

Thumbplay Usability Study

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Presented to Thumbplay by:

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I. Summary

Thumbplay, a new music streaming application, was tested by eight users on a touch screen smartphone. All testing was performed on a Motorola DROID running Android 2.0. Tasks were developed by the group with input from Thumbplay's design team, who provided testers with an internal, expert perspective on tasks. Tasks were designed to test learnability, guessability, effectiveness, efficiency and level of user satisfaction.

Each tester used the application on the DROID for three days to allow for a comprehensive experience. None of the testers had used Thumbplay's applications prior to testing and there were varying degrees of familiarity with the mobile device. Some testers had never used mobile music streaming applications. Most testers had used music streaming services on desktop or mobile devices and expected a similar functionality. Some tasks were completed with ease while others were troublesome. These problems and the proposed fixes are addressed below.

II. Findings

This section contains findings from the 13 tasks that participants completed, along with key observations and findings. By Task No. 9, there were heightened levels of frustration among testers. Tasks resulting in application crash are not listed here.

No. 1: Launch Thumbplay application and create an account.

Average Time Spent on Task: 00:55

Range of Time Spent on Task: 00:30-02:05

Findings:

- All testers were able to easily launch application and create an account.
- High level of qualitative user satisfaction.

No. 2: Explore the application for five minutes and note your general impressions related to it.

Average Time Spent on Task: N/A

Range of Time Spent on Task: N/A

Findings:

- When attempting to complete task, two testers immediately received an error message: [Player error: 1:-1].
- Easily learnable given prior experience with other online music services.
- Testers comfort was due to high level of familiarity with interface.
- More album and artist sorting options would be helpful for finding desired music.
- Genres are too broad. Testers expected more detailed sub-genre categories, [e.g. Rock > Indie > Metal].
- Very good audio quality, especially through headphones.

No. 3: Find an album you like. Note the name of the album and the artist. Start playing the album.

Average Time Spent on Task: 01:08

Range of Time Spent on Task: 00:14-02:55

Findings:

- All testers completed tasks.
- Search results were not presented alphabetically. Testers said they would prefer an alphabetical sort of artists and a reverse chronological sort of albums [newest to oldest].
- Testers noticed inconsistent response to changes in screen orientation.
- Landscape display is not consistent with keyboard orientation.

- Device does not automatically switch to landscape display even though the device has been rotated and keyboard slider is out.
- Touch interaction with album thumbnails obscures the album title text; text should be above album thumbnails.
- Unable to choose album by selecting thumbnails.
- No spelling suggestion or auto-correct function in search. For example, a search for Kanye West when misspelled as Kayne West did not resolve to correct artist [or similar suggestions] and tester had to go back and correctly spell name to retrieve desired artist information.
- We recommend enhanced auto-fill, which recognizes most popular and significant artists.

No. 4: While continuing to listen to the album, search for and create a 5-song playlist of your favorite songs of an emotion/context. Start playing the playlist.

Average Time Spent on Task: 11:07

Range of Time Spent on Task: 02:31-15:00

Findings:

- 5 out of 8 testers were unable to effectively complete task due to application crashing.
- Some testers found the pathways required to complete the task to be non-intuitive and difficult.
- Task took a considerable amount of time.
- Some testers added entire albums and then deleted particular songs to create playlist. Other testers found searching by song extended the time they needed to complete the task.
- Overly tight touch area had testers accidentally playing songs that they did not want to play.
- Some testers did not realize that it was possible to search for items other than artists, such as albums and songs.

No. 5: Add the currently playing artist to your favorites.

Average Time Spent on Task: 02:12

Range of Time Spent on Task: 00:10-05:45

Findings:

- 2 out of 8 testers were unable to effectively complete task.
- 1 participant experienced error message: [Thumbplay has stopped unexpectedly. Force quit].

- Unable to add a favorite without going to playlist and adding favorites from there.
- Lack of clear and consistent path for completing task.
- Low guessability induced aimless wandering.

No. 6: Find 3 artists you like and favorite them.

Average Time Spent on Task: 02:01

Range of Time Spent on Task: 00:47-05:00

Findings:

- Most testers found it easy to favorite artists.
- Testers were impressed with catalog selection.

No. 7: From your favorite list, choose one artist, start playing their songs and continue listening to their songs.

Average Time Spent on Task: 00:44

Range of Time Spent on Task: 00:15-01:24

Findings:

- All testers easily completed task and found it to be straightforward.

No. 8: Go to Google and search for a bio of the artist you are listening to and read it.

Average Time Spent on Task: 01:32

Range of Time Spent on Task: 00:24-04:00

Findings:

- All participants completed task.
- Multitasking with the web browser while Thumbplay ran in the background was seamless.

No. 9: Go to the "Currently Playing" list, skip down three songs and start playing that song.

Average Time Spent on Task: 01:28

Range of Time Spent on Task: 00:25-03:07

Findings:

- 3 out of 8 testers could not locate the unlabeled icon for the "Now in Player" list.
- Those that did find the "Now in Player" button experienced unreliable touch response.
- As a result of the above problems, some testers noted high levels of frustration brought on by their inability to complete tasks.

No. 10: Check on your subscription status and note what it is.

Average Time Spent on Task: 01:40

Range of Time Spent on Task: 00:10-06:07

Findings:

- 4 out of 8 testers could not find subscription information efficiently.

No. 11: Go back to your favorited artists, first find a song you like, then find the way to get recommendations for related tracks. Play one of those related tracks.

Average Time Spent on Task: 03:25

Range of Time Spent on Task: 00:30-07:02

Findings:

- Some testers thought that "Similar Artists" feature was the only way to complete task and did not recognize "Playlist Genie" as source of related tracks. As a result, 6 out of 8 testers could not effectively complete task.
- Some recommendations included duplicate songs and artists.

No. 12: Without using search, go to your favorite genre and find a track you like and listen to it.

Average Time Spent on Task: 01:14

Range of Time Spent on Task: 00:22-03:59

Findings:

- All testers easily found music appropriate to their chosen genre.
- Limited selection and granularity of genres did not aid in browsing.

No. 13: Sign out and then close the application.

Average Time Spent on Task: 00:45

Range of Time Spent on Task: 00:10-02:33

Findings:

- 7 out of 8 effectively completed task.
- Many of those that could find Sign Out said that having it under Settings was not particularly guessable, while other users were able to complete this task with ease after having gained familiarity with the application.

