1. *Take a list, say for example this one:*

```
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
```

and write a program that prints out all the elements of the list that are less than 5.

SOLUTION

```
void main() {
List a;
 a=[1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89];
 List answer=[];
 int checkValue;
 for(int count=0;count<a.length;count++){
  checkValue= a[count];
 if(checkValue<5)
 { answer.add(checkValue);}
 }
   print(answer);
 }
```

2. *Take two lists, for example:*

```
a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]

 b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]
```

and write a program that returns a list that contains only the elements that are common between them (without duplicates). Make sure your program works on two lists of different sizes.

SOLUTION

```
void main(){
 List a;
 a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89];
List b;
 b = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13];
 List combined=a;

 for(int i=0;i<b.length;i++){
  combined.add(b[i]);
```

```
  }

  Set combinedSet=combined.toSet();
  combined=combinedSet.toList();

  print(combined);
}
```

3. *Write a program to check if a string is a palindrome or not.*

A palindrome is a string that reads the same forwards and backwards. Eg mum

SOLUTION

```
void main(){

String readForward;
String readBackward;
  bool isPalindrome=false;


 String reverseText(String someText){
  StringBuffer buildReversedText=new StringBuffer();
  for(int i=0;i<someText.length-1;i--){
    buildReversedText.write(someText[i]);
  }
   readBackward=buildReversedText.toString();
  return readBackward;

}
  //check if is palindrome
  readForward="someText";
  if(readForward==reverseText(readForward)){
    isPalindrome=true;
    print(isPalindrome);
  }
```

}

4. Write a program that takes a list of numbers for example

```
a = [5, 10, 15, 20, 25]
```

and makes a new list of only the first and last elements of the given list. For practice, write this code inside a function.

5. *Write a program (using functions!) that asks the user for a long string containing multiple words. Print back to the user the same string, except with the words in backwards order.*

For example, say I type the string:

```
My name is Michele
```

Then I would see the string:

```
Michele is name My
```

`6.` *Write a program (function) that takes a list and returns a new list that contains all the elements of the first list minus all the duplicates.*

7. *In this exercise, load that JSON file below,*

a, Extract the months of all the birthdays.

B, count how many birthdays in each month.

C, write a program to show the month with the heights and lowest birthday.

```
{
    "May": 3,
    "May": 5,
    "November": 2,
    "December": 1,
    "December": 4,
    "December": 2,
}
```