Assignment - 11

Aim: Sort the books according to genre, name, author, release date

Objective: Students will be able to understand bubble sort and many other sort which can be used to run this program.

Outcome

Students will be able to sort according to name, author, release date using bubble sort, merge sort, quick sort etc.

Pseudocode

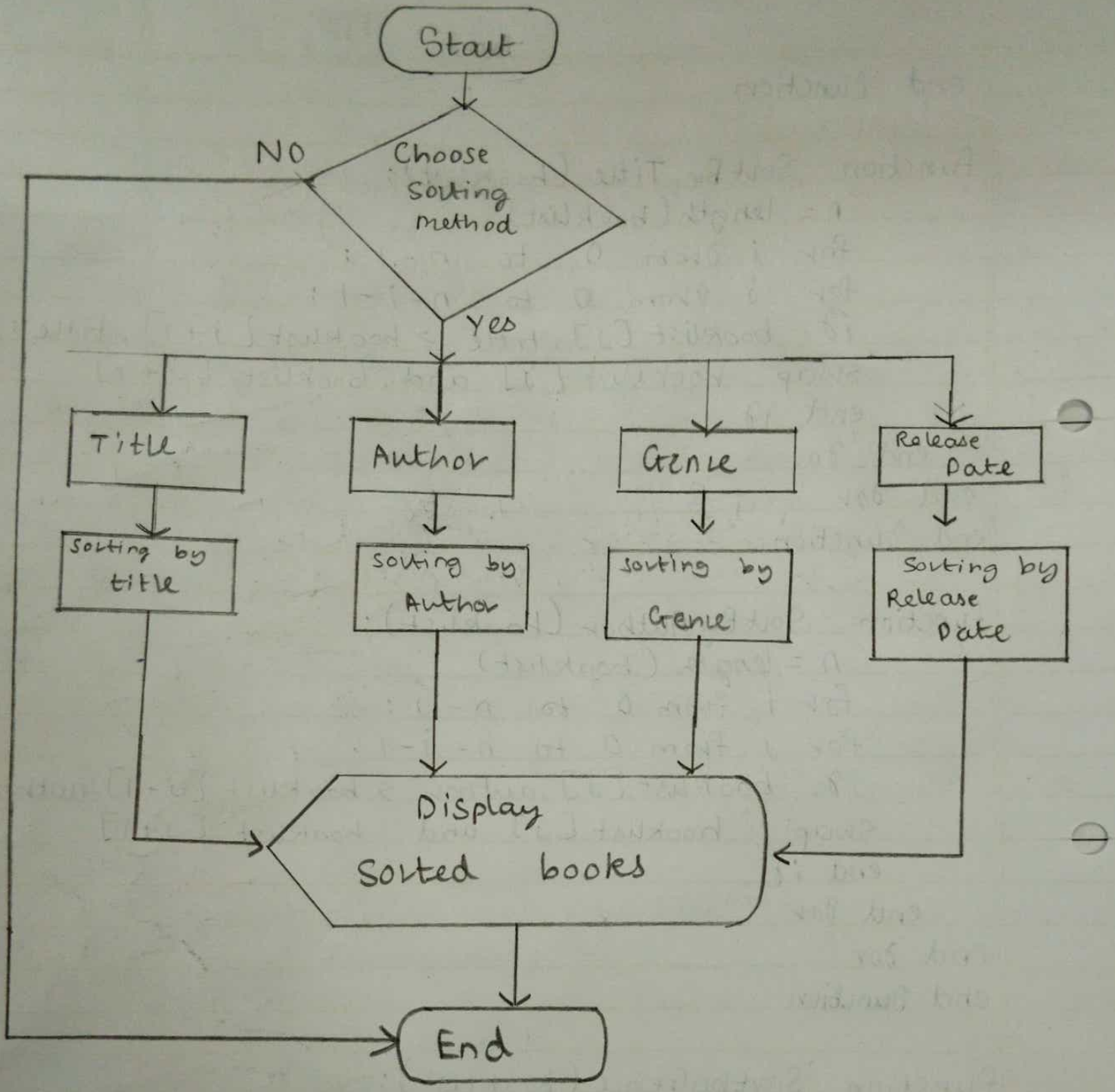
- Start
- function SortingCriterion == "Title":
  SortBy title (booklist)
  else if SortingCriterion == "Author":
  Sort By Author (booklist)
  else if SortingCriterion == "Genre":
  Sort By Genre (booklist)
  else if SortingCriterion == "Release Date":
  Sort By Release Date (booklist)
  else DisplayError Message ("Invalid sorting Criterion
  end if

```
end function

function SortByTitle(booklist):
    n = length(booklist)
    for i from 0 to n-1:
    for j from 0 to n-i-1:
    if booklist[j].title > booklist[j+1].title:
    swap booklist[j] and booklist[j+1]
    end if
  end for
end for
end function

function SortByAuthor(booklist):
    n = length(booklist)
    for i from 0 to n-1:
    for j from 0 to n-i-1:
    if booklist[j].author > booklist[j+1].author:
    swap booklist[j] and booklist[j+1]
    end if
  end for
end for
end function

function SortbyGenre(booklist):
  n= length(booklist)
  for i from 0 to n-1:
  for j from 0 to n-i-1:
  if booklist[j].genre > booklist[j+1].genre:
  swap booklist[j] and booklist[j+1]
```


Start
NO
Choose Sorting Method
Yes
Title
Author
Genre
Release Date
Sorting by title
Sorting by Author
Sorting by Genre
Sorting by Release Date
Display Sorted books
End

```
        end if
    end for
end for
end function

function SortbyReleaseDate(booklist):
    n = length(booklist)
  for i from 0 to n-1:
  for j from 0 to n-i-1:
   if booklist[j].release_date > booklist[j+1].
   release_date:
   swap bookslist[j] and booklist[j+1]
   end if
    end for
end for
end function
```

Algorithm

Step 1 ⇒ Begin

Step 2 ⇒ Initiate criterions as "Title", "Author", "Gen
"Release date"

Step 3 ⇒ Input no of names serially in the 2D string

Step 4 ⇒ for (i=0 ; i<n ; i++)
for(j = i+1 ; j<n ; j++)
# compare str[i] and str[j] by using strcmp() function
we can also use booklist[j] > booklist[j+1]
Swap booklist[j] and [j+1]

Step 5 ⇒ If we needed then switch by using str cpy ( ) function as
Str cpy (s, str[i])
Str cpy (str[i], str[j])
Str cpy (str[j], s)

Step 6 ⇒ Print the sorted string
Step 7 ⇒ Repeat from Step 2 for each category
Step 8 ⇒ Stop

We can use different types of sorts like bubble sort, merge sort, quick sort etc.

Test cases

[Before Sorting]

1) Genre	Author	book name
5	5	5
Crime	William	The Great River
War	Agatha	The Adventure
Spy	Barbara	The lord of water
adventure	Danielle	To kill
mystry	Chetan	Vlesev

[After Sorting]

Adventure	Agatha	The Adventure
Crime	Barbara	The great river
mystry	Chetan	The lord of water
Spy	Danielle	To kill
War	William	Vlesev

Conclusion

The program sorts the data accordingly to genre, author, bookname, etc accurately