Exercise 10b - Second chance algorithm

1. **Code:**

```
#include<bits/stdc++.h>
using namespace std;
using ll=long long;
void ynans(bool x){if(x) cout<<"YES";else cout<<"NO";}
#define vi vector<int>
#define rep(i,k,n) for(ll i=k;i<n;i++)
#define rof(i,k,n) for(ll i=k;i>n;i--)
#define pb(x) push_back(x)
#define sp(x,y) fixed<<setprecision(y)<<x
int sum() { return 0; }
template<typename T, typename... Args>
T sum(T a, Args... args) { return a + sum(args...); }
#define vi vector<int>
#define vc vector<char>
#define vs vector<string>
#define vll vector<ll>
#define vvi vector < vi >
#define pll pair<ll, ll>
#define ff first
#define ss second
#define casePrint(x,y) cout<<"Case #"<<x<<": "<<y;
#define all(c) c.begin(),c.end()

int main(){
//    ll a[50][1];
   string ref_string;
   cout<<"Enter the reference string(min length 20)\n";
   cin>>ref_string;
   ll n,pgfaults=0;
   cout<<"Enter frame size\n";
   cin>>n;
   char frame[n][2];
   rep(i,0,n){

       frame[i][1]='-';
```

```
}
ll pt=0;

rep(i,0,ref_string.length()){
          ll j=pt;
          while(j!=pt+n){

          if(ref_string[i]==frame[j%n][0])
              {
                  if(frame[j%n][1]=='-'){
                      frame[j%n][0]=ref_string[i];
                      frame[j%n][1]='0';
                      pgfaults++;

                  }
                  else if (frame[j%n][1]=='0')
                  {
                      frame[j%n][1]='1';

                  }

                  break;
              }

              j++;
          }
          if(j==pt+n){
              frame[j%n][0]=ref_string[i];
              frame[j%n][1]=0;
              pgfaults++;


          }
          else
          pt=j%n;
          rep(j,0,n)
          cout<<frame[j]<<" ";


}
 cout<<pgfaults;
```

```
}
```

Output:

```
($?) { .\secondchance }\linuxpractice\20bce1161\lab10>
Enter the reference string(min length 20)
502103024303213015
Enter frame size
3
5 - -
5 0 -
5 0 2
1 0 2
1 0 2
1 0 3
1 0 3
2 0 3
2 0 4
3 0 4
3 0 4
3 0 4
3 0 2
3 1 2
3 1 2
3 1 0
3 1 0
3 1 5
page faults: 12
```

```
(($?) { .\secondchance }\linuxpractice\20bce1161\lab10>
Enter the reference string(min length 20)
502103024303213015
Enter frame size
3
5 - -
5 0 -
5 0 2
1 0 2
1 0 2
1 0 3
1 0 3
2 0 3
2 0 4
3 0 4
8 5 6 7
8 4 1 7
8 4 1 5
2 4 1 5
2 4 1 5
2 4 1 5
2 4 1 5
page fauts: 8
```