III. Feedback

Satisfaction ratings. Likert scale: 1-5.

Observation	Average Response	Range
Features and Capabilities	3	2-3
Visual appeal	3	2-5
Ease of use	2	1-3
Technical reliability	2	2-3
Speed	3	3-4
Selection of music	3	1-4

Overall, were you able to complete the tasks in the method you anticipated?

Most testers found the application operated as expected. Some experienced confusion with findability issues when playing songs from albums v. playlists.

Did the application have the functionality you expected?

Testers were frustrated by the inability to easily identify the best method to perform the tasks. This was not due to a lack of functionality.

Based on your experience, what changes or enhancements would you make?

Alison: "I would make the 'Currently Playing' feature more visible on the screen. I would make it easier to add songs from anywhere. I would make the 'Related Tracks' feature more guessable."

Chris: "Should be able to use the scrubber to randomly jump around within the currently playing song."

Jan: "It would be helpful to have the name of the 'Playlist Genie' revised to something that clearly indicates its purpose. I would also really like to add a song to a playlist from the album."

Jeremy: "I would make it so that you could retain the songs for some length of time on the device to prevent interruptions from going on the subway, etc."

Kevin: "I should be able to add a song to my playlist from any search path [artist, album, genre search, for example]. I should also be able to add a song directly from the player screen. I would have liked to interact with and browse the album images. The touch area was too small to allow this."

Nicki: "I would like the album lists to have functions that act on each single song within the album, e.g., add that song to a playlist. Add any information that would differentiate between bands, such as geographic origin, label and release date range. Make sure there aren't multiple entries for the same band [The Dirty Projectors v. Dirty Projectors], e.g., use a controlled vocabulary. If there is a problem with accidentally playing songs, a confirmation pop-up before starting the song would be helpful."

Sarah: "I would like to add the option 'View All' to artists, songs or albums while browsing music. I would also like to have an option available in the Settings to be able to control whether a track plays automatically."

Vicki: "Add a 'back' button to allow me to listen to music and go back to an artist's page. Develop suggestive resolve on typos of artist names. The touch area is too tight, creating user 'mistake' when selecting track v. artist name. Refine use of icons -- search icon in application is same as device but each operate differently [device takes you to Google, for example]. Thumbplay menu icon in upper-left does nothing and seems it should not be there. Some labeling needs to be refined. For example, guessing at what Playlist Genie did was not intuitive."

Was there anything that surprised you? If so, what and why?

Alison: "The interface was simple, but this made it confusing on how to find certain things and made them seem hidden. The genres were very broad."

Jan: "I was surprised to find out how easy it was to pull yourself out of a song that was playing while trying to add another song to a playlist."

Jeremy: "Also impressed with depth of music catalog, although I would have preferred more options in terms of classical music."

Kevin: "Impressed with the catalog. I actually discovered new music while using the app."

Nicki: "The selections feel limited but there is at least something for everyone. I feel like I'm only listening to what's popular -- the bands I'm much more likely to have in common with other users and not smaller, lesser-known bands. Like Kevin, I did discover a new band while using the app."

Sarah: "I was surprised that music genres weren't divided into more sub-genres. This is more of a device-specific issue, but I was also surprised that the Droid speaker was on the back of the phone. While listening to an album, I would set the phone down only to discover that muffled the music playing."

Vickie: "Impressed with depth of music catalog."

How likely are you to recommend the Thumbplay Music application to a friend?

Tester	Likert Scale Recommendation Range: 1 [not likely] to 5 [very likely]
Alison	2
Chris	2
Jan	1
Jeremy	1
Kevin	2
Nicki	1
Sarah	1
Vickie	3

What is the primary reason for your score on question 5?

Alison: "It was difficult to scroll through results without accidentally playing a song. Sometimes albums and songs did not load. I could not add songs from the albums although I did find interesting music."

Chris: "While it's a low-risk way to explore a large amount of music, being a bit like "Netflix for music," one reservation would hinge on where you are likely to use it. For me, two places where I spend a fair bit of time either have unreliable cell phone reception or none at all: [1] the building where I work on 16th St. gets unreliable reception; I did some testing there and could hardly get anything to play for more than a few seconds before cutting out and [2] the subway, which of course gets no reception at all."

Jan: "I am not really a big music person and don't talk about it much with friends. I would be more inclined to suggest a free service."

Jeremy: "I have to admit, I wouldn't recommend it for the simple reason that I prefer to listen to my own music, which I own or get it for free through iTunes or Pandora. I usually bike with my iPod, and I prefer having a separate music device from a phone. It's also easier to switch songs with an iPod."

Kevin: "Most of my friends are tech savvy, have very particular music tastes and are on a tight budget, which means that: [1] they already have their own way of getting new music on the web [online radio, blogs, file sharing] or [2] would rather buy records in a record shop [either online or a physical space.] This is in no way meant to be a forum on the ethics of free music acquisition, but there are a lot of other options out there. The concept of a subscription-based service is foreign to most people I know."

Nicki: "I've seen better applications with more functionality available on the web so I expect a mobile application to be closer to that. This app doesn't offer enough to convince me to use it instead of browsing at home, acquiring the music I find that I like, and loading that music onto my mobile device. The streaming feature isn't attractive enough on its own, to draw me away from my existing patterns. Of course, I don't know anyone who has been interested in streaming music on their mobile device, perhaps that will change."

Sarah: "I don't know anyone who would pay for a monthly music-streaming subscription service when there are other free alternatives to discovering new music. I think an annual fee would be better suited for this service."

Vickie: "I don't like subscription-based services. I would recommend Thumbplay to people who like subscription-based services and I would equate this with Microsoft's Zune. If they prefer ownership and purchase of their music, I would recommend iTunes. Personally, I like iTunes better. Overall, I would say that Thumbplay is functional and has a good music library."

Did you encounter any problems? If so, please explain:

Alison: "I had trouble with the 'Related Tracks' function. It was not clear or obvious that the 'Genie' was the related tracks feature. I also had trouble finding the 'Currently Playing' feature. There should be more options on the homepage, which is where I expect to find things to direct me in the use of the app as most apps I use have this is very clearly marked."

