**Assignment No:** 5

**Problem Statement:** Create User defined exception to check the following conditions and throw the exception if the criterion does not meet.

1. User stays in Pune/Mumbai/Bangalore/Chennai
2. User has 4-wheeler

City, Vehicle from the user and check for the conditions

mentioned above. If any of the condition not met then throw the exception.If user does not enter proper input throw the exception.

**Aim of Assignment:** To implement exception handling concept in C++ to throw and catch the above mentioned exceptions.

**Description:** Two class one for each exception is defined named InvalidCityException and InvalidVehicleException. In main(), the city and the vehicle are accepted. These values are checked in try block and exception is thrown in case of error. These exceptions are then, catched by the respective catch block and action is taken as per that catch routine.

**OOP Concept used:**

**Exception handling:**

An exception is a problem that arises during the execution of a program. A C++ exception is a response to an exceptional circumstance that arises while a program is running, such as an attempt to divide by zero.

Exceptions provide a way to transfer control from one part of a program to another. C++ exception handling is built upon three keywords: try, catch, and throw.

throw − A program throws an exception when a problem shows up. This is done using a throw keyword.

catch − A program catches an exception with an exception handler at the place in a program where you want to handle the problem. The catch keyword indicates the catching of an exception.

try − A try block identifies a block of code for which particular exceptions will be activated. It's followed by one or more catch blocks.

**Conclusion:** The exception handling in C++ is implemented successfully.

**Program:**

#include<iostream>

#include<string>

using namespace std;

class test

{

private:

string city,city1;

int veh\_type;

public:

void city\_name()

{

cout<<"ENTER THE NAME OF CITY"<<'\n';

cin>>city;

try

{

if ( (city=="PUNE") || (city=="Pune") || (city=="pune") || (city=="BANGLORE") || (city=="Banglore") || (city=="banglore") || (city=="MUMBAI") || ( city=="Mumbai" )|| (city== "mumbai" ) || (city== "CHENNAI" ) || (city== "Chennai" ) || (city== "chennai" ) )

{

}

else

{

throw 1;

}

}

catch(int x)

{

switch(x)

{

case 1:cout<<"ENTERED CITY IS INVALID, PLEASE ENTER THE VALID CITY"<<'\n';

city\_name();

}

}

}

void veh()

{

cout<<"ENTER THE VEHICLE TYPE"<<'\n';

cin>>veh\_type;

try

{

if(veh\_type!=4)

{

throw 2;

}

}

catch(int x)

{

switch(x)

{

case 2:cout<<"ENTERED TYPE OF VEHICLE IS INVALID, PLEASE ENTER THE TYPE AGAIN"<<'\n';

veh();

}

}

}

void display()

{

cout<<"ENTERED CITY IS "<<city<<" AND TYPE OF VEHICLE IS "<<veh\_type;

}

};

int main()

{

test e;

e.city\_name();

e.veh();

e.display();

}

