Home Work No.3

PF (FALL-2022)

Content:

1) Type conversion codes
2) Overflow/underflow Examples

Run and understand following codes

……1.cpp……

```
#include <iostream>

using namespace std;


int main()
{
	cout << 5 + 'A'<<endl;
	cout << 5 + 'a' << endl;
	cout << 5 + 2.5 << endl;
	cout << 5 + int(2.5) << endl;
	cout << 10 / 3 << endl;
	cout << 10 / static_cast<float>(3);

}
```

Modify code 1.cpp for different type conversion combinations.

…… 2.cpp ……

```
#include <iostream>

using namespace std;


int main()
{
	short x = -32768;

	cout << "\ninitial Value of x is :: "<<x;

	x = x - 1;
```

```
	cout << "\nAfter Decrementing Value of x is :: " << x; //After decrementing underflow occurred as -32768 is min value of short

	x = -32770; //Assigning new value what will happen now? Now you can check it by printing its value

//write here printing code



}
```

…… 3.cpp ……

```
#include <iostream>
#include<cstdlib>
#include<time.h>
#include<fstream>

using namespace std;


int main()
{
	short x = 32767;

	cout << "\ninitial Value of x is :: "<<x;

	x = x + 1;

	cout << "\nAfter Incrementing Value of x is :: " << x;//After incrementing overflowflow occurred as 32767 is max value of short

	x = 32769; //Assigning new value what will happen now? Now you can check it by printing its value

	//write here printing code




}
```

Modify code 2.cpp and 3.cpp for to check underflow and overflow in int and long datatypes of integers.

What is output of following codes?

```
#include <iostream>

using namespace std;


int main()
{
	int sum = 50;
	sum = 100;
	int a = 10, b;
	//cout<<"sum";
	cout << sum << endl;
	cin >> sum; //Suppose user enters 200
	cout << a << 'a' << "a";
	b = a + 5;
	cout << endl << sizeof(5) << '\t' << sizeof(5.5);
	cout << b << "\t";
	cout << b * 10;
	cout << sizeof(sum + a + b) << endl;
	cout << sum;

}
```

……4.cpp……

```
#include <iostream>

using namespace std;


int main()

{

	short var1=5;  //Variable to store first input

	short var2 = 2;

	cout<<var1++<<"  "<<++var1<<"  "<<var1++ <<"   "<<++var1<<endl;

	cout<<"\n\nProgram Ends Here\n";


return 0;

}
```

……5.cpp…….

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

int main()
{
	short var1=5;  //Variable to store first input
	short var2 = 2;
	cout<<++var1 * var2--<<endl;
	cout<<++var1 * var2++<<endl;

	cout<<"\n\nProgram Ends Here\n";

return 0;
}
```

……6.cpp…….

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

int main()
{
	short var1=25;  //Variable to store first input

	cout<<"\nHexa Decimal = "<<hex<<var1;
	cout<<"\nOctal = "<<oct<<var1;



	cout<<"\n\nProgram Ends Here\n";

return 0;
}
```

……7.cpp…….

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

int main()
{

	short var1=025;  //Variable to store first input

	cout<<"\nHexa Decimal = "<<hex<<var1;
	cout<<"\nDecimal  = "<<var1;

	cout<<"\n\nProgram Ends Here\n";

return 0;
}
```

……8.cpp…….

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

int main()
{

	short var1=0b10001011011;  //Variable to store first input

	cout<<"\nHexa Decimal = "<<hex<<var1;
	cout<<"\nOctal        = "<<oct<<var1;
	cout<<"\nDecimal      = "<<var1;

	cout<<"\n\nProgram Ends Here\n";
```

```
return 0;
}
```