ระบบจัดการ Playlist เพลง (ใช้ Linked List)

จัดทำโดย

นายวรดร พรมอนันต์
รหัส 67543206020-9
SEC 1

เสนอ
อาจารย์นุรักษ์ ไชยศรี

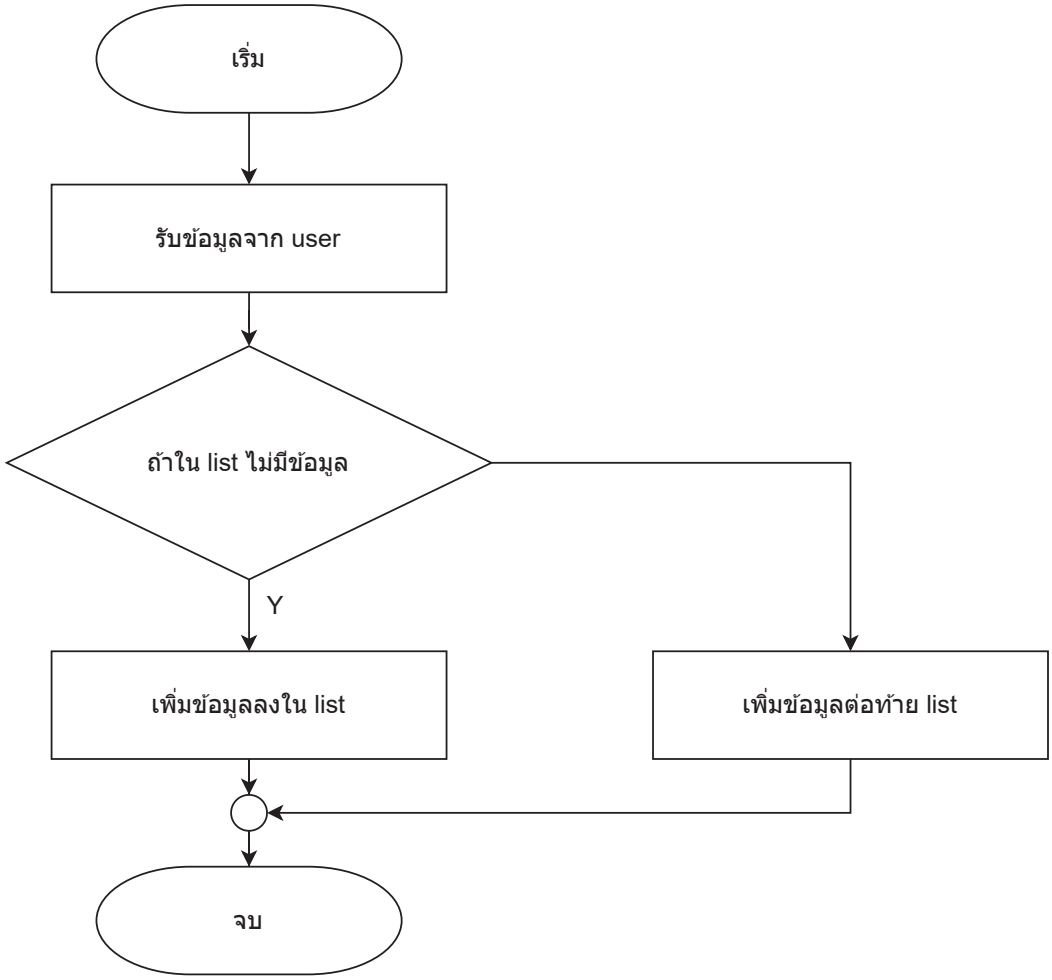
ใบงานนี้เป็นส่วนหนึ่งของวิชา

ENGCE124

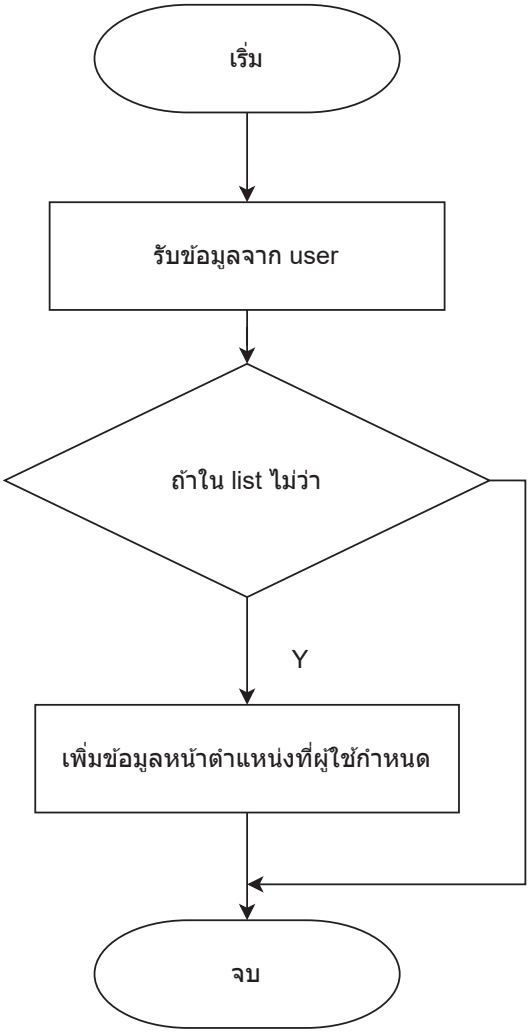
โครงสร้างข้อมูลและขั้นตอนวิธี
(Data Structures and Algorithms)
หลักสูตรวิศวกรรมศาสตร์บัณฑิต
สาขาวิชาวิศวกรรมไฟฟ้า (วิศวกรรมคอมพิวเตอร์)
คณะ วิศวกรรมศาสตร์
มหาวิทยาลัยเทคโนโลยีราชมงคลล้านนา เชียงใหม่
ภาคเรียนที่ 1 ปีการศึกษา 2568

Flowchat :

