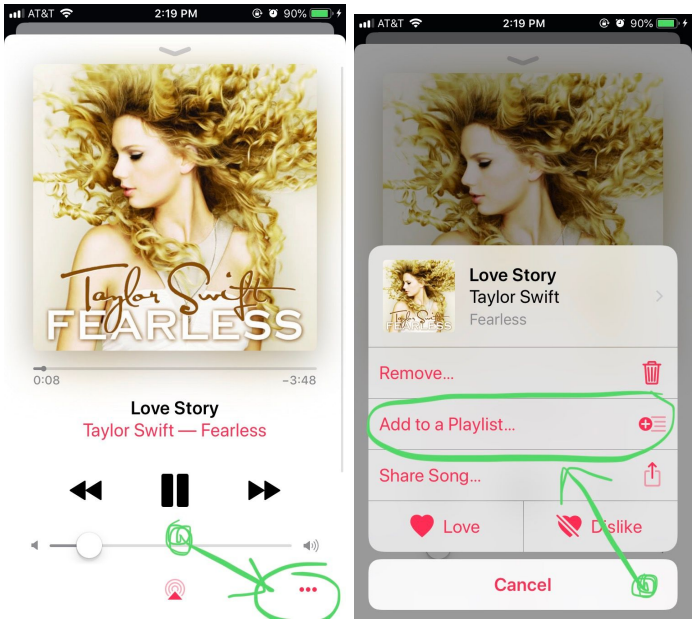
We think that Spotify is the quickest. First we listed out the number of steps for this task for each application. Itunes was 7 steps, Spotify was 5 steps and Amazon Music was 5 steps. Since Spotify and Amazon Music tied, we looked at other features like location of buttons, size of buttons and also clear navigation. Spotify has its search button along the button of the phone while Amazon has it in the top right. Spotify's layout is faster as the button is within the user's thumb reach. Amazon's search button is also not that large and is very close to other buttons, making it easy to accidentally click the wrong button. Spotify is also clearer as they only provide two large, actionable buttons which are clearly marked "Add to Playlist" and "Shuffle Play." With Amazon, after you search a song, there is a plus button and an options button with three dots. Most user's recognize "plus" as add so they would click that first, but the user needs to click the options button which will bring up a menu of options. The button the user should push is unclear, creating confusing navigation. Also, with so many options, the task is slower as the user has to read more and they have to cautiously press as all the options are close to each other.

iTunes was the slowest because it had the most steps, but also was also the most unclear. Adding bought songs is not a conventional navigation. The user first clicks the song which will start playing (sometimes the user does not want the song to start playing), then it display the current song near the bottom. The user has to click on that which will pull up another screen with an options button where the user can click to bring up the option to add a song. Most users do not know to click on the current song near the bottom, it is not a recognizable action and it is an unnecessary extra step that just adds time to the task. There is a lot of ambiguity and thus users often have to click back and forth through the various buttons to achieve their goal.

Steps:
iTunes:

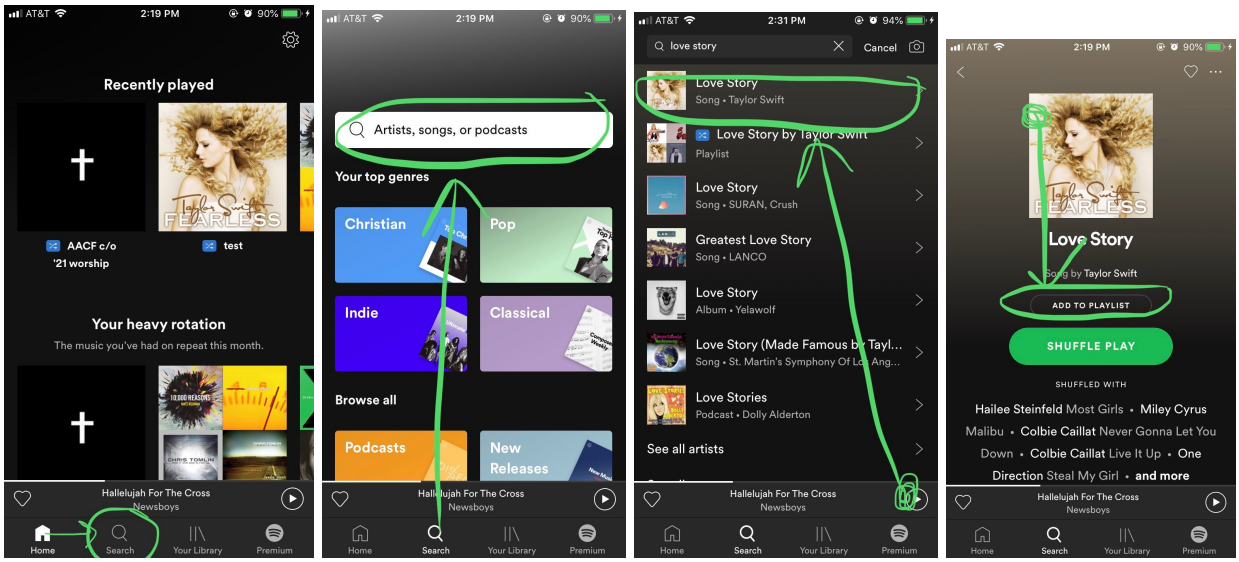
1. Click the Search button (bottom right)
2. Click Search Bar and type in a song
3. Go from search button on phone keyboard to click on the song
4. Click on bottom bar where song will appear after clicking on the song
5. Click options button (bottom right three dots)
6. Click "Add to a playlist"
7. Click which playlist