Chris: "Occasional connection problems despite having a good cell phone signal. In a few cases, none of the tracks from a particular album would play [showing 'Connection problem' message every time] despite having at least 3 out of 4 bars of reception [for example, Mark Feldman's album 'Oblivia']. Also, in the player screen, the text of long song titles is clipped on the right side of the page. For an example see: 'Peace, Love and Understanding.'"

Jan: "I had trouble with multiple forced closures. It was difficult and frustrating trying to locate how to generate the playlist of related tracks -- I had given up and moved on to another task by the time I located the 'Playlist Genie.'"

Jeremy: "Sometimes albums failed to load. I didn't like that you couldn't click a button to go from an album playing back to a playlist or to shuffle songs."

Kevin: "The application quit unexpectedly twice. Some songs said 'not available for streaming at this time.' Not sure what this meant."

Nicki: "I had a couple of errors that I explained above. I thought I found the band I was looking for but it was actually a different band and there wasn't anything that helped me realize that before I played the album."

Sarah: "I experienced two application crashes and three player errors while completing these tasks. One of these crashes occurred in my first five minutes of exploring the app."

Vickie: "Application froze when trying to access artist via footer [name automatically loaded when conducting an artist search]. I did not like how long it took to resolve to horizontal display and some labeling is not very intuitive [Playlist Genie]."

IV. Priority Fixes and Suggestions

After analyzing the results and feedback from the testing sessions, several recurring issues became apparent that are negatively impacting the usability of the Thumbplay application.

Access to Content:

- Genre searching needs to be refined with sub-genres and a "view all" option.
- Implement a controlled vocabulary behind author listings to prevent redundant entries [e.g., there are two entries for Lady Gaga].
- Need to be able to add songs to a playlist from multiple search paths, [e.g., by album, artist, genre and song].
- Unify the various ways to interact with songs to improve consistency.
- Clarify criteria behind what is meant by "Top Artists" and "Top Songs."
- Incorporate auto-correct/spelling/auto-fill suggestions.
- "Currently Playing" or "Playing Now" feature should be more guessable.

Navigation and Labeling:

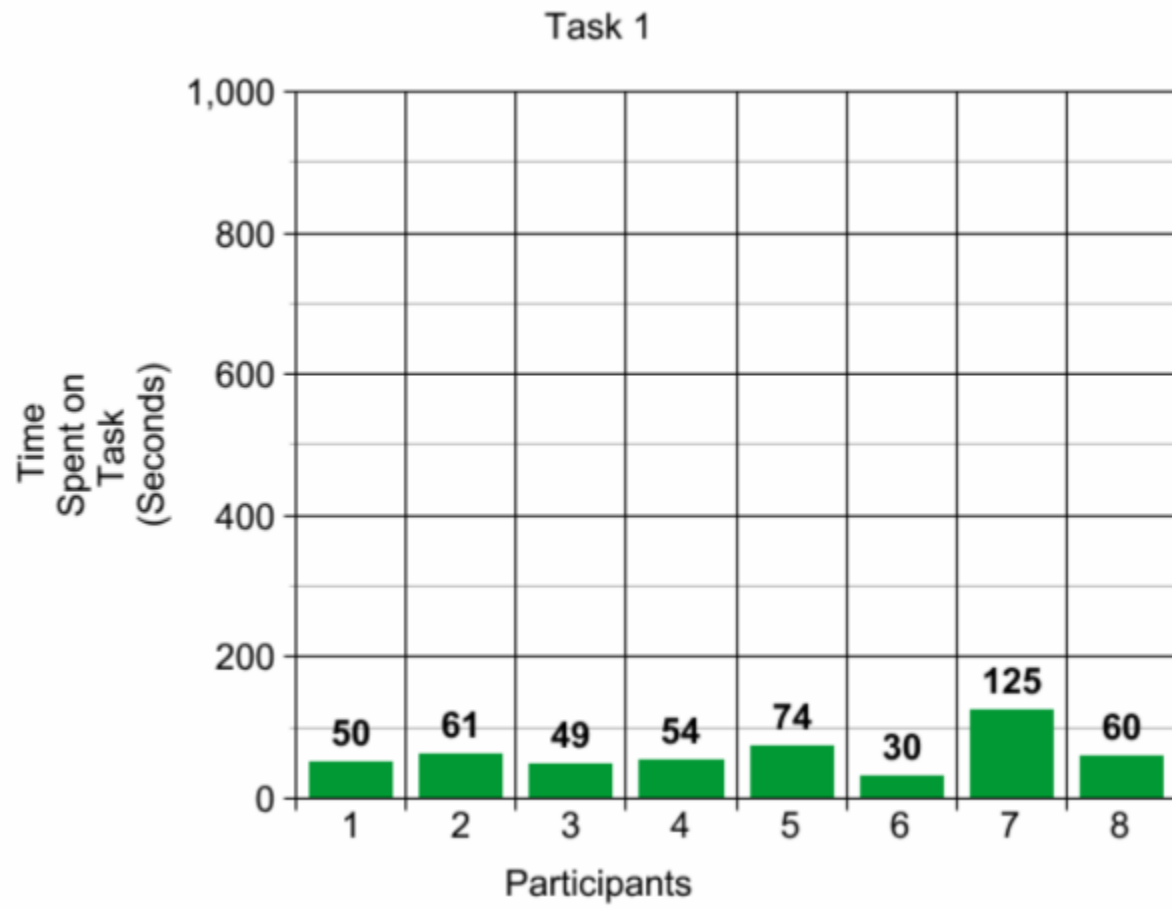
- Error messages were too technical and difficult to understand.
- "Playlist Genie" should be renamed and made more visible/findable.
- Add a "home" button from the album playing page.
- Add an integrated "back" button.