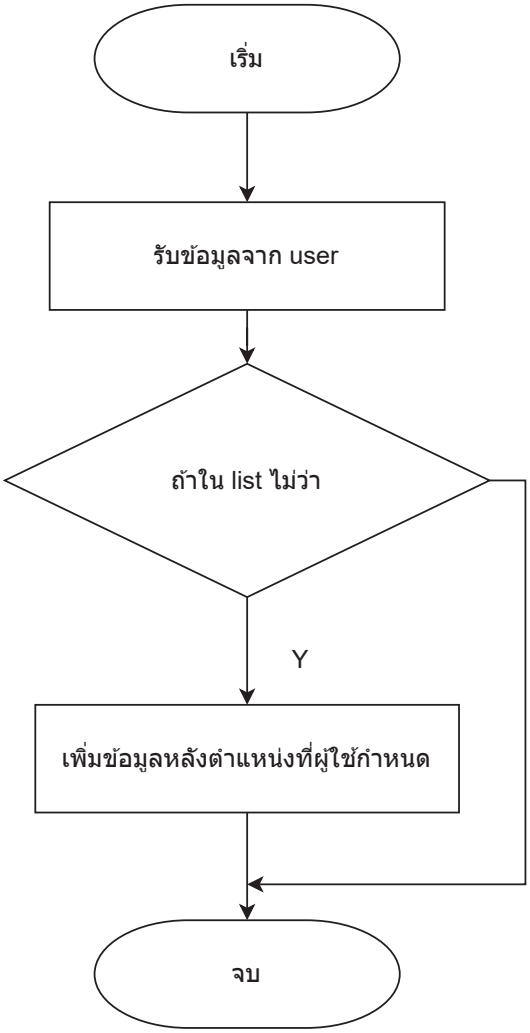
- **เพิ่มข้อมูลลงท้ายรายการ**



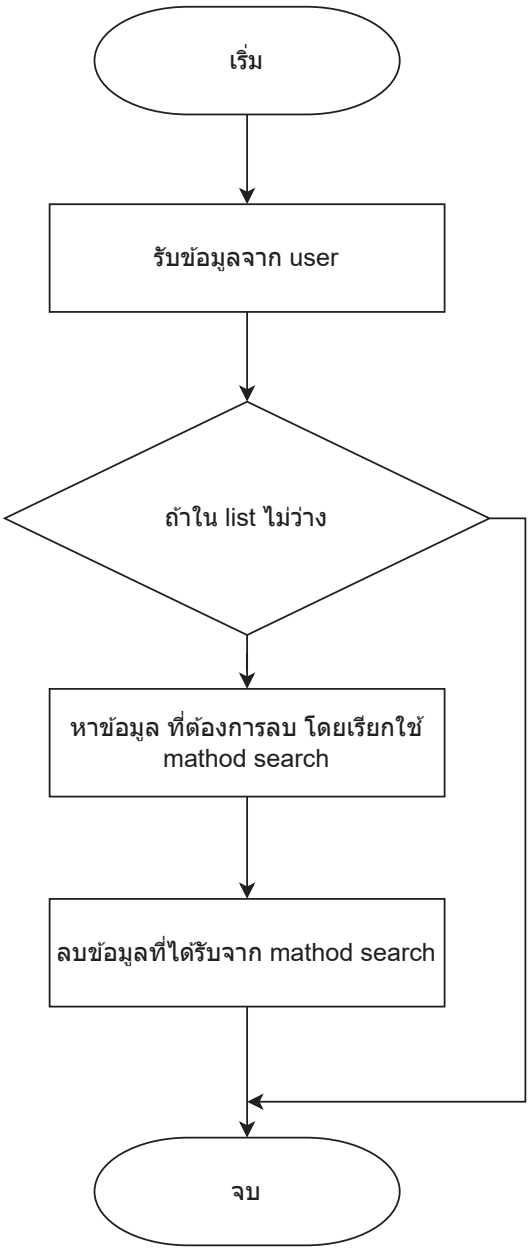
- แทรกข้อมูลหน้า ข้อมูลที่กำหนด



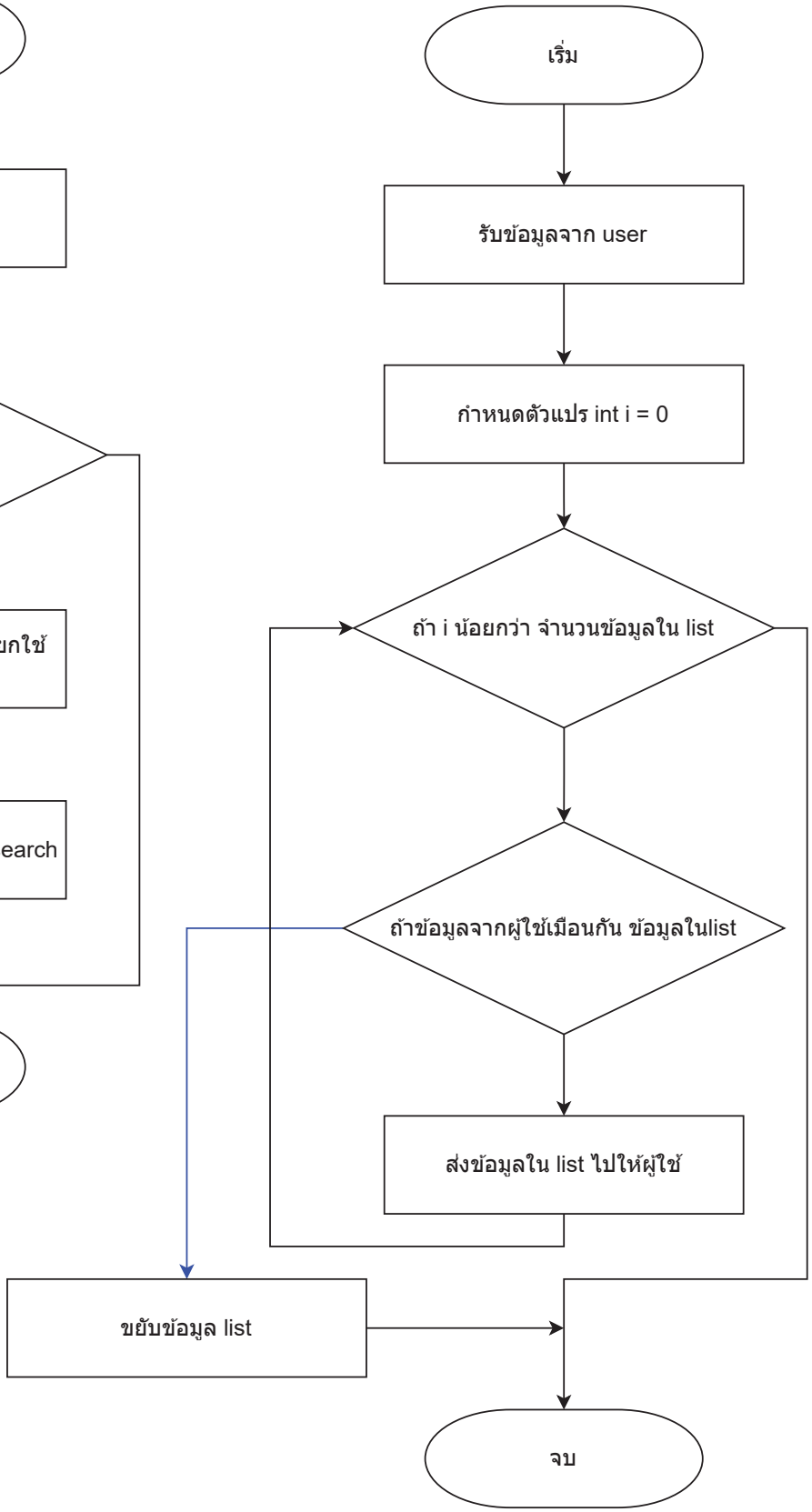
- แทรกข้อมูลหลัง ข้อมูลที่กำหนด



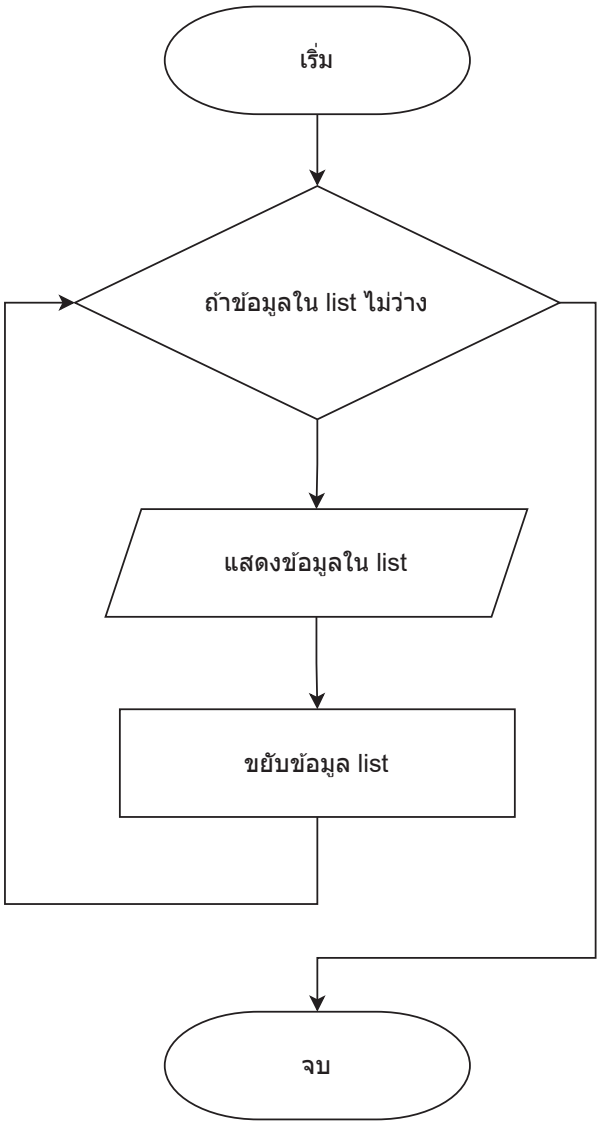
- ลบข้อมูลตามตำแหน่งที่กำหนด



- หาข้อมูล



- **แสดงข้อมูลทั้งหมดตามลำดับ**



Main :

```
public class Class_main {
public static void main(String[] args) {
SelectMode mode = new SelectMode() ;
mode.select() ;
}//end main
}//end class
```

Dnode :

```
public class DNode {
information info ;
DNode Llink,Rlink ;
}
```

Information :

```
public class information {
String name ;
String artist ;
String album ;
String length ;
public information( String name_music, String artist_name, String
album_name, String length_song ) {
name = name_music ;
artist = artist_name ;
album = album_name ;
length = length_song ;
}
}
```

Doubly linkedlist :

```
public class DLL {
DNode head, tail, chack;