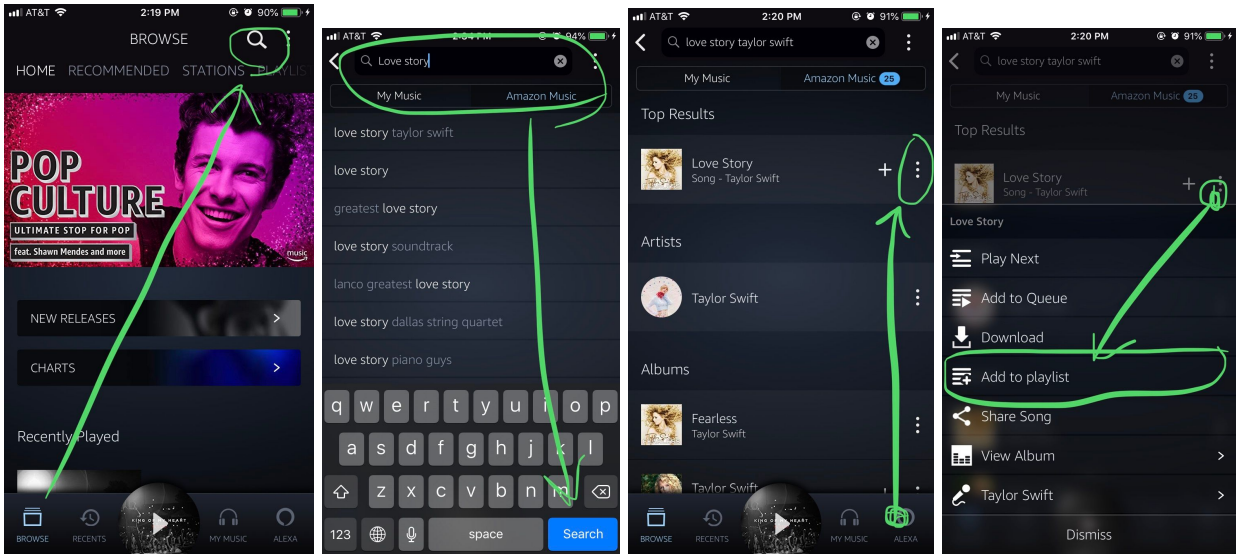
Spotify:

1. Click on Search button
2. Click on search bar and type in the song
3. Go from search button on phone keyboard to click on the song
4. Click “Add to Playlist”
5. Click which playlist



Amazon Music:

1. Click the search icon (top right)
2. Click on the search bar and type in the song
3. Go from search button on phone keyboard to click the options button (three vertical dots on the right)
4. Click “Add to playlist”
5. Choose which playlist



(b) We will use centimeters and the user’s starting point is the first page that opens up when the user clicks the app. The user’s thumb will start in the bottom left hand corner since that is the natural position when holding a phone. With each app, the same song “Love Story” by Taylor Swift is looked up so the time to type the song remains the same across all three.

