Assignment 14

Laboratory 9
Dynamic Memory management & Exception Handling

Example 1)

```cpp
#include<iostream>
using namespace std;
class Base{};
class D:public Base{};
int main(){
    D OD1;
    try{      throw OD1;    }
    catch(Base B){       cout<<"Base class exception"<<endl;    }
    catch (D d){       cout<<"Derived class exception"<<endl;    }
}
```

```
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/examples$ ./1
Base class exception
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/examples$
```

Program 3

```cpp
#include<iostream>
using namespace std;
int main(){
    char ch;    cout<<"Enter the input ";    cin>>ch;
    try{
        if((ch>='A'&&ch<='Z')||(ch>='a'&&ch<='z')||(ch>='0'&&ch<='9'))
        cout<<" Input matched with data type\n";
        else
        throw(ch);
    }
    catch(char ch){cout<<"\n Input is mismatched with data type"<<endl;}
}
```

```
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/questions$ g++ 3.cpp -o 1
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/questions$ ./1
Enter the input w
 Input matched with data type
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/questions$
```

Program 4

```cpp
#include <iostream>
using namespace std;
void fun(int data) throw(int, char)
```

```
{    if (data == 0)    {        throw data;    }
    else    {
        if (data == 1)
            throw 'a';
        else if (data == 2)
        cout<<"\n Input is double";
    }}
int main(void){
    try{        fun(0);    }
    catch(int i){        cout<<"\n Caught an integer\n";    }
    catch(char c){        cout<<"\n Caught char";    }
}
```

shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/questions$ ./1

Caught an integer
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory9/questions$ █

Program 6

```
#include<iostream>
using namespace std;
class student{    protected:    int id,marks;
    public:    student (){        id=0;        marks=0;    }
    student (int id,int marks){ this->id=id; this->marks=marks;    }
    void show(int i){
        cout<<"\n Id of the student "<<i+1<<" is "<<id;
        cout<<"\n Marks of the student "<<i+1<<" is "<<marks;
    }};
int main(){    student();    int size,i,data;
    cout<<"\n Enter the number of student in a class";
    cin>>size;    student stud[size];
    cout<<"\n Please enter the marks of student out of 100 one by
one...";
    for(i=0;i<size;i++){
        cout<<"\n Enter the marks of student "<<i+1<<endl;
        cin>>data;        stud[i]=student(i+1,data);
    }
    for(i=0;i<size;i++){        stud[i].show(i);    }  }
```

```
 Enter the number of student in a class 2

 Please enter the marks of student out of 100 one by one...
 Enter the marks of student 1  89

 Enter the marks of student 2  98
 Id of the student 1 is 1
 Marks of the student 1 is 89
 Id of the student 2 is 2
 Marks of the student 2 is 98
```