**Final Exam 2020/2021 Algorithm and Programming (COMP6047)**

**Nama : Ray Hans Sebastian Mantiri**

**NIM : 2440020114**

1. **BMI sorting Machine (25%)**

#include <stdio.h>

#include <string.h>

struct informasi

{

long long id, tbk, tbi;

char nama[1001];

};

informasi info[1001];

void sort(double tbcm[], long long n, char info.nama, long long info.id)

{

for (int i=0;i<n-1;i++)

{

for (int j=0;j<n-1-i;j++)

{

if (tbcm[j]<=tbcm[j+1])

{

int temp = tbcm[j];

tbcm[j] = tbcm[j+1];

tbcm[j+1] = temp;

strcpy(temp,info[i].nama);

strcpy(info[i].nama,info[j].nama);

strcpy(info[j].nama,temp);

int temps = info[i].id;

info[i].id = info[j].id;

info[j].id = temp;

}

}

}

}

int main ()

{

long long n, m, i, x[1001];

double tbcm[1001];

char temp[1001];

scanf ("%lld", &n);

for (i=0;i<n;i++)

{

scanf ("%lld,%[^,],%lld %lld", &info[i].id, info[i].nama, &info[i].tbk, &info[i].tbi);

tbcm[i] = (double)((info[i].tbk\*12)\*2,54) + (info[i].tbi\*2,54);

printf ("%.2lf\n", tbcm[i]);

}

scanf ("%lld", &m);

for (i=0;i<m;i++)

{

scanf ("%lld", &x[i]);

}

for (i=1;i<=m;i++)

{

printf ("Q%lld:\n", i);

for (i=1;i<=n;i++)

{

if (tbcm[i]<=x[i])

{

sort (tbcm, n, info.nama, info.id)

printf ("%lld %s %.2lf\n", info[i].id, info[i].nama, tbcm[i]);

}

else

{

printf ("-1\n");

}

}

}

return 0;

}

1. **Record Finder (20%)**

#include <stdio.h>

#include <string.h>

struct nasabah

{

char AccNum[1001], nama[1001], umur[1001], saldo[1001], x[1001];

};

int main()

{

long long n, m, i;

nasabah nsbh[1001];

scanf ("%lld", &n); getchar ();

for (i=0;i<n;i++)

{

scanf ("%[^,],%[^,],%[^,],%[^\n]\n", nsbh[i].AccNum, nsbh[i].nama, nsbh[i].umur, nsbh[i].saldo); getchar ();

}

scanf ("%lld", &m); getchar ();

for (i=0;i<m;i++)

{

scanf ("[^\n]", nsbh[i].x); getchar ();

}

for (i=0;i<m;i++)

{

if (strcmp(nsbh[i].x, nsbh[i].AccNum)==0)

{

printf ("%s %s %s\n", nsbh[i].nama, nsbh[i].umur, nsbh[i].saldo);

} else

{

printf ("-1\n");

}

}

return 0;

}

1. **Financial Aid During Pandemic (20%)**

#include <stdio.h>

#include <string.h>

struct rakyat

{

char ktgr[1001], nama[1001];

long long dana;

};

int main()

{

FILE \*fp = fopen("testdata.in", "r");

long long n, recipients=0, amount=0, i;

char ktgr2[1001];

rakyat r[1001];

fscanf (fp, "%lld\n", &n);

for (i=1;i<=n;i++)

{

fscanf (fp, "%[^,],%[^,],%lld\n", r[i].ktgr, r[i].nama, &r[i].dana);

}

fscanf (fp, "%[^\n]\n", ktgr2);

for (i=1;i<=n;i++)

{

if (strcmp(r[i].ktgr, ktgr2)==0)

{

printf ("%s %s %lld\n", r[i].ktgr, r[i].nama, r[i].dana);

recipients++;

amount += r[i].dana;

}

}

printf ("Total Recipients: %lld\n", recipients);

printf ("Total Amount: %lld\n", amount);

return 0;

}

1. **Booklet Printing (35%)**

#include <stdio.h>

int i;

int oddpage(int n[])

{

if (n[i]%2!=0)

{

return i+2;

}

}

int evenpage(int n[])

{

if (n[i]%2==0)

{

return i+1;

}

}

int main()

{

int t, n[1001];

scanf ("%d", &t);

for (i=0;i<t;i++)

{

scanf ("%d", &n[i]);

}

for (i=1;i<=t;i++)

{

printf ("Case #%d:\n", i);

printf ("Sheet %d, front: %d, %d\n", i, oddpage(n), evenpage(n));

printf ("Sheet %d, back: %d, %d\n", i, oddpage(n), evenpage(n));

}

return 0;

}