#include<iostream>

#include<string.h>

using namespace std;

class sensing

{

public:

double age,bp,sg,al,su,pc,pcc,bgr,bu,sc,sod,pot,hemo,pcv,wc,rc,htn,dm,ckd;

char appet[10],cad[10],pe[10],ane[10],ba[20],rbc[10];

void datainput()

{

cout<<"---AI reading and predicting occurence of CKD--- "<<"\n";

cout<<"age"<<"\n";

cin>>age;

cout<<"blood pressure normal is 140"<<"\n";cin>>bp;

cout<<"specific gravity normally greater than 1.010"<<"\t";cin>>sg;

cout<<"albumin normall 4"<<"\n" ;cin>>al;

cout<<"sugar normal 4"<<"\n" ;cin>>su;

cout<<"red blood cells normal or not"<<"\n" ;cin>>rbc;

cout<<"pus cells 0 to 4"<<"\n";cin>>pc;

cout<<"pus cell clumps normal 6"<<"\n";cin>>pcc;

cout<<"bacteria present or absent "<<"\n";cin>>ba;

cout<<"blood glucose random"<<"\n";cin>>bgr;

cout<< "blood urea" <<"\n";cin>>bu;

cout<<"serum creatinine"<<"\n";cin>>sc;

cout<<"sodium"<<"\n";cin>>sod;

cout<<" potassiun" <<"\n";cin>> pot;

cout<<"haemoglobin"<<"\n";cin>>hemo;

cout<<" packed cell volume"<<"\n"; cin>>pcv;

cout<<"white blood cells count"<<"\n";cin>>wc;

cout<< "red blood cells count"<<"\n";cin >>rc;

cout<<"hyper tension not exceed 140" <<"\n";cin>>htn;

cout<< "diabetes melitus not exceed 140";cin>>dm;

cout<<"coronary artery diseases yes or no" <<"\n" ;cin>>cad;

cout<<"appetite low or high" <<"\n";cin>> appet;

cout<<"pedal edema yes or no"<<"\n";cin>> pe;

cout<<"anemia yes or no" <<"\n";cin>>ane;

}

};

class decesion1:public sensing

{

public:

int calcage=0,calc\_bp=0,calc\_sg=0,calc\_al=0,calc\_su=0,calc\_rbc=0,calc\_pc=0,calc\_pcc=0,calc\_ba=0,calc\_bgr=0,calc\_bu=0,calc\_sc=0,calc\_sod=0,calc\_pot=0,calc\_hemo=0,calc\_pcv=0,calc\_wc=0,calc\_rc=0,calc\_htn=0,calc\_dm=0,calc\_cad=0,calc\_appet=0,calc\_pe=0,calc\_ane=0;

float x;

void agee()

{

if(age>=18&&age<=44)

{calcage=calcage+1;}

else if(age>=45&&age<=54)

calcage+=2;

else if(age>=55&&age<=64)

calcage=3;

else if(age>=65&&age<=74)

calcage+=4;

else if(age>=75)

calcage+=5;

}

void bloodpressure()

{

if(bp>=120&&bp<=139)

calc\_bp+=1;

else if(bp>=140)

calc\_bp+=2;

}

void specificgravity()

{

if(sg<1.010)

calc\_sg+=2;

else if(sg>1.010)

calc\_sg+=1;

}

void albumin()

{

if(al==4)

calc\_al+=1;

else

calc\_al+=2;

}

void sugar()

{

if(su==4)

calc\_su+=1;

else

calc\_su+=2;

}

void redbloodcells()

{

if(rbc=="normal")

calc\_rbc+=1;

else if(rbc=="abnormal")

calc\_rbc+=2;

}

void puscells()

{

if(pc>=0&&pc<=4)

calc\_pc+=1;

else

calc\_pc+=2;

}

void puscellclump()

{

if ( pcc<6||pcc>6)

calc\_pcc+=2;

else

calc\_pcc+=1;

}

void bacteria()

{

if(ba=="present")

calc\_ba+=2;

else if(ba=="absent")

calc\_ba+=1;

}

void bloodglucoserandom()

{

if(bgr>=70&&bgr<=140)

calc\_bgr+=1;

else calc\_bgr+=2;

}

void bloodurea()

{

if( bu>=7&&bu<=20)

calc\_bu+=1;

else calc\_bu+=2;

}

void serumcreatinine()

{

if(sc>=0.6&&sc<= 1.3)

calc\_sc+=1;

else calc\_sc+=2;

}

void sodium()

{

if(sod>=135&&sod<=145)

calc\_sod+=1;

else calc\_sod+=2;

}

void potassium()

{

if(pot >=3.5&& pot<=5.5)

calc\_pot+=1;

else calc\_pot+=2;

}

void haemoglobin()

{

if(hemo>=9&&hemo<=12)

calc\_hemo+=1;

else calc\_hemo+=2;

}

void packedcellvolume()

{

if(pcv==0.46)

calc\_pcv+=1;

else calc\_pcv+=2;

}

void whitebloodcells()

{

if (wc>=4300 &&wc<=10800)

calc\_wc+=1;

else calc\_wc+=2;

}

void redbloodcell()

{

if( rc>=4500&& rc<=10000)

calc\_rc+=1;

else calc\_rc+=2;

}

void hypertension()

{

if( htn>=120&&htn<=139)

calc\_htn+=1;

else

calc\_htn+=2;

}

void diabetesmelitius()

{

if(dm>=120&&dm<=139)

calc\_dm+=1;

else calc\_dm+=2;

}

void coronaryarterydisease()

{

if(cad=="yes")

calc\_cad+=2;

else if(cad=="no") calc\_cad+=1;

}

void appetite()

{

if(appet=="low")

calc\_appet+=2;

else if(appet=="high")

calc\_appet+=1;

}

void pedaledema()

{

if(pe=="yes")

calc\_pe+=2;

else if( pe=="no") calc\_pe+=1;

}

void anemia()

{

if (ane=="yes")

calc\_ane+=2;

else if(ane=="no") { calc\_ane=calc\_ane+1;cout<<"calc\_ane"<<calc\_ane;}

}

void output()

{

if(dm>140&&bp>140&&sc>1.4)

{

cout<<"CKD HIGHLY PRESENT"<<"\n";

} else

{cout<<"NO CKD"<<"\n";}}

void probability()

{

x=calcage/15; /\*based on age probability\*/

if(x>0.33)

{cout<<"prevalence of ckd is higher"<<"\n";

} else if(x<=0.33)

{

cout<<"prevalence of ckd is medium and low"<<"\n";

}

}};

int main()

{

class decesion1 E;

E.datainput();

E.agee();

E.bloodpressure();

E.bloodpressure();

E.specificgravity();

E.albumin();

E.sugar();

E.redbloodcells();

E.puscells();

E.puscellclump();

E.bacteria();

E.bloodglucoserandom();

E.bloodurea();

E.serumcreatinine();

E.sodium();

E.potassium();

E.haemoglobin();

E.packedcellvolume();

E.whitebloodcells();

E.redbloodcells();

E.hypertension();

E.diabetesmelitius();

E.coronaryarterydisease();

E.appetite();

E.pedaledema();

E.anemia();

E.probability();

E.output();

return 0;

}