int count = 0;
void add(information item) {
DNode newnode = new DNode();
newnode.info = item;
if (count == 0) {
head = newnode;
tail = newnode;
count++;
} else {
tail.Rlink = newnode;
newnode.Llink = tail;
tail = newnode;
count++;
} // end if
System.out.println( "Add succeed");
}// end add
void front_ins(information item, String ref) {
DNode pos = SearchData(ref);
DNode newnode = new DNode();
newnode.info = item;
if (pos != null) {
if (ref.equals(head.info.name)) {
newnode.Rlink = head;
head.Llink = newnode;
```

```
head = newnode;
count++;
} else {
newnode.Rlink = pos;
newnode.Llink = pos.Llink;
pos.Llink = newnode;
newnode.Llink.Rlink = newnode;
count++;
} // end if
System.out.println("insert succeed");
} else {
System.out.println("insert Failed") ;
return ;
} // end if
}// end mathod
void behind_ins(information item, String ref) {
DNode pos = SearchData(ref);
DNode newnode = new DNode();
newnode.info = item;
if (pos != null) {
if (ref.equals(tail.info.name)) {
/* behind head */
tail.Rlink = newnode;
newnode.Llink = tail;
tail = newnode;
count++;
} else {
```

```
newnode.Rlink = pos.Rlink;
newnode.Llink = pos;
pos.Rlink.Llink = newnode;
pos.Rlink = newnode;
count++;
} // end if
System.out.println("insert succeed");
} // end if
}// end mathod
void remove(String pos) {
// ลบหัว
DNode ref = SearchData(pos);
if (ref == null) {
System.out.println("Don't have data ! ");
return;
}
if (pos.equals(head.info.name)) {
// ลบหัว
if (count > 1) {
head = ref.Rlink;
head.Llink = null;
count--;
} else if (count == 1) {
head = null;
tail = null;
count--;
```

```
} // end if
} else if (pos.equals(tail.info.name)) {
// ลบท้าย
tail = ref.Llink;
tail.Rlink = null;
count--;
} else {
ref.Llink.Rlink = ref.Rlink;
ref.Rlink.Llink = ref.Llink;
ref.Rlink = null;
ref.Llink = null;
count--;
} // end if
System.out.println("Remove succeed");
}// end mathod
void show() {
chack = head;
int number = 0;
if (chack == null) {
System.out.println("Node don't have data");
return;
} // end if
System.out.println();
while (chack != null) {
number++;
System.out.println(number + ". Music name : " + chack.info.name);
```

```
chack = chack.Rlink;
} // end loop
System.out.println();
}// end mathod
void showAll() {
chack = head;
int number = 0;
if (chack == null) {
System.out.println("Node don't have data");
return;
} // end if
System.out.println();
while (chack != null) {
number++;
System.out.println(
number + ". " +
"Name: " + chack.info.name + " | " +
"Artist: " + chack.info.artist + " | " +
"Album: " + chack.info.album + " | " +
"Length: " + chack.info.length
) ;
chack = chack.Rlink;
} // end loop
System.out.println();
}// end mathod
DNode SearchData(String ref) {
DNode node;
```

```
node = head;
if (node == null) {
return null;
} // end if
for (int i = 0; i < count; i++) {
if (ref.equals(node.info.name)) {
return node;
}
node = node.Rlink;
} // end for
return null;
} // end mathod

}// end class
```

