Λύσεις 6ου Εργαστηρίου

Ερώτηση 1

```
#include <iostream>
#include <string>
#include <vector>

using namespace std;

class Measurement
{
public:
	float temp;
	string date;

	Measurement(float _temp, string _date): temp(_temp), date(_date) { }
	Measurement(): temp(0), date("N/A") { }

	void print()
	{
		cout << "Date: " << date << ", temperature: " << temp << endl;
	}

};

class Patient
{
	string name;
	int birthyear;
	string address;
	string clinic;
	string room;
	string tel;
	vector<Measurement> pm;

public:
	Patient(string _name, int _birthyear, string _address, string _clinic,
string _room, string _tel)
	{
		name = _name;
		birthyear = _birthyear;
		address = _address;
		clinic = _clinic;
		room = _room;
		tel = _tel;
	}

	Patient()
	{
		name = "N/A";
		birthyear = 0;
		address = "N/A";
		clinic = "N/A";
		room = "N/A";
		tel = "N/A";
	}
```

```
Patient(const Patient& copy)
{
	name = copy.name;
	birthyear = copy.birthyear;
	address = copy.address;
	clinic = copy.clinic;
	room = copy.room;
	tel = copy.tel;
	pm = copy.pm;
}

void setName(string _name)
{
	name = _name;
}

void setBirthyear(int _birthyear)
{
	birthyear = _birthyear;
}

void setAddress(string _address)
{
	address = _address;
}

void setClinic(string _clinic)
{
	clinic = _clinic;
}

void setRoom(string _room)
{
	room = _room;
}

void setTel(string _tel)
{
	tel = _tel;
}

void insertMeasurement(Measurement m)
{
	pm.push_back(m);
}

void insertMeasurement(float _temp, string _date)
{
	Measurement m(_temp, _date);
	pm.push_back(m);
}

float maxTemp()
{
	float maxt = 0.0;
	for(int j=0; j<pm.size(); j++)
	{
		if(pm[j].temp > maxt)
			maxt = pm[j].temp;
	}
```

```
            return maxt;
      }

      void display()
      {
            cout << "Patient info: " << endl;
            cout << "Name: " << name << endl;
            cout << "Birth year: " << birthyear << endl;
            cout << "Address: " << address << endl;
            cout << "Clinic: " << clinic << endl;
            cout << "Room: " << room << endl;
            cout << "Tel: " << tel << endl;
            cout << "Measurements: " << endl;

            for(int j=0; j<pm.size(); j++)         //display all elements
                  pm[j].print();

      }

      int getPatientAge(int current_year)
      {
            //We can make the calculation and return the result in one line
            return current_year - birthyear;
      }

};

int main()
{
      Patient p("John Doe", 1970, "Ermou 5", "A' pathologiki", "303",
"2106677888");

      Measurement mm(37.5, "3/3/2016 12:33");
      p.insertMeasurement(mm);

      p.insertMeasurement(38.9, "3/3/2016 16:39");

      p.display();

      cout << "max temp: "<< p.maxTemp() << endl;
      system("pause");
}
```

Ερώτηση 2

```
#include <iostream>
#include <string>
#include <vector>

using namespace std;

class Measurement
{
public:
      float temp;
      string date;
```

```
	Measurement(float _temp, string _date): temp(_temp), date(_date) { }
	Measurement(): temp(0), date("N/A") { }

	void print()
	{
		cout << "Date: " << date << ", temperature: " << temp << endl;
	}

};

class Doctor
{
	string name;
	string specialty;
	string tel;

public:
	Doctor(string _name, string _specialty, string _tel)
	{
		name = _name;
		specialty = _specialty;
		tel = _tel;
	}

	void display()
	{
		cout << "*****Doctor info: ******" << endl;
		cout << "Name: " << name << endl;
		cout << "Specialty: " << specialty << endl;
		cout << "Telephone: " << tel << endl << endl;

	}
};

class Patient
{
	string name;
	int birthyear;
	string address;
	string clinic;
	string room;
	string tel;
	vector<Measurement> pm;
	Doctor *doctor;

public:
	Patient(string _name, int _birthyear, string _address, string _clinic,
string _room, string _tel, Doctor* doc)
	{
		name = _name;
		birthyear = _birthyear;
		address = _address;
		clinic = _clinic;
		room = _room;
		tel = _tel;

		doctor = doc;
	}

	Patient()
	{
```

```
	name = "N/A";
	birthyear = 0;
	address = "N/A";
	clinic = "N/A";
	room = "N/A";
	tel = "N/A";

	doctor = NULL;
}

Patient(const Patient& copy)
{
	name = copy.name;
	birthyear = copy.birthyear;
	address = copy.address;
	clinic = copy.clinic;
	room = copy.room;
	tel = copy.tel;
	pm = copy.pm;

	doctor = copy.doctor;
}

void setName(string _name)
{
	name = _name;
}

void setBirthyear(int _birthyear)
{
	birthyear = _birthyear;
}

void setAddress(string _address)
{
	address = _address;
}

void setClinic(string _clinic)
{
	clinic = _clinic;
}

void setRoom(string _room)
{
	room = _room;
}

void setTel(string _tel)
{
	tel = _tel;
}

void insertMeasurement(Measurement m)
{
	pm.push_back(m);
}

void insertMeasurement(float _temp, string _date)
{
	Measurement m(_temp, _date);
```

```
            pm.push_back(m);
      }

      float maxTemp()
      {
            float maxt = 0.0;
            for(int j=0; j<pm.size(); j++)
            {
                  if(pm[j].temp > maxt)
                        maxt = pm[j].temp;
            }

            return maxt;
      }

      void setDoctor(Doctor* doc)
      {
            doctor = doc;
      }

      void display()
      {
            cout << "-----Patient info: ------" << endl;
            cout << "Name: " << name << endl;
            cout << "Birth year: " << birthyear << endl;
            cout << "Address: " << address << endl;
            cout << "Clinic: " << clinic << endl;
            cout << "Room: " << room << endl;
            cout << "Tel: " << tel << endl;
            cout << "Measurements: " << endl;

            for(int j=0; j<pm.size(); j++)         //display all elements
                  pm[j].print();

            if(doctor != NULL)
                  doctor->display();
            else
                  cout << "No doctor! " << endl;

      }

      int getPatientAge(int current_year)
      {
            //We can make the calculation and return the result in one line
            return current_year - birthyear;
      }

};

int main()
{
      Doctor d("Henry Jones", "Cardiologist", "6977554332");
      Patient p1("John Doe", 1970, "Ermou 5", "A' pathologiki", "303",
"2106677888", &d);

      Patient p2("Bruce Lee", 1956, "10 Main st.", "B' Kardiologiki", "306",
"323232323", NULL);

      p2.setDoctor(&d);

      p1.display();
```

```
	p2.display();

	system("pause");
}
```