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#include<stdio.h>
float x[20][20];
float wo[20];
float wh[20][20];
float a[20];
float y[20];
float t[20];
float hh[20];
float ho;
float count=0;
float ac=0.25;
int flag=0;
int p;
int flag1;
int sample;
int no_input;
int no_hidden;
float threshold;

void wait_change_hidden()
{
int i,j;
        printf("\nyou have entered for hidden weight chaning\n");
        for(i=0;i<no_hidden;i++)
        {
        printf("\nweight of node(%d)\n",i+1);
        for(j=0;j<no_input;j++)
        {
        wh[i][j]=wh[i][j]-ac*(y[i]-t[i])*x[p][j];
        printf("%f  ",wh[i][j]);
        }
        }
}
void wait_change_outputlayer()
{
  int i,j;
        printf("\nyou have entered for output layer weight chaning\n");
        printf("\noutput wait:\n");
        for(i=0;i<no_hidden;i++)
        {
        wo[i]=wo[i]-ac*(y[i]-t[i])*a[i];
        printf("%f  ",wo[i]);
        }
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}

void hidden_activation()
{
int i,j;
                        for(i=0;i<no_hidden;i++)
                        {   hh[i]=0;
                        printf("\n the value of the i:%d",i);
                        for(j=0;j<no_input;j++)
                        {
                        hh[i]+=wh[i][j]*x[p][j];
                        }

                        if(hh[i]>threshold)
                        {
                        a[i]=1;
                        }
                        else
                        {
                        a[i]=0;
                        }


                        }
}

void output_activation_function()
        {

                int i;
                for(i=0;i<no_hidden;i++)
                        {
                        ho +=a[i]*wo[i];

                        }
                        if(ho>threshold)
                        {
                        y[p]=1;
                        }
                        else
                        {
                        y[p]=0;
                        }
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                        if(y[p]!=t[p])
                        {

                        printf("\n weight is changing to start now:\n");
                        count=0;
                        wait_change_hidden();
                        wait_change_outputlayer();

                        }

                        if(y[p]==t[p])
                        {

                        count++;
                        printf("\n the value of the count is now:%f",count);
                        }
        }
void activation_function()
{
        int i,j,k;
        for(k=0;k<30;k++)
                {
                for(p=0;p<sample;p++)
                {
                        ho=0;
                        printf("\nit is entred the sample loop:");
                        //hidden layer..
                        hidden_activation();

                //output layer..
                        output_activation_function();


                        if(count==sample)
                        {
                        printf("\n here it is count is equal to the samples:");
                        flag=1;
                        break;
                        }

                }
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                if(flag==1)
                {
                printf("\nweight of hidden layer:\n");
                for(i=0;i<no_hidden;i++)
                {
                        for(j=0;j<no_input;j++)
                        {
                        printf("%f ",wh[i][j]);
                        }
                }
                printf("\nweight of the output layer:\n");
                for(i=0;i<no_hidden;i++)
                {
                        printf("%f ",wo[i]);
                }
                printf(" \nfinal output is:\n");
                for(i=0;i<sample;i++)
                {
                        printf("%f ",y[i]);
                }
                break;
                }

                else
                {
                printf("\n output has not been find ");
                for(i=0;i<sample;i++)
                        printf("\nvalue of y:(%d),%f",i,y[i]);

                }

                }

}
int main()
{
int i,j;
printf("enter the number of sample of input:\n");
scanf("%d",&sample);
printf("enter the number of input in one sample :\n");
scanf("%d",&no_input);
```

```
printf("enter the number of hidden node:\n");
scanf("%d",&no_hidden);
printf("enter the threshold of activation function:\n");
scanf("%f",&threshold);
printf("enter the input samples:\n");
for(i=0;i<sample;i++)
{
for(j=0;j<no_input;j++)
{
 scanf("%f",&x[i][j]);
}
}
printf("enter the value the  all outputs:\n ");
for(i=0;i<sample;i++)
{
scanf("%f",&t[i]);
}
printf("enter the wait of hidden layer:\n");
for(i=0;i<no_hidden;i++)
{
for(j=0;j<no_input;j++)
{
 scanf("%f",&wh[i][j]);
}
}
printf("\n enter the weight of the output layer:\n");
for(i=0;i<no_hidden;i++)
{
        scanf("%f",&wo[i]);
}
activation_function();
printf("\nvalue of the count is :%f",count);
return 0;
}
```