Application and Steps	Image Reference	Distance (cm)	Width (cm)	Fitts Equation (Assume C1 = 0, C2 = 1)	Comments on values from equation
iTunes:					
Click the Search button (bottom right)	1	5	1.2	3.058893689	
Click Search Bar and type in a song	2	7.9	5.2	1.60334103	
Click on the song	3	5.3	5.9	0.8452774052	
Click on bottom bar where song will appear after clicking on the song	3	6	4.4	1.447458977	
Click options button (bottom right three dots)	4	3.3	0.5	3.722466024	
Click “Add to a playlist”	5	3.5	5.3	0.4013625624	
Click on which playlist	no image	7.3	5.6	1.382469637	
Spotify:					
Click on Search button	1	1.5	1.2	1.321928095	
Click on search bar and type in the song	2	7.9	5.3	1.575860294	
Click on the Song	3	8.7	5.9	1.560300446	
Click “Add to Playlist”	4	4.1	2.5	1.713695815	
Click on which playlist	no image	2.6	5.9	-0.1822033312	this value would be treated as zero
Amazon Music:					
Click the search icon (top right)	1	10	0.5	5.321928095	
Click on the search bar and type in the song	2	9	3.9	2.206450877	
Click the options button (three vertical dots on the right)	3	5.5	0.3	5.196397213	

Click “Add to playlist”	4	4.2	5.9	0.5096743734	
Choose which playlist	no image	7.5	5.9	1.346175641	

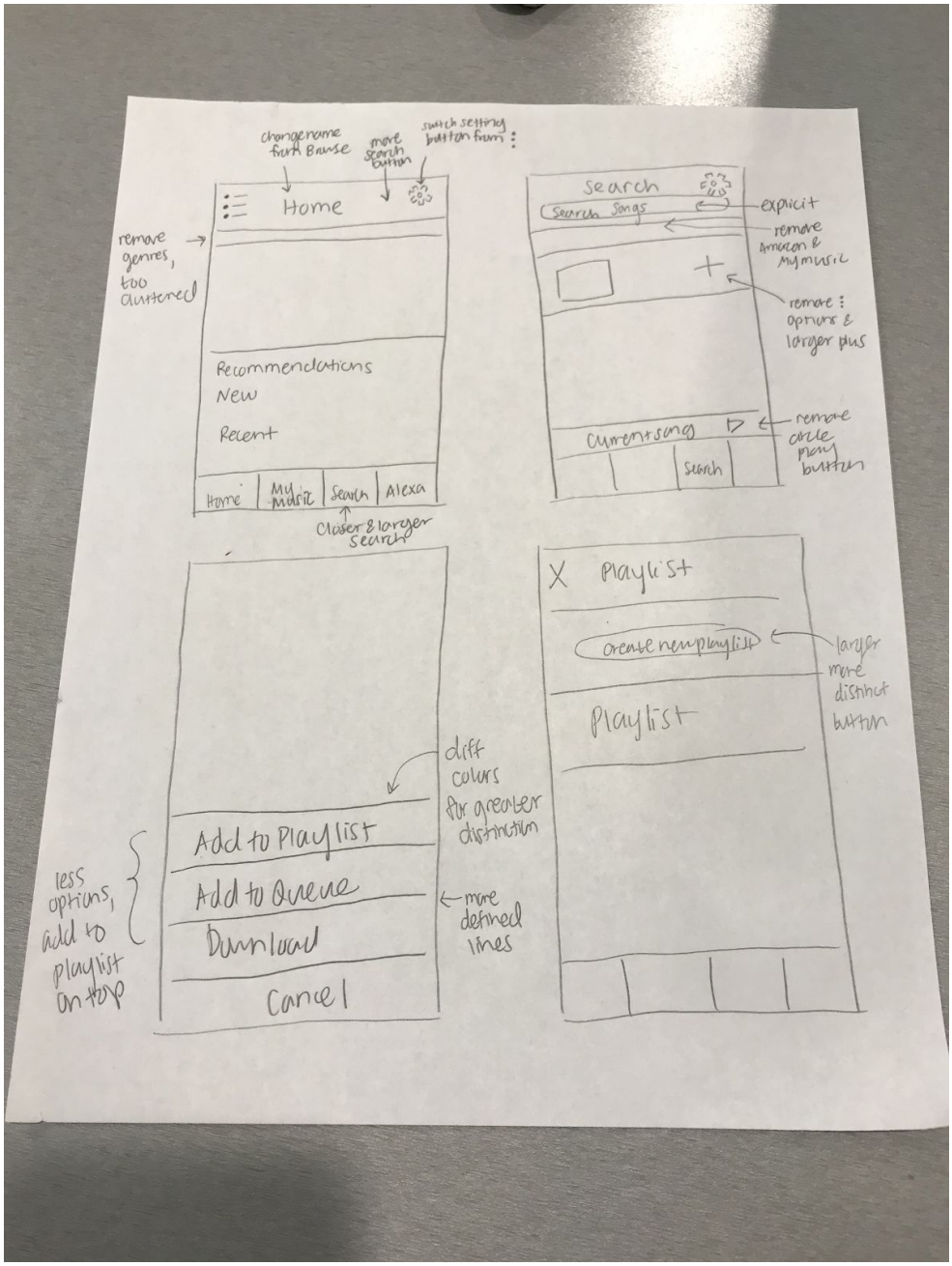
Explanations: The task our team analyze among the three applications is the time it costs to add a searched song into a newly created playlist. According to the table shown above, we have listed the required steps in order to complete the task for each of the application. After collecting the data about the width and the target size, we use input those numbers into the Fitts’s Law equation which is (P = C1 + C2 (log2(2D/W))). We just assume that the constant C1 and C2 are 0 and 1 respectively since the instructions mentions that we do not need to worry about the values. Based on the results obtained from applying Fitts’ Law, we found that Spotify is the fastest and iTunes is the slowest. Since most of the buttons from Spotify are closer to the user’ thumb and more centered around the screen, the travel distance for the task is shorter. For the majority of the iTunes’ control buttons, they are more spread out along the edge of the screen and it takes longer for the users to access the buttons.