Technical Issues:

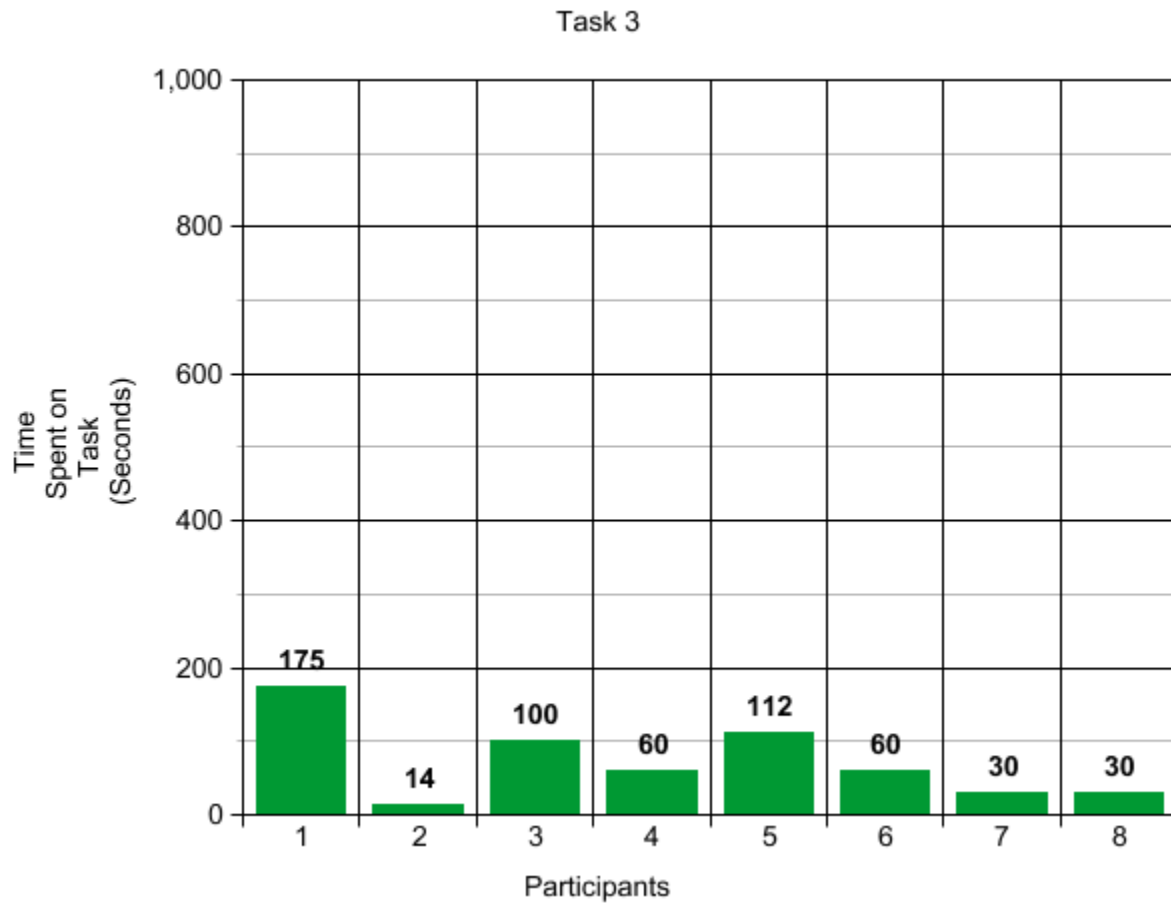
- Landscape orientation should be available at all times, especially when keying in text or scrolling through horizontal lists.
- There should be a space to touch and scroll without accidentally clicking on a song.
- DROID [running Android 2.0] specific issues:
 - The speaker is on the bottom of the phone, which muffles the sound when the device is lying flat.
 - There is a problem with the device locking and songs stopping when left idle for a short period of time.
 - There is a problem with the device continuing to play music at full volume when earphones accidentally disconnect.

V. Appendix

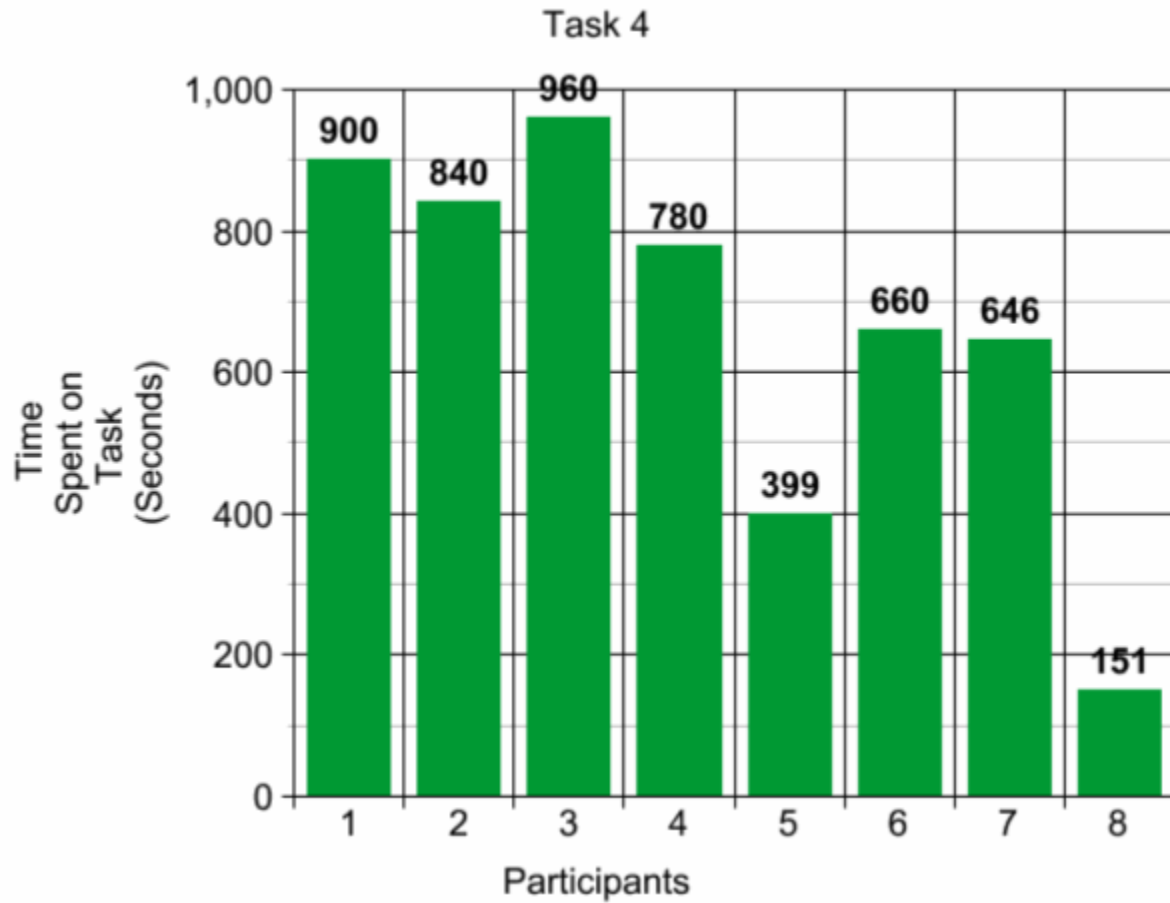
Task 1: Launch Thumbplay application and create an account.



