DSA Group Assignment

Section :A

Description

This is our DSA group project. A Namibian music start-up is looking for an efficient music player algorithm for a mobile application .We were tasked to come up with an algorithm, in the algorithm we implemented the following modules:

a)**Play module** -in this module users can play the playlist in a sequential order from first to last.

b) **Play in Reverse module** – in this module users can play the playlist from last song to the first song.

c)**Skip module** – in this module users can skip to the next or previous song.

d**)Repeat module** – Users should be able to repeat the module as many times.

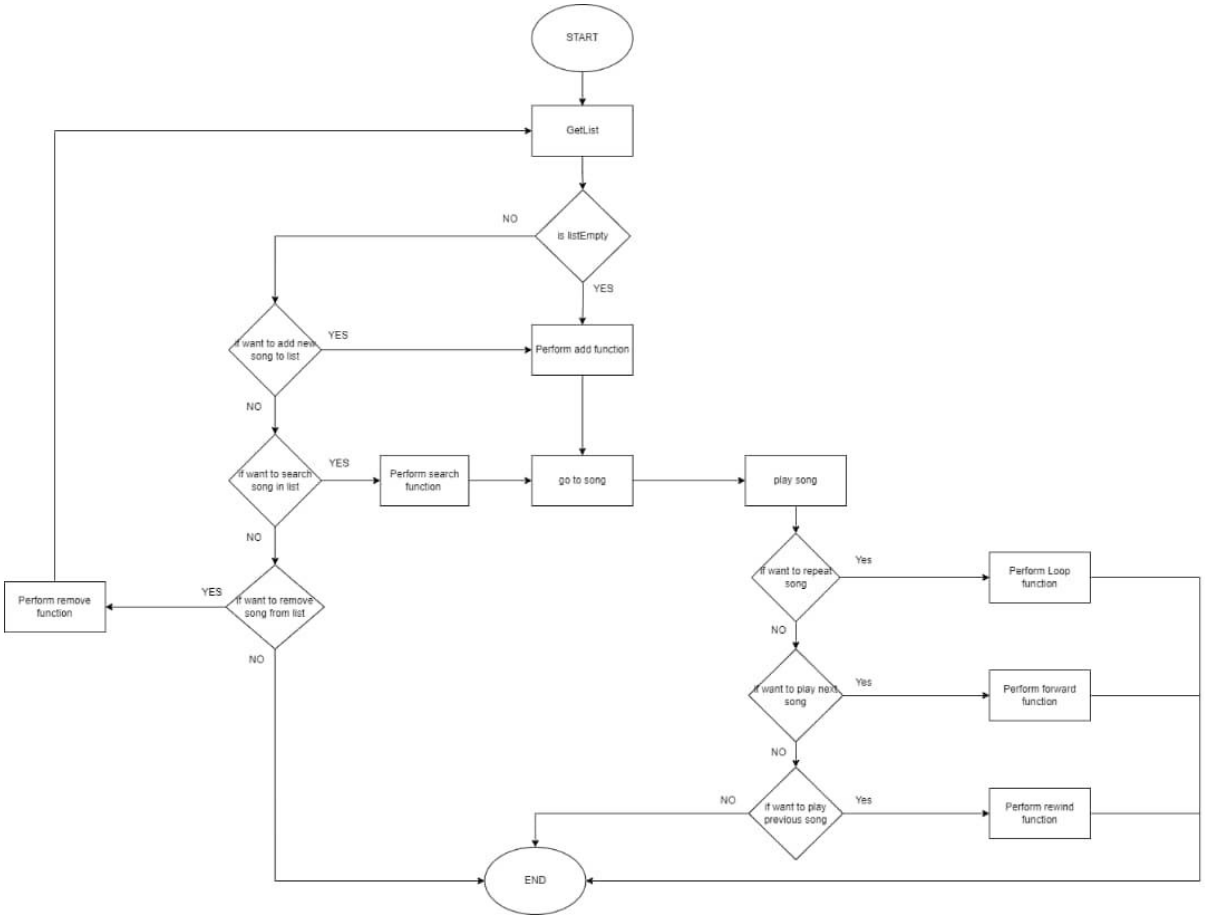
e**)Add and Remove module**- user can add and remove tracks from playlist as they wish. Using our linear search algorithm users can also search for a specific song within the playlist.

Modules

Module	Description
Play	The user should be able to play the playlist in sequential order from the first song to the last.

Play In Reverse	The user should be able to play the playlist in reverse from the last song to the first.
Skip	Users should be able to skip to the next song or to the previous .
Repeat	The user should be able to repeat the playlist as many times as they wish.
Add	The user should be able to add new songs to the playlist.
Delete	The user should be able to remove songs from the p

Flow Chart



Pseudo Code

```
START
  Prompt user for choice
  Get Choice
  If(Choice==”Play”) then
    Prompt for playChoice
    Get playChoice
    If(playChoice==”Forward”) then
     songPlay(g)
    Else
     If(playChoice==”Reverse”)then
       songReversePlay()
     Else End
     Endif
Else
 If(Choice==Repeat) then
   While(End !=Stop)
    Repeat()
    Display ”Enter Stop to End ”
Else
 If( Choice== Add and Remove) then
    Display ”Would you like to add a song or”
    Display “Would you like to remove a song”
```

```
    Get Selection
      If( Select == Add) then
        Display ”How many songs would you like to add”
        Get option
        Add()
      Else
      If( Select== Remove) then
       Display “How many songs would you like to remove”
       Remove()
      Endif
   Endif
Else
If( Choice==Search) then
Count=0
  Search()
  songPlay()
Endif
End

songPlay(){
for i=0 to arraySize
 Display Song[Count]
Count=count+1
}
```

```
songReservePlay(){
for i=arraySize to 0
  Display Song[arraySize]
arraySize=arraySize-1
}

Repeat(){
Count=0
For i=0 to arraySize
   Display Song[count]
    Count=count+1
}

Add(){
oldArraySize=arraySize
arraySize=arraysize+Addition
for i=0 to i<Addition
  Songs[oldArraySize+1]=newSong
}

Delete(){
oldArraySize=arraySize
arraSize=arraySize-Subtraction
```

```
for i=0 to i<Subtraction
Songs[oldArraySize-1]=0
}

Search(){
count=0
While count < arraySize do
if searchItem == Song[count] then
found = true
end if
end do

if found == true then
print "the item was found"
else
print  "the item was not found"
end if
}
```

Group Members and Roles

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