(c) According to our Fitts’s Law analysis in part (b) , we reach the same conclusion that Spotify is the fastest for the task of adding a song into an already existing playlist. Based on the calculations, Spotify takes the least amount of time for the task process. There are three specific steps that demonstrate the largest differences of time among the three applications. First for Spotify, the larger, search button at the bottom of the phone screen allows the user to be able to tap the button faster and more easily. The time it takes to reach the button is 1.32 seconds while the time it takes to reach the search button for iTunes and Amazon Music is 3.05 seconds and 5.32 seconds. Since the search button for Amazon Music is at the top right of the screen, it takes the longest time for the user to reach the button. Even though iTunes’ search button is located at the bottom screen, it sit on the very right side of the screen which requires the user’s thumb to travel across the screen width and move a longer distance.

Second, the location of the search bar on Spotify and Itunes is not as high up on the screen. Therefore, it only takes the user 1.57 seconds to reach the search bar for Spotify and 1.60 for iTunes. Amazon music’s search bar positions at top of the screen and the recorded time for the task is 2.20 seconds. Due to the location of the search bar, users need to reach further distance after clicking the search button in order to start the searching of the songs.

Third, Spotify does not require the user to click on an option button before accessing the “Add to Playlist” button. This has shortened up the time it takes to accomplish the task, so the time it requires users to complete this step is 1.71 seconds. As for both iTunes and Amazon Music, they have an extra step which is clicking the very small option button before accessing the playlist button. After clicking the option button for both of the application, users need to read through a drop down list and search for the playlist button. The time it requires for iTunes and Amazon Music to reach the playlist button is 4.12 seconds (time for option button + time for playlist button) and 5.69 seconds respectively. The time for the task is longer and the action of displaying unnecessary information could complicate the design and confuse users even more.

