KATHMANDU UNIVERSITY
DHULIKHEL, KAVRE
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Lab Report: 1

Subject: COMP 202

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Level: 2nd Year/ 3rd Sem

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Output of the program:

The program starts with the running of the shell script batch file compile.bat file. The file has necessary scripts to compile and run the program. The major file structure contains of three folders- include, src and build. The include folder contains the necessary header(.h) files and the src folder contains the necessary source(.cpp) files. The build folder is made during the compilation process by the batch file and it stores the executable file of the program after compilation. The program also consists of a .gitignore file to make sure the build is not added and committed to the version control system.

```
PS D:\Programming\C++\DSALabSheet> ./compile.bat

D:\Programming\C++\DSALabSheet>(cd build and cd .. )  || mkdir build
The system cannot find the path specified.
A subdirectory or file build already exists.

D:\Programming\C++\DSALabSheet>g++ .\lab1\src\main.cpp .\lab1\src\linkedList.cpp -I .\lab1\include -o build\a.exe

D:\Programming\C++\DSALabSheet>.\build\a.exe
The list is Empty
The latest linked list is:
 Data 1is:  4.
 Data 2is:  5.

The latest linked list is:
 Data 1is:  5.

The latest linked list is:
 Data 1is:  16.
 Data 2is:  8.
 Data 3is:  5.

The latest linked list is:
 Data 1is:  16.
 Data 2is:  8.
 Data 3is:  19.
 Data 4is:  5.

The data is found is in the list.
```

Once the compile.bat file is run, the terminal makes a call to compile the source code and header files- main.cpp, linkedList.cpp and linkedList.h. The program gets called through the main function of main.cpp file where different sets of operation takes place. Firstly, it checks if the list is empty and prints “The list is empty.” On the output section. Then a data 4 is added to head of the linked list and 5 is added to tail of linked list. After that the linked list is traversed which finally print the list having two data. Then, another operation removeFromHead() is carried out which removes the head node i.e. the node having data 4 and the list is traversed again to verify that the data is removed. Again, three elements are added from head- 4,8 and 16, making 16 the head of the linked list. Then, the data 4 is removed using the method remove(data) and the list is traversed again to verify the removal. Then, the method retrieve(data) is called that returns the pointer of the node that consists the data. Using the pointer thus, received a new element was added calling the add(data, node) method that adds the element 19 after the element 8 in our list. Once again, the list is traversed to verify the addition. The using the search(data) method we search if the element 19 is on the list and print that the data is found in the list. In this way, different operations of the linked list have been carried out in the program.