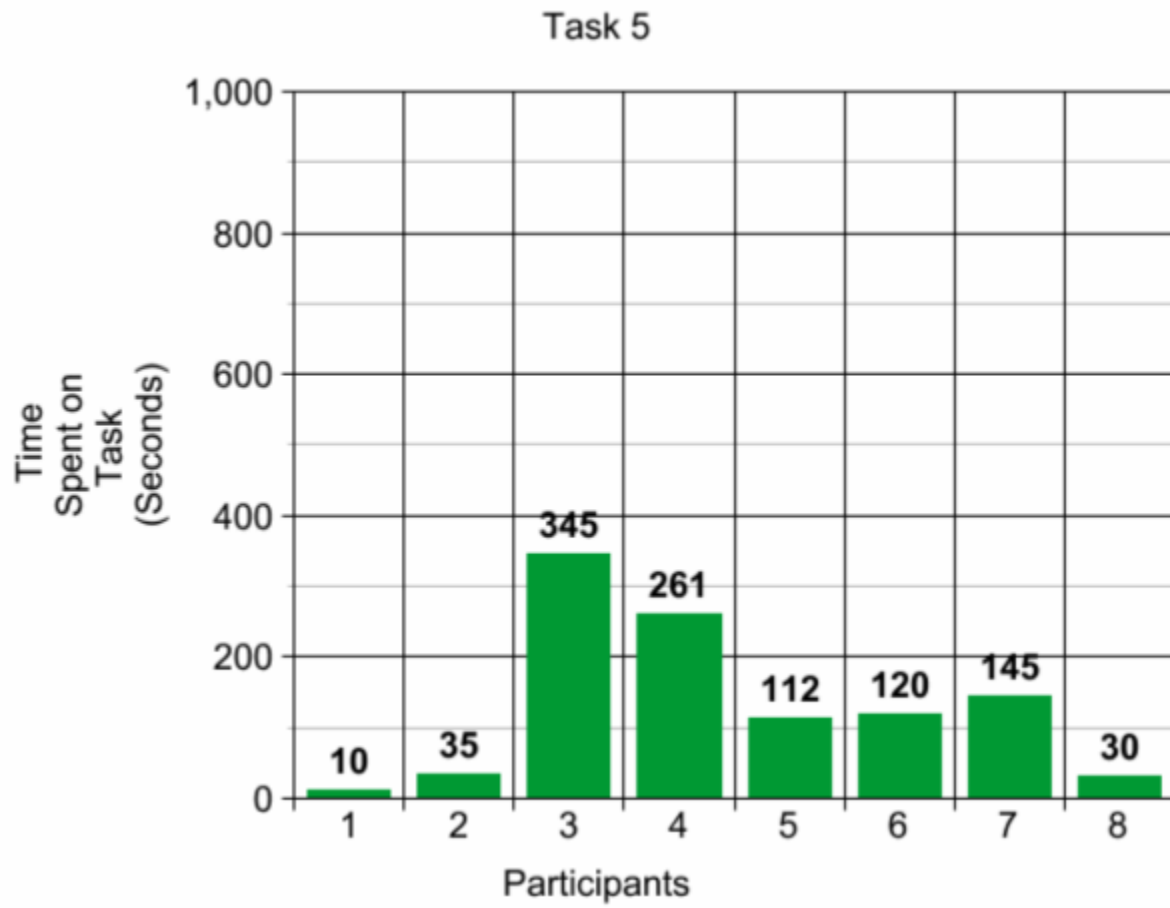
Task 3: Find an album you like. Note the name of the album and the artist. Start playing the album.