(d) We found it hard to redesign Spotify so we decided to redesign Amazon Music.
Top left (1), Top right (2), bottom left (3), bottom right (4)



(d.1) Since our team found it hard to redesign Spotify, we decided to redesign Amazon Music. First, we adjusted the location of the search button by moving it from the top right corner to the middle position of the bottom screen (1). The adjustment would shorten up the required travel distance for users when attempting to click on the search button. Since the new placement of the button is in the location of a more familiar thumb movement, this helps with recognition and movement time. It is also on the edge of the screen so users don't have to worry about overshooting vertically. We would also enlarge the size of the search button to make it easier for

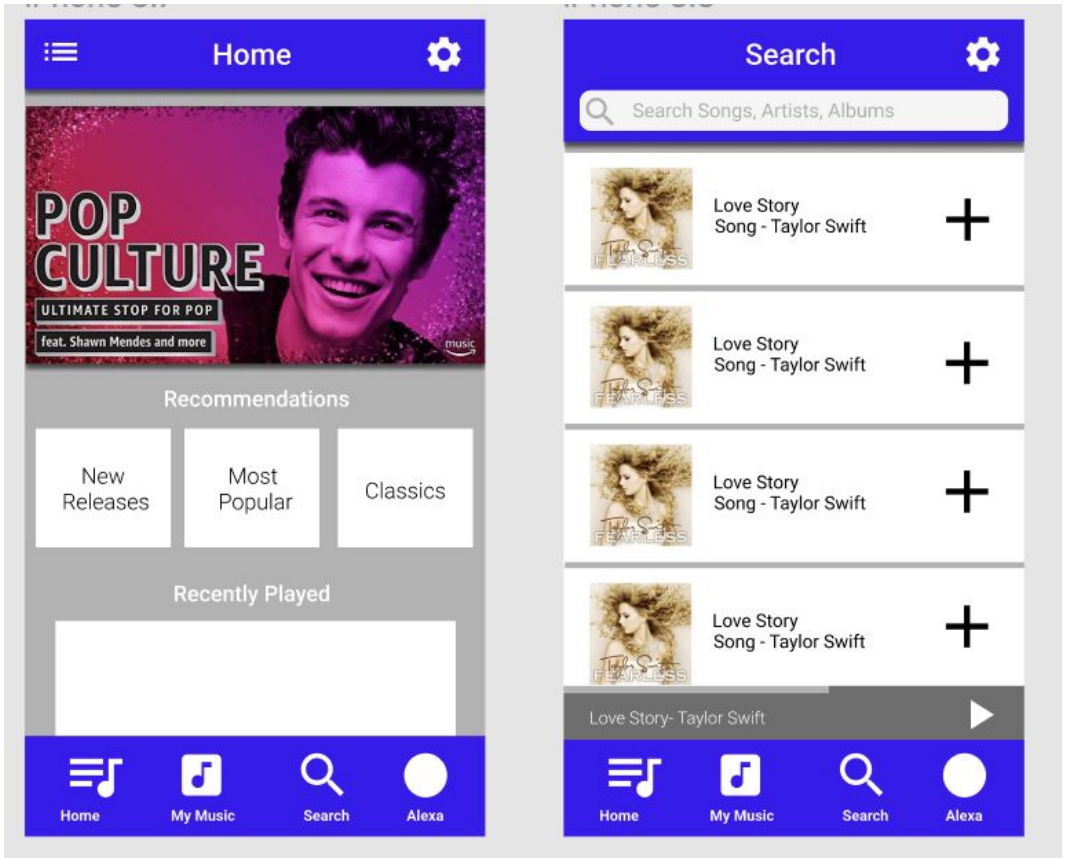
a thumb to click and change the color of major buttons to make actionable buttons stick out to the user. It helps users differentiate between functionalities among the buttons due to the contrast from the background color. Currently the black buttons fade into the black background. We chose gray for the background color which allows white and purple to be noticeable.

Second, we would get rid of the “three dot” option button instead of having the options and plus button since it is ambiguous for each button’s separate functionality. We changed it to only have one larger button, the “plus” button which will do something similar to the current options button and pull up a list of actions (2). We decided to take out options in the list (currently 7 options) and condense it to only three in order to decrease reading time (3). We also put the action “Add to playlist” at the top of the list. This makes it faster to read and easier to click since it is at the edge of the list with one neighboring option that user’s can accidentally click. In this way, the design become more relevant as adding songs to a playlist is a frequent task for college students. Also, since users do not need to read through extra options, it decrease the recognition time and reduces confusion that might arise with first-time users.

Third, we decided to remove the filter sections under the tab of “my music” and “browse” (1). We found that Amazon Music often provides unnecessary functionalities, causing users to take more time to interpret the layout of the application. Less options from the interface means less stimuli for the users to choose from and the shorter amount of time the users take in order to make a decision of what to interact with. This saves recognition time and speeds up the task.

