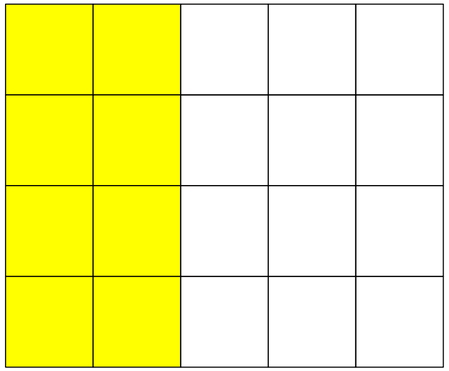
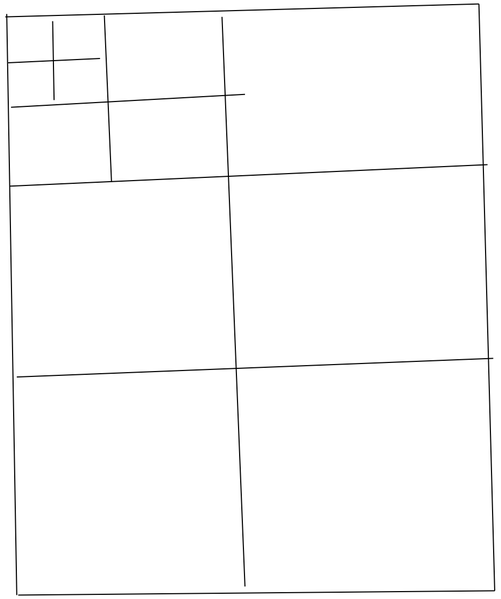
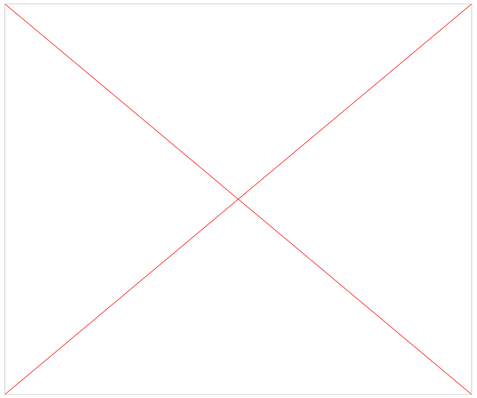
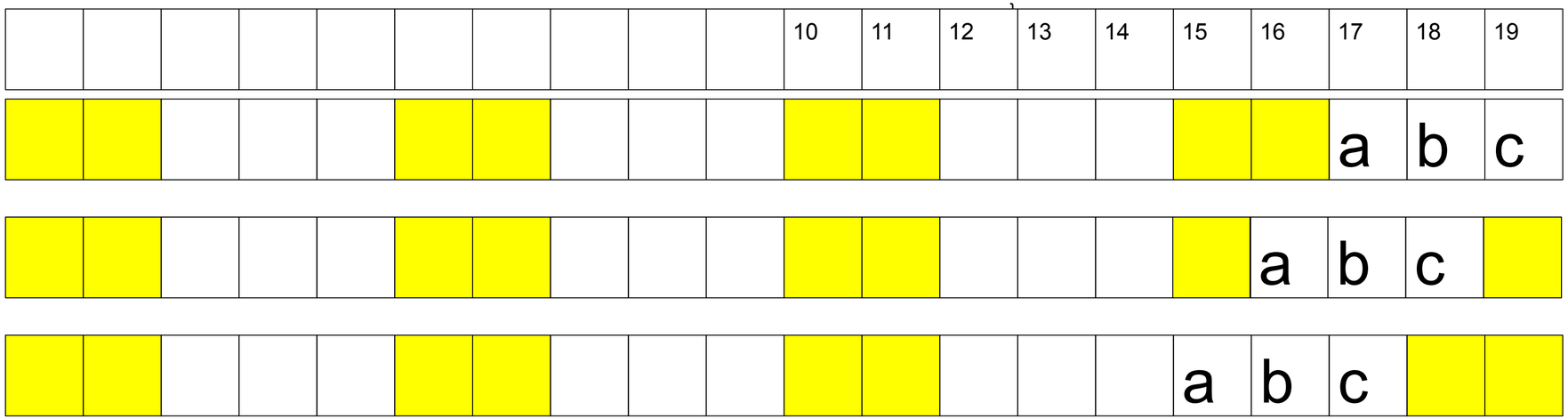
step=2
col=5
row=4





```
int** expansion_W(int **M,int **r, int &row, int &col, int step, int exp_red, int fill_val)
{
    int t;
    else if(exp_red<0 && col-step>=0)
    {
        for(int i=row;i>0;i--)
        {
            for(int u=0;u<step;u++)
            {
                for(int j=i*col-col+u;j<row*col-1;j++)
                {
                    t=(*r)[j];
                    (*r)[j]=(*r)[j+1];
                    (*r)[j+1]=t;
                }
                //print_matrix(M, row, col);
            }
        }
        (*r)=(int*)realloc((*r),((col-step)*row)*sizeof(int));
        for(int i=0;i<row;i++)
        {
            M[i]=(*r)+i*(col-step);
        }
        col=col-step;
    }
    return M;
}
```





у хэша есть ограничение по длине вводимой строки 2^128 бит