```
#include "FlightCtrl.h"
#include<iostream>
#include<vector>
#include<string>
#include <cstdlib>
FlightCtr::FlightCtr()
{
}
FlightCtr::~FlightCtr()
{
}
//function which fills vector with all 5 P,I,D configurations from user
float FlightCtr::fillvector(vector<PID_ctrl>&mypids){
for(int i=0;i<5;++i){
        float m_P;
        float m_I;
        float m_D;
        float m_dT;
        string name;
        cout<<"Enter  P,I,D and name value for all 5 states as given in the sketch according to the order "<<
endl;
    cout<<endl;
    cout<<"enter p value"<<endl;
    cin>>m_P;
    cout<<"enter I value"<<endl;
    cin>>m_I;
    cout<<"enter D value"<<endl;
    cin>>m_D;
    cout<<"enter name"<<endl;
    cin>>name;

    PID_ctrl newpid_ctrl (m_P,m_I,m_D,m_dT,name);
    mypids.push_back(newpid_ctrl);
    cout<<endl;
}
}
//Iterator function which gets the corresponding value of P,I,D

float FlightCtr::printvector( vector<PID_ctrl>&mypids,int& i,float error){
cout<<"value of P,I and D of the chosen state is"<<endl;
cout<<"value of p:"<<mypids[i].calc_ctrl_P( error)<<endl;
cout<<"value of I"<<mypids[i].calc_ctrl_I(error)<<endl;
cout<<"value of D"<<mypids[i].calc_ctrl_D(error)<<endl;

}
//function that calculates corresponding PID(u) value
float FlightCtr::sumvector(vector<PID_ctrl>&mypids,int& i,float error){
cout<<"pid of the chosen state is "<<mypids[i].calc_ctrl_P(error)+mypids[i].calc_ctrl_I( error)+mypids[i].
calc_ctrl_D( error);
}
//function to get transition in steps
float FlightCtr::waitvector( float trtime, float dtime){
float i=0;
cout<<"before transition to new state it takes total of following steps "<<endl;
while(i!=dtime/trtime)
{
    i++;
cout<<i<<endl;
}
}
```