Assignment 39

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

#include<bits/stdc++.h>

using namespace std;

int main()

{

    forward\_list<int> list\_01;

    list\_01.push\_front(10);

    list\_01.push\_front(20);

    list\_01.push\_front(30);

    list\_01.push\_front(40);

    forward\_list<int> :: iterator it;

    for(it= list\_01.begin(); it!= list\_01.end(); it++)

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem\_01.cpp -o problem\_01 } ; if ($?) { .\problem\_01 }

40 30 20 10

PS C:\Users\tusha\Documents\coadind\assignment39>

2. 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<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> L)

{

    forward\_list<int> :: iterator it;

    for(it= L.begin(); it!= L.end(); it++)

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> list\_01;

    forward\_list<int> list\_02;

    forward\_list<int> list\_03;

    list\_01.push\_front(10);

    list\_01.push\_front(20);

    list\_01.push\_front(30);

    list\_01.push\_front(40);

    list\_02.assign({2,3,4,5,6});

    list\_03.assign(5,100);

    display(list\_01);

    display(list\_02);

    display(list\_03);

    cout<<endl;

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem\_01.cpp -o problem\_01 } ; if ($?) { .\problem\_01 }

40 30 20 10

2 3 4 5 6

100 100 100 100 100

PS C:\Users\tusha\Documents\coadind\assignment39>

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

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> L)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> list\_01;

    cout<<"\n enter the 10 numbers : "<<endl;

    for(int i=0; i<10; i++)

    {

        int x;

        cin>>x;

        list\_01.push\_front(x);

    }

    display(list\_01);

    int sum= accumulate(list\_01.begin(), list\_01.end(), 0);

    cout<<"\n the sum of the entered element is : "<<sum<<endl;

    return 0;

}

OUTPUT:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ PROBLEM\_02.CPP -o PROBLEM\_02 } ; if ($?) { .\PROBLEM\_02 }

enter the 10 numbers :

1 2 3 4 5 6 7 8 9 10

10 9 8 7 6 5 4 3 2 1

the sum of the entered element is : 55

PS C:\Users\tusha\Documents\coadind\assignment39>

4. Write a program to reverse forward list elements.

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> L)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> f\_list;

    f\_list.assign({2,6,8,9,4,7});

    display(f\_list);

    f\_list.reverse();

    display(f\_list);

    return 0;

}

Output:

> cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem\_03.cpp -o problem\_03 } ; if ($?) { .\problem\_03 }

2 6 8 9 4 7

7 4 9 8 6 2

PS C:\Users\tusha\Documents\coadind\assignment39>

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

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> L)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> f\_list;

    f\_list.assign({2,6,6,9,9,4,4});

    display(f\_list);

    f\_list.reverse();

    display(f\_list);

    cout<<"\n elenent after the using unique function "<<endl;

    f\_list.unique();

    display(f\_list);

    return 0;

}

Ouput:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem\_03.cpp -o problem\_03 } ; if ($?) { .\problem\_03 }

2 6 6 9 9 4 4

4 4 9 9 6 6 2

elenent after the using unique function

4 9 6 2

PS C:\Users\tusha\Documents\coadind\assignment39>

;;;;;;;;;;;;;;;;;

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

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> f\_list)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> list\_01;

    forward\_list<int> list\_02;

    list\_01.assign({1,2,3,4,5});

    list\_02.assign({6,7,8,9,10});

    cout<<"\nelement of the first list :   "<<endl;

    display(list\_01);

    cout<<"\nelement of the second list :   "<<endl;

    display(list\_02);

    list\_01.merge(list\_02);

    cout<<"\nelement of the  list after merging :   "<<endl;

    display(list\_01);

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem04.cpp -o problem04 } ; if ($?) { .\problem04 }

element of the first list :

1 2 3 4 5

element of the second list :

6 7 8 9 10

element of the list after merging :

1 2 3 4 5 6 7 8 9 10

PS C:\Users\tusha\Documents\coadind\assignment39>

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

forwardlist1={3,2,9}

forwardlist2={8,1,2}

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> f\_list)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> list\_01;

    forward\_list<int> list\_02;

    list\_01.assign({3,2,9});

    list\_02.assign({8,1,2});

    cout<<"\nelement of the first list :   "<<endl;

    display(list\_01);

    cout<<"\nelement of the second list :   "<<endl;

    display(list\_02);

    list\_01.sort();

    list\_02.sort();

    list\_01.merge(list\_02);

    cout<<"\nelement of the  list after merging :   "<<endl;

    display(list\_01);

    return 0;

}

output:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem04.cpp -o problem04 } ; if ($?) { .\problem04 }

element of the first list :

3 2 9

element of the second list :

8 1 2

element of the list after merging :

1 2 2 3 8 9

PS C:\Users\tusha\Documents\coadind\assignment39>

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

each other.

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> f\_list)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> list\_01;

    forward\_list<int> list\_02;

    list\_01.assign({1,2,3});

    list\_02.assign({4,5,6});

    cout<<"element of the first list :   "<<endl;

    display(list\_01);

    cout<<"element of the second list :   "<<endl;

    display(list\_02);

    cout<<"\n---------------"<<endl;

    list\_01.swap(list\_02);

    cout<<"\nelement of the first list :   "<<endl;

    display(list\_01);

    cout<<"\nelement of the second list :   "<<endl;

    display(list\_02);

    return 0;

}

Output;

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem04.cpp -o problem04 } ; if ($?) { .\problem04 }

element of the first list :

1 2 3

element of the second list :

4 5 6

---------------

element of the first list :

4 5 6

element of the second list :

1 2 3

PS C:\Users\tusha\Documents\coadind\assignment39>

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

#include<bits/stdc++.h>

using namespace std;

void display(forward\_list<int> f\_list)

{

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

    {

        cout<<\*it<<" ";

    }

    cout<<endl;

}

int main()

{

    forward\_list<int> list\_01;

    forward\_list<int> list\_02;

    list\_01.assign({1,2,3,4});

    list\_02.assign({8,10});

    cout<<"element of the first list :   "<<endl;

    display(list\_01);

    cout<<"element of the second list :   "<<endl;

    display(list\_02);

    cout<<"\n---------------"<<endl;

    list\_02.splice\_after(list\_02.begin(),list\_01,list\_01.before\_begin(),list\_01.end());

    cout<<"\nelement of the first list :   "<<endl;

    display(list\_01);

    cout<<"\nelement of the second list :   "<<endl;

    display(list\_02);

    return 0;

}

Output:

cd "c:\Users\tusha\Documents\coadind\assignment39\" ; if ($?) { g++ problem04.cpp -o problem04 } ; if ($?) { .\problem04 }

element of the first list :

1 2 3

element of the second list :

4 5 6

---------------

element of the first list :

4 5 6

element of the second list :

1 2 3

PS C:\Users\tusha\Documents\coadind\assignment39> cd "c:\Users\tusha\Documents\coadind\assignment35.cpp\" ; if ($?) { g++ problem05.cpp -o problem05 } ; if ($?) { .\problem05 }

element of the first list :

1 2 3 4

element of the second list :

8 10

---------------

element of the first list :

element of the second list :

8 1 2 3 4 10

PS C:\Users\tusha\Documents\coadind\assignment35.cpp>