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B.Tech – CSE(BDA)

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Q.1. Calculate the fare for the passengers traveling in a bus. When a Passenger enters in the bus, the conductor asks “What distance will you travel?” On knowing distance from the passenger (as an approximate integer), the conductor mentions the fare to the passenger according to following criteria.

Distance (in KMS) Fare (Per KM)
0-20 Rs.1
21-40 Rs.2
41-60 Rs.3
61-80 Rs.4
81-100 Rs.5
101 and above Rs.6
[Note: Perform this program using namespace].

Code:-

```
#include <iostream>

using namespace std;

namespace Bus_fare
{
    int distance = 0;
    int fare = 0;

    int data_input()
    {
        cout << "What distance will you travel?\n";
        cin >> distance;

        if (distance >=0 && distance <= 20)
        {
            fare = distance * 1;

            cout << "\n" << "Your total fare is:" << "\t"<< fare;
        }
        else if (distance >=21 && distance <= 40)
        {
            fare = distance * 2;
```

```
            cout << "\n" << "Your total fare is:" << "\t"<< fare;
        }
        else if (distance >=41 && distance <= 60)
        {
            fare = distance * 3;

            cout << "\n" << "Your total fare is:" << "\t"<< fare;
        }
        else if (distance >=61 && distance <= 80)
        {
            fare = distance * 4;

            cout << "\n" << "Your total fare is:" << "\t"<< fare;
        }
        else if (distance >=81 && distance <= 100)
        {
            fare = distance * 5;

            cout << "\n" << "Your total fare is:" << "\t"<< fare;
        }
        else if (distance >=101)
        {
            fare = distance * 6;

            cout << "\n" <<"Your total fare is:" << "\t"<< fare;
        }

    }
}; // namespace Bus_fare;


int main()
{
    Bus_fare :: data_input();
}
```

Output-

```
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II> cd "c:\Users\dwij
d\OneDrive\Documents\collage practicals\ESFP-II\Practical_5\" ; if ($?) { g++ Prac
tical_5_Q-1.C -o Practical_5_Q-1 } ; if ($?) { .\Practical_5_Q-1 }
What distance will you travel?
23

Your total fare is:     46
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II\Practical_5>
```

Q.2. Preform the following program using namespace.
1. Get a number from the user (upto 5 digit).
2. Check whether the number is palindrome or not.

3. Check whether the number is Armstrong number or not.
4. Display output for each operation performed with appropriate text.

Code:-

```
#include <iostream>

using namespace std;

namespace number
{
    int user_input = 0;
    int fare = 0;
    int n,digit,rev = 0;
    int originalNum, remainder, result = 0;

    int data_input()
    {

        cout << "Enter any 5 digit integer\n";
        cin >> user_input;
    }

    int palindrome()
    {

        data_input();

            n=user_input;

        do
        {
            digit = user_input % 10;
            rev = (rev * 10)+ digit;
            user_input = user_input / 10;

        } while(user_input != 0);

        cout << "The reverse of the number is: " << rev << endl;

        if (n == rev)
            cout << "The number is a palindrome.\n\n";
        else
        {
            cout << "The number is not a palindrome.\n\n";
        }

    }
```

```
    int Armstrong()
    {
        data_input();

        originalNum = user_input;

        while (originalNum != 0)
        {
        // remainder contains the last digit
        remainder = originalNum % 10;

        result += remainder * remainder * remainder;

        // removing last digit from the orignal number
        originalNum /= 10;
        }

        if (result == user_input)
        {
            cout << user_input << " is an Armstrong number.\n\n";
        }
        else
        {
            cout << user_input << " is not an Armstrong number.\n\n";
        }

    }
};

int main()
{
    using std::cout;
    using std::cin;
    int opition;

    for(;;)
    {
        cout<<"Enter <1> for Palindrome\nEnter <2> for Armstrong\nEnter <3> to
exit\n";
        cin>>opition;

        switch (opition)
        {
            case 1:
                number :: palindrome();
            break;

            case 2:
```

```
                number :: Armstrong();
            break;

            case 3:
                return 1;
            break;

            default:
                cout<<"Enter right number\n";
            break;
        }
    }
    return 0;

}
```

Output-

```
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II> cd "c:\Users\dwijd\OneDrive\Documents\c
ollage practicals\ESFP-II\Practical_5\" ; if ($?) { g++ Practical_5-Q-2.C -o Practical_5-Q-2 } ; if ($?)
 { .\Practical_5-Q-2 }
Enter <1> for Palindrome
Enter <2> for Armstrong
Enter <3> to exit
1
Enter any 5 digit integer
12321
The reverse of the number is: 12321
The number is a palindrome.

Enter <1> for Palindrome
Enter <2> for Armstrong
Enter <3> to exit
2
Enter any 5 digit integer
374
374 is not an Armstrong number.

Enter <1> for Palindrome
Enter <2> for Armstrong
Enter <3> to exit
3
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II\Practical_5>
```

Q.3. Find out the error of the following program, correct it, and then write output of the program with justification.

1.)

```
#include<iostream>
using namespace std;
namespace A {
int a,b,c;
void sum() {
cout<<"Enter two number:";
cin>>a>>b;
c=a+b;
cout<<"Sum of two number:"<<c;
}
}
```

int main() {
A.sum();
return 0;

Code:-

```cpp
#include<iostream>
using namespace std;

namespace A
{
    int a,b,c;
    void sum()
    {
        cout<<"Enter two number:";
        cin>>a>>b;
        c=a+b;
        cout<<"Sum of two number:"<<c;
    }
}
int main()
{
    // wrong:- A.sum();
    A :: sum();
    return 0;
}
```

Output-

```
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II> cd "c:\Users\dwijd\OneDrive\Documents\c
ollage practicals\ESFP-II\Practical_5\" ; if ($?) { g++ Practical_5_Q-3.C -o Practical_5_Q-3 } ; if ($?)
 { .\Practical_5_Q-3 }
Enter two number:4 6
Sum of two number:10
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II\Practical_5>
```

2.)

#include<iostream>
int main() {
using std::int;
using std::string;
using std::cout;
using std::endl;
string uname="Ganpat University";
string caddress="City Office: Ahmedabad";
cout<<collegeId<<endl;
cout<<uname<<endl;
cout<<caddress<<endl;
return 0;
}

Code:-

```cpp
#include<iostream>
int main()
{
    //wrong:- using std::int;
    using std::string;
    using std::cout;
    using std::endl;
    string uname="Ganpat University";
    string caddress="City Office: Ahmedabad";
    //wrong:- cout<<collegeId<<endl;
    cout<<uname<<endl;
    cout<<caddress<<endl;
    return 0;
}
```

Output-

```
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II> cd "c:\Users\dwijd\OneDrive\Documents\c
ollage practicals\ESFP-II\Practical_5\" ; if ($?) { g++ Practical_5_Q-3.C -o Practical_5_Q-3 } ; if ($?)
 { .\Practical_5_Q-3 }
Ganpat University
City Office: Ahmedabad
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II\Practical_5>
```