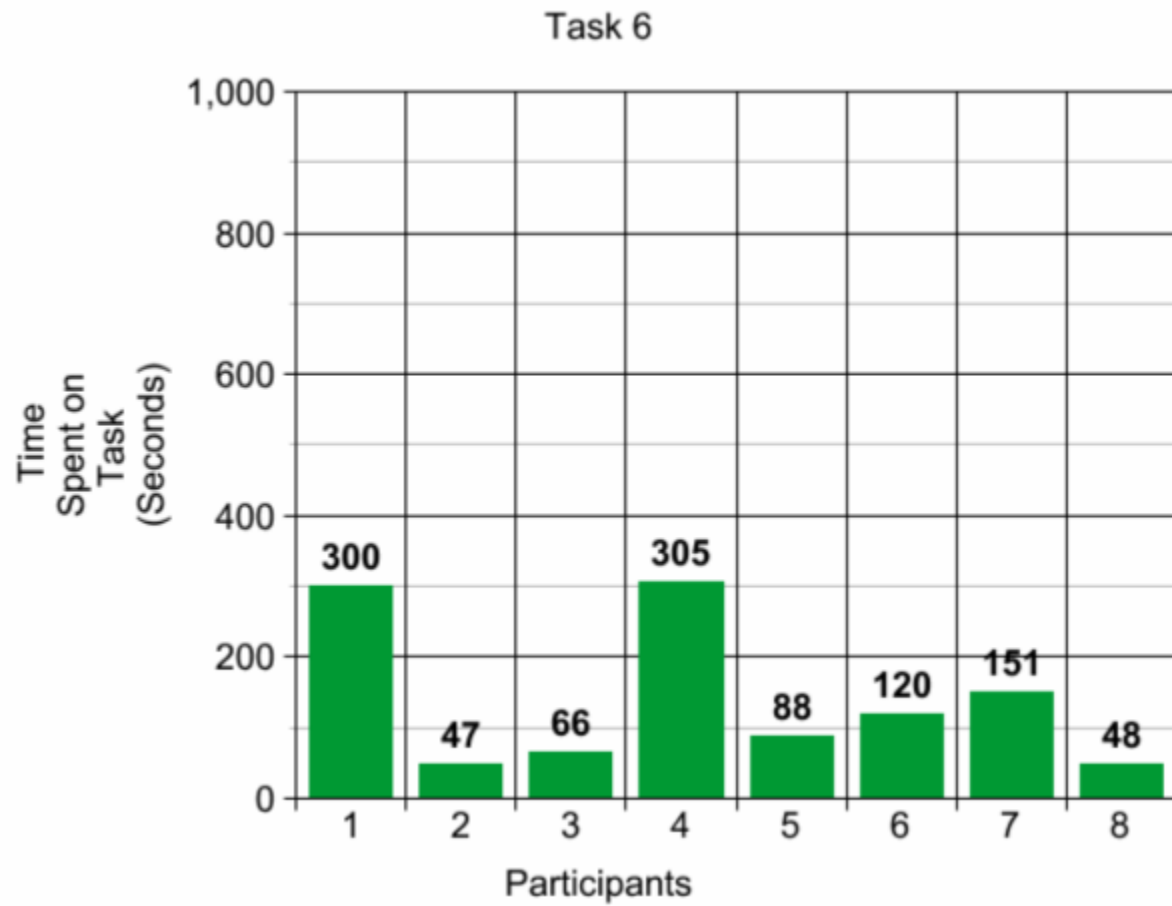
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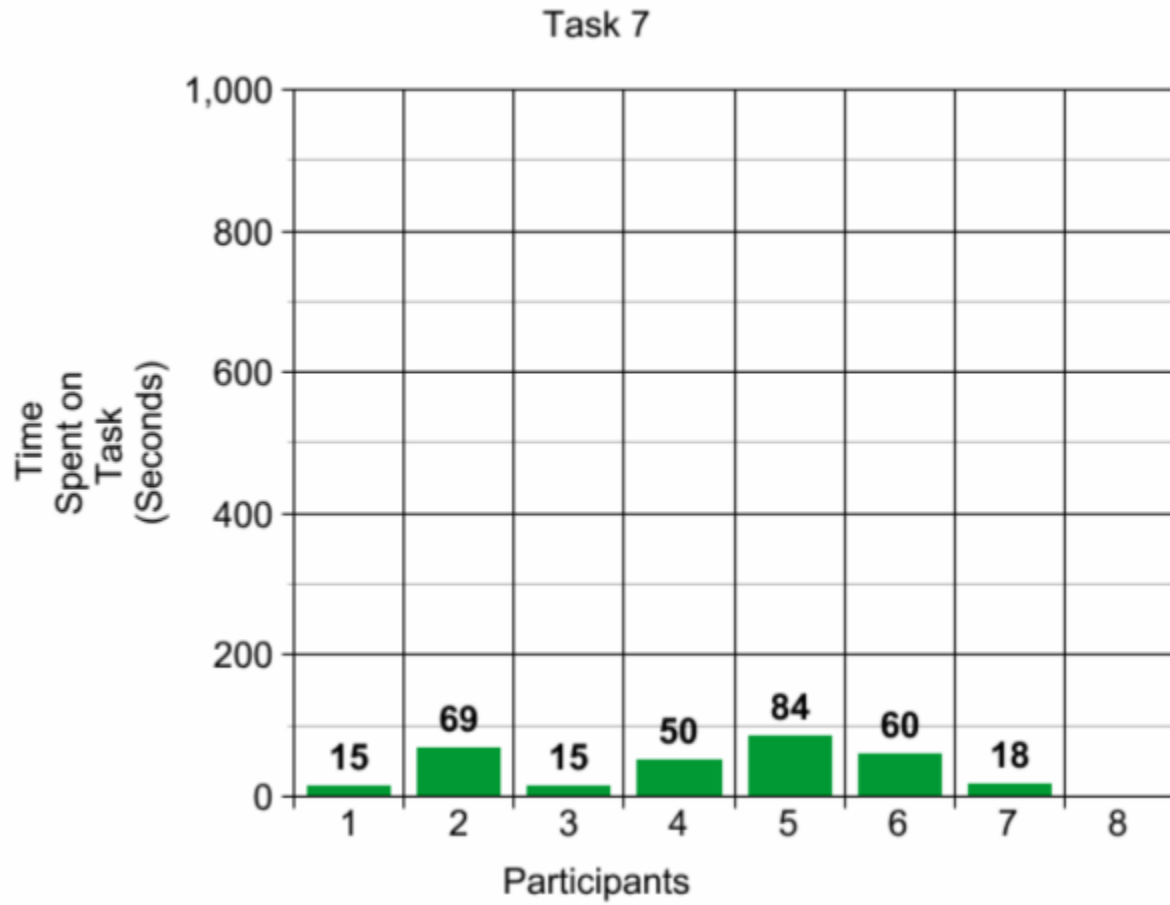
Task 5: Add the currently playing artist to your favorites.