Fourth, we would change the circle play button on the bottom (2). First-time users do not know how to react to the unconventional design. The new adjustment is just a rectangle with the information and buttons, removing extra steps and displaying everything needed.

(d.2)


Home
POP CULTURE
ULTIMATE STOP FOR POP
feat. Shawn Mendes and more
Recommendations
New Releases
Most Popular
Classics
Recently Played
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My Music
Search
Alexa
Search
Search Songs, Artists, Albums
Love Story
Song - Taylor Swift
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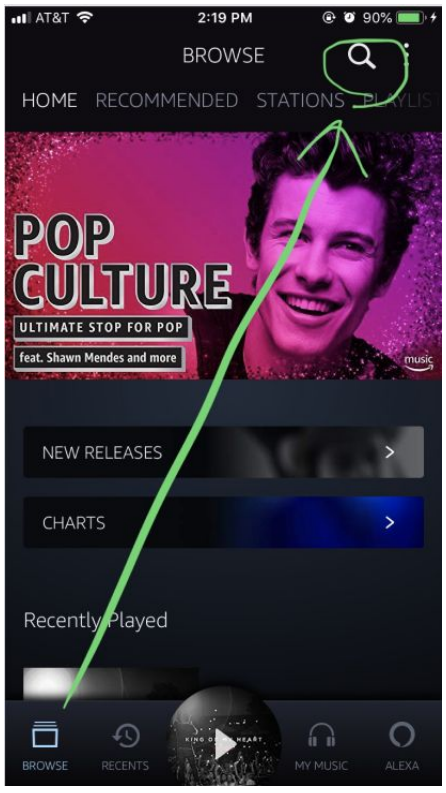
