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1  """
2  CS241 Homework 04
3  Written by Chad Macbeth
4  """
5
6  from collections import deque
7
8  class Song:
9
10     ### Initialize Song object
11     def __init__(self):
12         self.title = ""
13         self.artist = ""
14
15     ### Prompt user to provide title and artist
16     def prompt(self):
17         self.title = input("Enter the title: ")
18         self.artist = input("Enter the artist: ")
19
20     ### display song information
21     def display(self):
22         print ("{} by {}".format(self.title, self.artist))
23
24     ### Simulate a music playlist
25     def main():
26         # Create a double ended queue
27         playlist = deque()
28
29         # Loop until user selections option to quit
30         option = 0
31         while (option != 4):
32             print("Options:")
33             print("1. Add a new song to the end of the playlist")
34             print("2. Insert a new song to the beginning of the playlist")
35             print("3. Play the next song")
36             print("4. Quit")
37             option = int(input("Enter selection: "))
38             print()
39             if (option == 1):
40                 # Create a song, populate it, and add to the end of the queue.
41                 song = Song()
42                 song.prompt()
43                 playlist.append(song)
44                 print()
45             elif (option == 2):
46                 # Create a song, populate it, and add to the beginning of the queue
47                 song = Song()
48                 song.prompt()
49                 playlist.appendleft(song)
50                 print()
51             elif (option == 3):
52                 # Display the playlist. Display an error if its empty.
53                 if (len(playlist) == 0):
54                     print("The playlist is currently empty.")
55                 else:
56                     song = playlist.popleft()
57                     print("Playing song:")
58                     song.display()
59                     print()
60             print("Goodbye")
61
62 if __name__ == "__main__":
63     main()
64

```