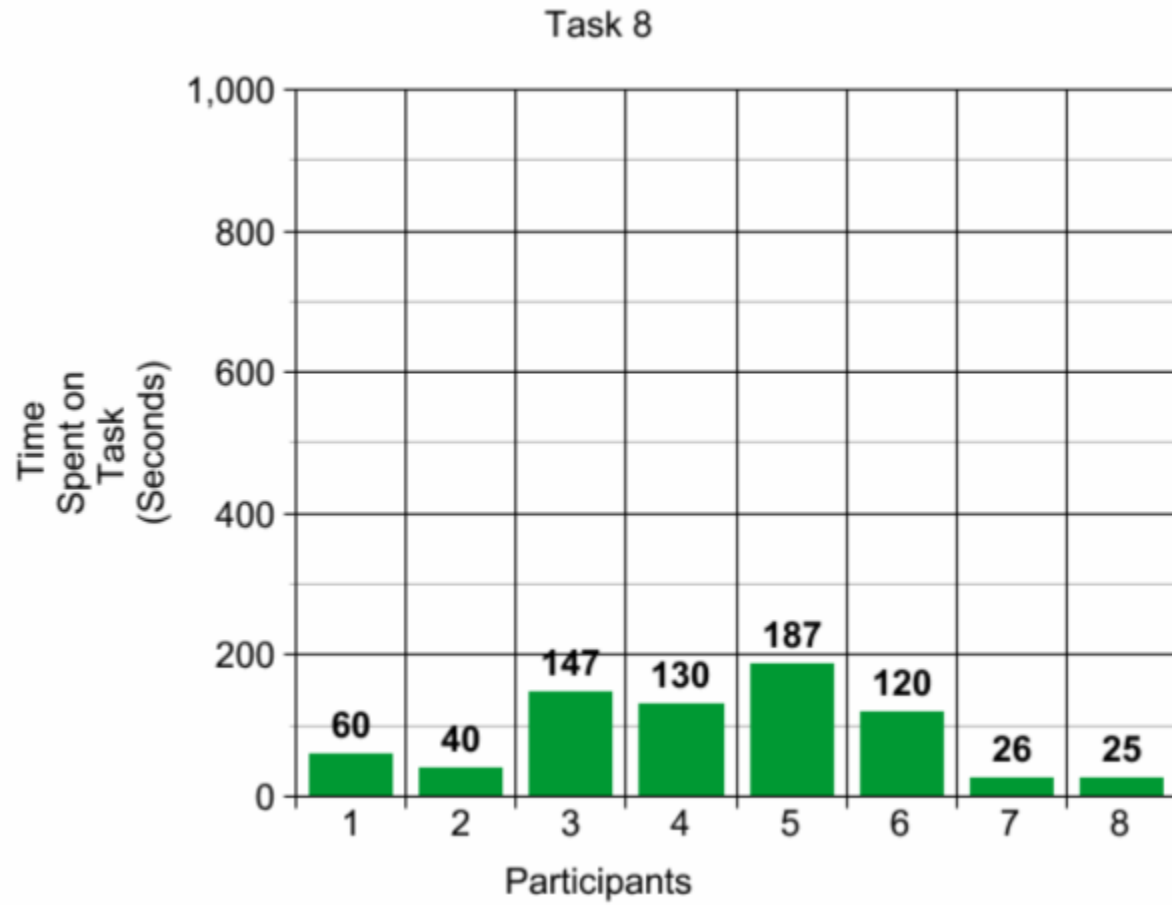
Task 6: Find 3 artists you like and favorite them.



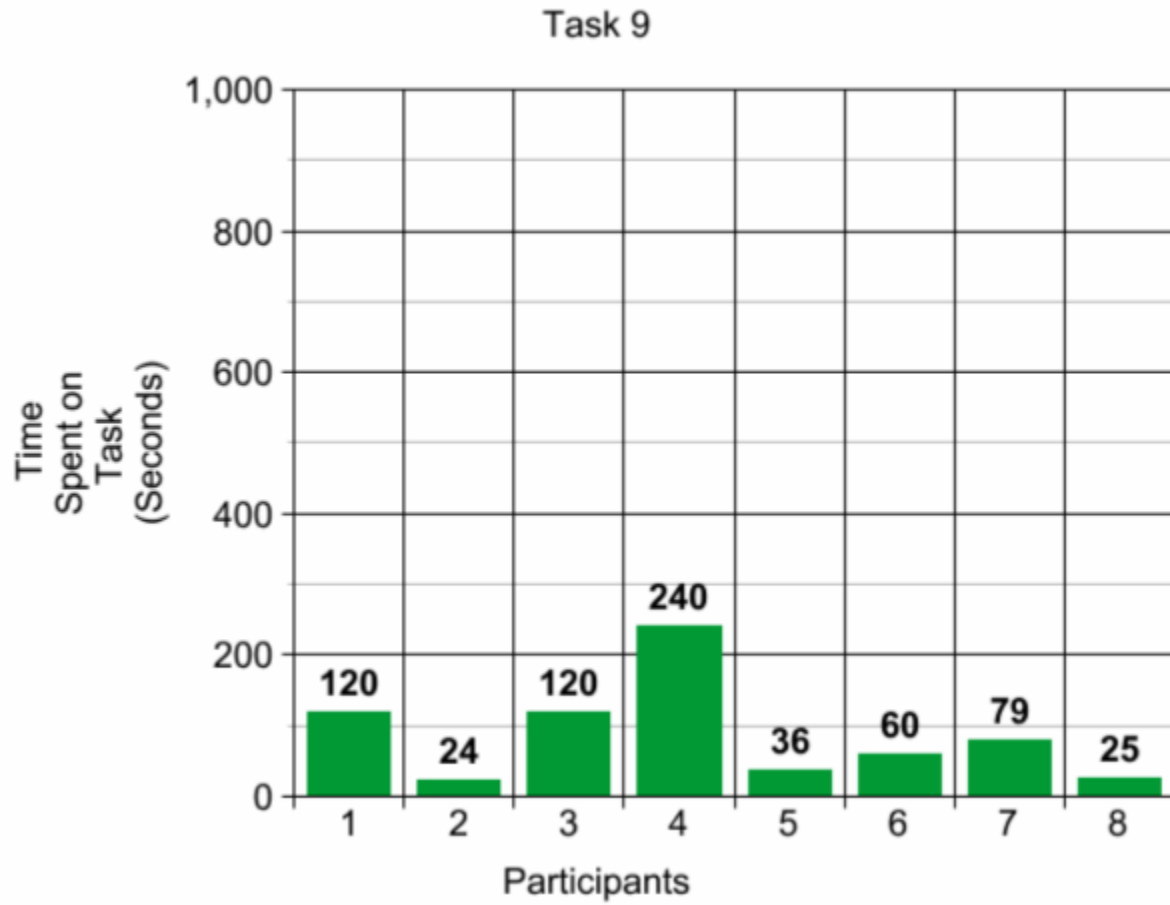
Task 7: From your favorite list, choose one artist, start playing their songs and continue listening to their songs.