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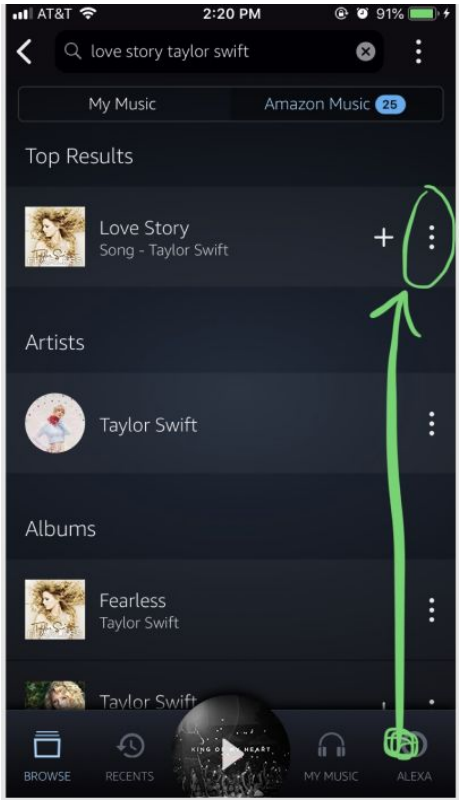
MY MUSIC
ALEXA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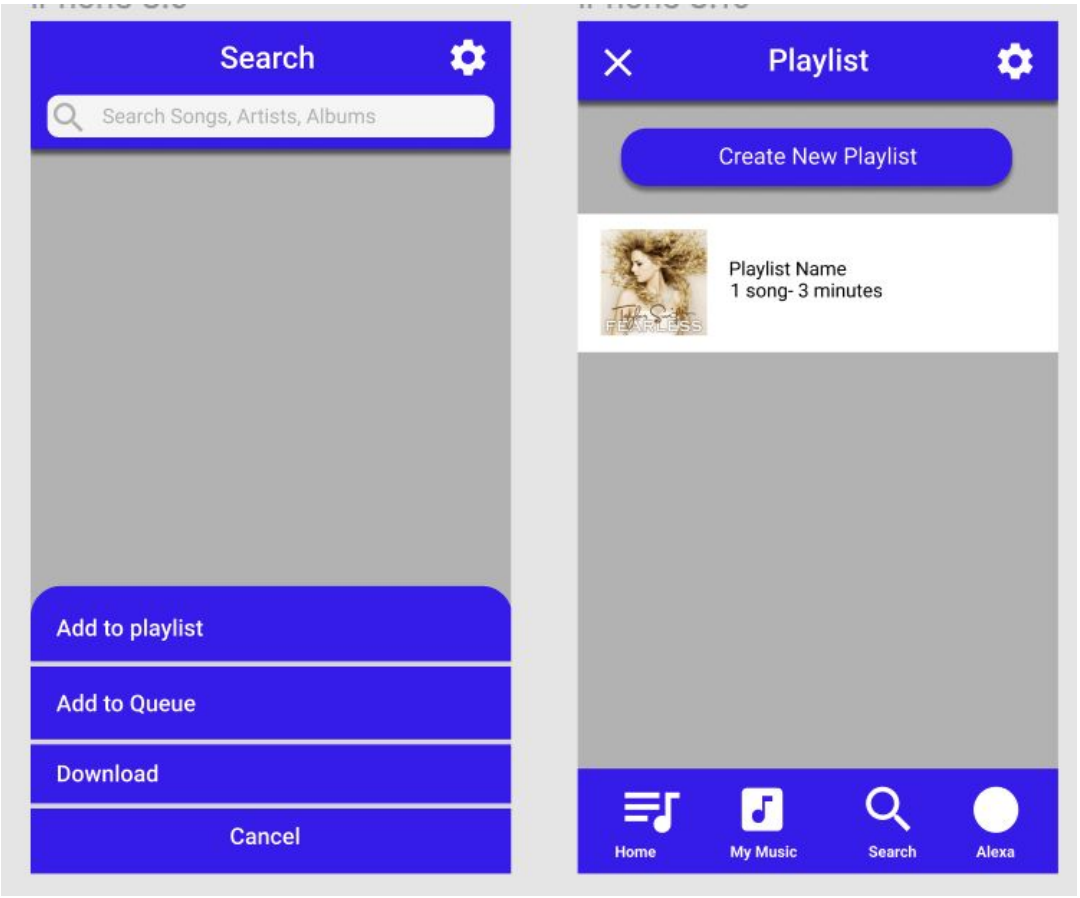
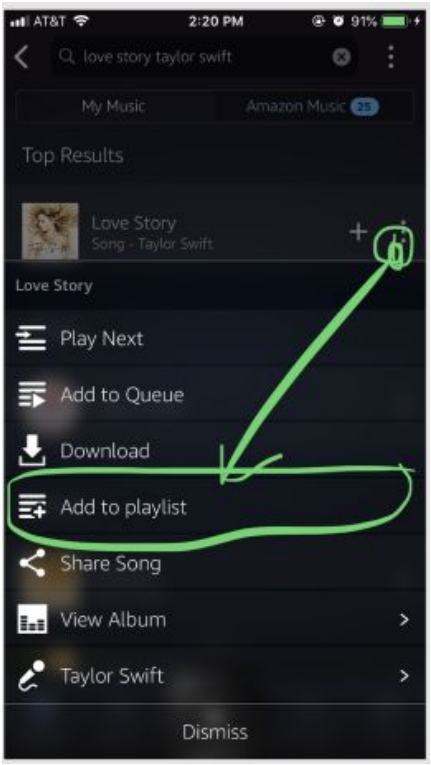

Search
Search Songs, Artists, Albums
Add to playlist
Add to Queue
Download
Cancel
Playlist
Create New Playlist
Playlist Name
1 song- 3 minutes
Home
My Music
Search
Alexa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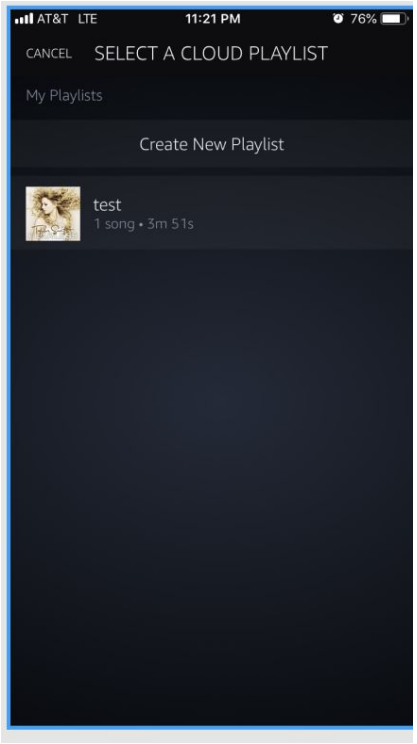
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