Q1. Write a c++ code, to demonstrate the forward list.

#include <iostream>

#include <iterator>

#include <forward\_list>

using namespace std;

int main()

{

forward\_list <int> f;

int e = 0;

cout<<"Enter 5 elements in forward list = "<<endl;

for(int i = 0; i < 5; i++)

{

cout<<i<<") = ";

cin>>e;

f.push\_front(e);

}

cout<<"Display forward list"<<endl;

forward\_list <int> ::iterator it;

it = f.begin();

for(int i = 0; i < 5; i++, it++)

{

cout<<i<<") "<<\*it<<endl;

}

cout<<endl<<"Pop element from forward list"<<endl;

for(it = f.begin(); it != f.end(); it = f.begin())

{

cout<<\*it<<" ";

f.pop\_front();

}

}

Q2. Write a c++ code, in which create a forward list and assign values to it at the time of

initialization and print it on the console screen.

#include <iostream>

#include <forward\_list>

using namespace std;

int main()

{

forward\_list <int> f ={10, 20, 30, 40, 50};

for(auto it = f.begin(); it != f.end(); it++)

{

cout<<\*it<<" ";

}

}

Q3. Create a forward list insert elements from 1 to 10 and find the sum of elements.

#include <iostream>

#include <forward\_list>

#include <iterator>

using namespace std;

int main()

{

forward\_list <int> f = {10, 9, 8, 7, 6, 5, 4, 3, 2, 1};

f.sort();

int sum = 0;

forward\_list <int>::iterator it = f.begin();

while( it != f.end())

{

sum = sum + (\*it);

it++;

}

cout<<"sum = "<<sum;

}

Q4. Write a program to reverse forward list elements.

#include <iostream>

#include <forward\_list>

using namespace std;

int main()

{

forward\_list <int> f ={10, 20, 30, 40, 50};

f.reverse();

for(auto it = f.begin(); it != f.end(); it++)

{

cout<<\*it<<" ";

}

}

Q5. Write a program remove all consecutive duplicate elements from the forward list.

#include <iostream>

#include <forward\_list>

using namespace std;

int main()

{

forward\_list <int> f;

f.assign({10,20,30,20,40,40,20,50});

cout<<"Before removing duplicate elements"<<endl<<endl;

for(auto it: f)

{

cout<<it<<" ";

}

cout<<endl<<endl<<"After removing duplicate elements"<<endl<<endl;

f.remove(20);

f.remove(40);

for(auto it: f)

{

cout<<it<<" ";

}

}

Q6. Create two forward lists of int type, and merge them.

#include <iostream>

#include <forward\_list>

using namespace std;

int main()

{

forward\_list <int> f1 = {10, 20, 30, 40, 50};

forward\_list <int> f2 = {60, 70, 80, 90, 100};

f1.merge(f2);

for(int x: f1)

{

cout<<x<<" ";

}

}

Q7. Below are two forward lists, first sort them and then merge them.

forwardlist1={3,2,9}

forwardlist2={8,1,2}

#include <iostream>

#include <forward\_list>

using namespace std;

int main()

{

forward\_list <int> forwardlist1 = {3, 2, 9};

forward\_list <int> forwardlist2 = {8,1,2};

forwardlist1.sort();

forwardlist2.sort();

forwardlist2.merge(forwardlist1);

for(int x: forwardlist2)

{

cout<<x<<" ";

}

}

Q8. Create two forward lists of int type, and swap the elements of both forward lists with

each other.

#include <iostream>

#include <forward\_list>

#include <iterator>

using namespace std;

int main()

{

forward\_list <int> f1 = {1, 2, 3};

forward\_list <int> f2 = {10, 20, 30};

cout<<"Before swapiing"<<endl<<endl;

cout<<"f1 = ";

for(forward\_list <int>::iterator x = f1.begin(); x != f1.end(); x++)

{

cout<<\*x<<" ";

}

cout<<endl<<"f2 = ";

for(auto x : f2)

{

cout<<x<<" ";

}

cout<<endl<<endl<<"After swapping"<<endl;

f1.swap(f2);

cout<<endl<<"f1 = ";

for(auto x : f1)

{

cout<<x<<" ";

}

cout<<endl<<"f2 = ";

for(auto x : f2)

{

cout<<x<<" ";

}

}

Q9. Write a C++ code to demonstrate working of splice\_after() in forward list.

#include <iostream>

#include <forward\_list>

#include <iterator>

using namespace std;

int main()

{

forward\_list <int> f1 = {10, 20, 30, 40, 50};

forward\_list <int> f2 = {1, 2, 3};

f1.splice\_after(f1.before\_begin(), f2);

for(int x : f1)cout<<x<<" ";

}

Q10. Write a program to assign values in forward\_list using the values of another list

#include <iostream>

#include <forward\_list>

#include <iterator>

using namespace std;

int main()

{

forward\_list <int> f1 = {1, 2, 3};

forward\_list <int> f2;

f2.assign(f1.begin(), f2.end());

for(int x : f2) cout<<x<<" ";

}