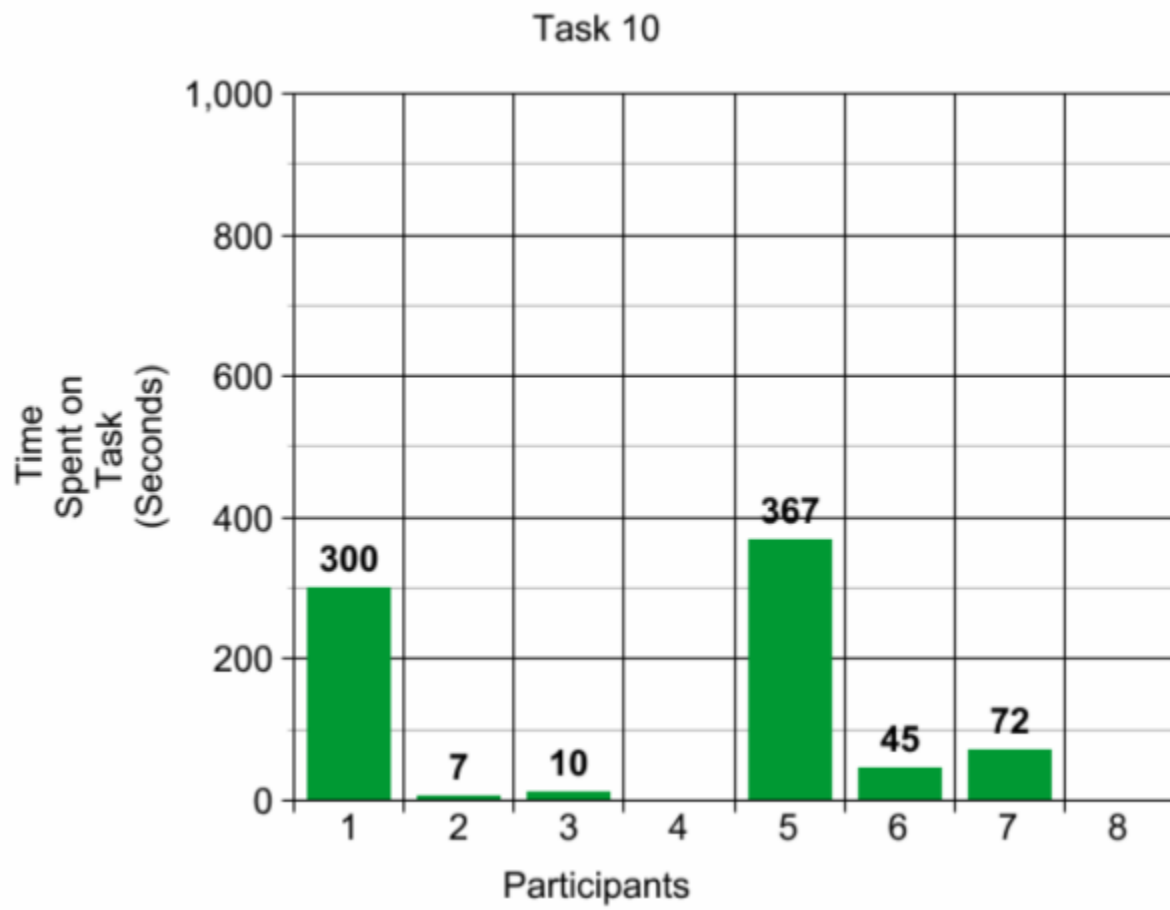
Task 8: Go to Google and search for a bio of the artist you are listening to and read it.



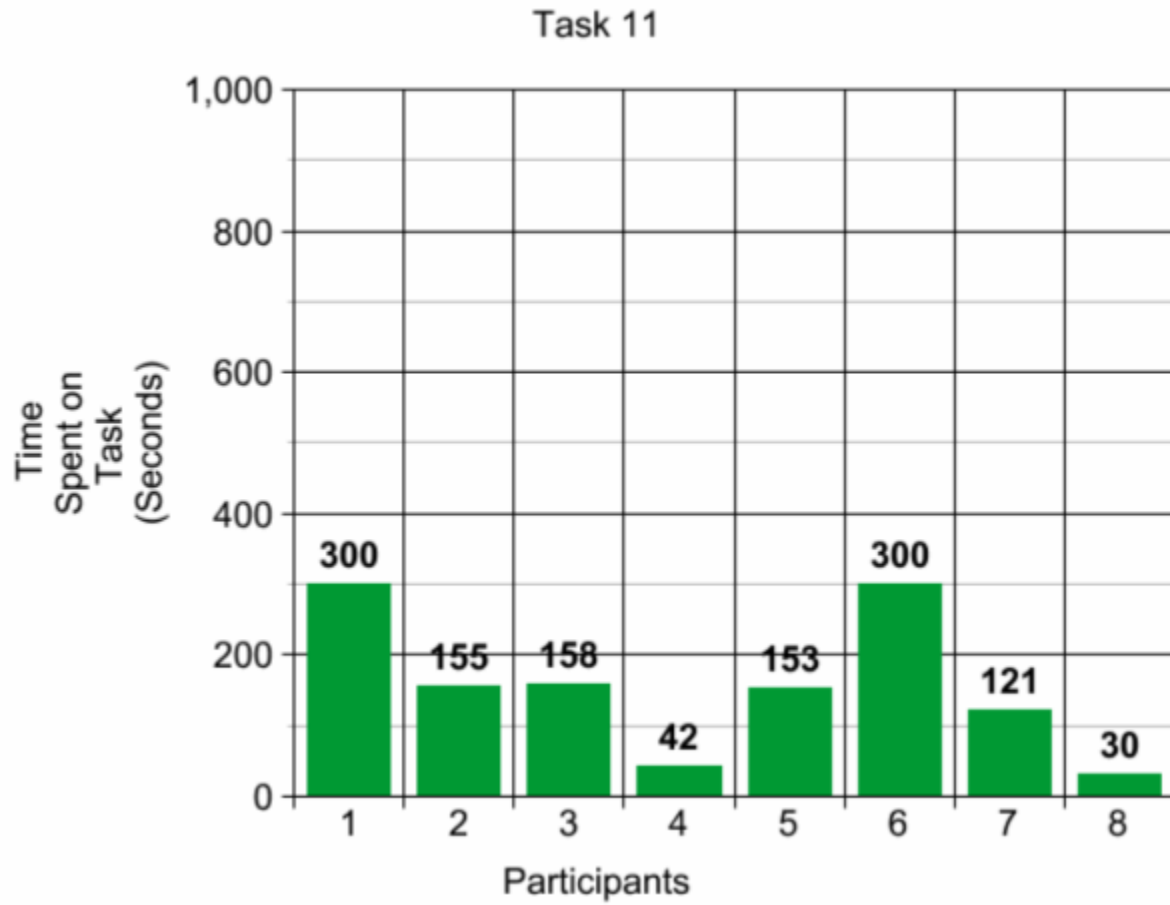
Task 9: Go to the "Currently Playing" list, skip down three songs and start playing that song.



Task 10: Check on your subscription status and note what it is.



Task 11: Go back to your favored artists, first find a song you like, then find the way to get recommendations for related tracks. Play one of those related tracks.



Task 12: Without using search, go to your favorite genre and find a track you like and listen to it.