SelectMode :

```
import java.util.Scanner;
public class SelectMode {
void select() {
DLL D = new DLL() ;
Scanner data = new Scanner(System.in) ;
String name = "" ;
String artist = "" ;
String album = "" ;
String length = "" ;
boolean end_pg = true ;
String mode ;
System.out.println();
while(end_pg){
System.out.println(
"\n1 : Add Music to Playlist\n" +
"2 : Insert Music Before Selected Song\n" +
"3 : Insert Music After Selected Song\n" +
"4 : Remove Music\n" +
"5 : Show Playlist\n" +
"6 : Exit Program\n"
);
System.out.println();
System.out.println("Select Mode: " ) ;
mode = data.nextLine().trim() ;
```

```
if( mode.equals( "1" ) ) {
System.out.print("What name song will u add ? : ") ;
name = data.nextLine().trim() ;
System.out.print("What artist name ? : ") ;
artist = data.nextLine().trim() ;
System.out.print("What album name ? : ") ;
album = data.nextLine().trim() ;
System.out.print("How long is this song ? : ") ;
length = data.nextLine().trim() ;
information info = new information(name, artist, album,
length ) ;
D.add(info) ;
} else if( mode.equals( "2" ) ){
System.out.print("What name song will u add ? : ") ;
name = data.nextLine().trim() ;
System.out.print("What artist name ? : ") ;
artist = data.nextLine().trim() ;
System.out.print("What album name ? : ") ;
album = data.nextLine().trim() ;
System.out.print("How long is this song ? : ") ;
length = data.nextLine().trim() ;
information info = new information(name, artist, album,
length ) ;
String pos ;
D.show() ;
System.out.print("Insert song where ? : ") ;
```

```
pos = data.nextLine().trim() ;
D.front_ins( info, pos ) ;
} else if( mode.equals( "3" ) ){
System.out.print("What name song will u add ? : ") ;
name = data.nextLine().trim() ;
System.out.print("What artist name ? : ") ;
artist = data.nextLine().trim() ;
System.out.print("What album name ? : ") ;
album = data.nextLine().trim() ;
System.out.print("How long is this song ? : ") ;
length = data.nextLine().trim() ;
information info = new information(name, artist, album,
length ) ;
String pos ;
D.show() ;
System.out.print("Insert song where ? : ") ;
pos = data.nextLine().trim() ;
D.behind_ins( info, pos ) ;
} else if( mode.equals( "4" ) ){
String pos ;
D.show( ) ;
System.out.print( "What music would you like to remove ? :
") ;
pos = data.nextLine( ).trim() ;
D.remove(pos) ;
D.show( ) ;
```

```
} else if( mode.equals("5") ){
D.showAll() ;
} else if( mode.equals("6") ) {
end_pg = false ;
data.close() ;
} //end if
}//end while
}
}
```