

Event.h

Type event : <

namaEvent : string
budgetKurang : integer
budgetLebih : integer
counter : integer

>

Type infotypeE : event

Type adr : pointer to elmList

Type elmList : <

Info : infotypeE
next : adr_Event

>

Type List : <

First : adr_Event
Last : adr_Event

>

createListEvent (In/Out L : ListEvent)

newEvent (data : infotype) -> adr_Event

delEvent (In/Out P : adr_Event)

isEmptyListEvent(Out : ListEvent) -> boolean

insertFirstEvent(In/Out L : ListEvent, Out P : adr_Event)

insertLastEvent(In/Out L : ListEvent, Out P : adr_Event)

inserAfterEvent(In/Out L : ListEvent, Out P : adr_Event, Out Prec : adr_Event)

deleteFirstEvent(In/Out L : ListEvent, In/Out P : adr_Event)

deleteLastEvent(In/Out L : ListEvent, In/Out P : adr_Event)

deleteAfterEvent(In/Out L : ListEvent, In/Out P : adr_Event, Out Prec : adr_Event)

cariEvent(Out : ListEvent, namaEvent : string) -> adr_Event

showEvent(In/Out L : ListEvent)

tambahEvent(In/Out L : ListEvent)

hapusEvent(In/Out L : ListEvent, namaEvent : string, In/Out P : adr_Event)

Event.cpp

Procedure createListEvent (In/Out L : ListEvent)

Kamus

Algoritma

First(L) = nil

Last(L) = nil

Endprocedure

Function newEvent (data : infotype) -> adr_Event

Kamus

P = adr_Event

Algoritma

New ElmListEvent = P

X = info(P)

Nil = next(P)

Return P

EndProcedure

Procedure delEvent (In/Out P : adr_Event)

Kamus

Algoritma

P delete

Endprocedure

Function isEmptyListEvent(Out : ListEvent) -> Boolean

Kamus

Algoritma

If first(L) = nil and last(L) = nil then

True

Else

False

Endif

EndProcedure

Procedure insertFirstEvent(In/Out L : ListEvent, Out P : adr_Event)

Kamus

Algoritma

If (isEmptyListEven(L) = true then

P = First(L)

P = Last(L)

P = Next(last(L)

Else

Next(P) = first(L)

Next(last(L) = P

First(L) = P

Endif

Endprocedure

Procedure insertLastEvent(In/Out L : ListEvent, Out P : adr_Event)

Kamus

Algoritma

If(isEmptyListEven(L) == True then

insertFirstEvent(L, P)

Else

P = next(last(L)

Next(P) = first(L)

P = last(L)

Endif

Endprocedure

Procedure insertAfterEvent(In/Out L : ListEvent, Out P : adr_Event, Out Prec : adr_Event)

Kamus

Algoritma

```
If(isEmptyListEven(L) == True then
    insertFirstEven(L, P)
else
    if(Prec == last(L) then
        insertFirstEvent(L, P)
    else if (next(Prec) == last(L) then
        insertLastEvent(L, P)
    else
        adr_Event Q
        Q = next(Prec)
        Next(Prec) = P
        Next(P) = Q
    Endif
Endif
```

Endprocedure

Procedure deleteFirstEvent(In/Out L : ListEvent, In/Out P : adr_Event)

Kamus

Algoritma

```
If(isEmptyListEven(L) == True then
    Output"Event Kosong"
Else if (first(L) == last(L) then
    First(L) = nil
    Last(L) = nil
Else
    P = First(L)
    First(L) = next(P)
    next(P) = nil
    next(last(L)) = first(L)
```

Endif

Endprocedure

Procedure deleteAfterEvent(In/Out L : ListEvent, In/Out P : adr_Event, Out Prec : adr_Event)

Kamus

Algoritma

```
    If(isEmptyListEven(L) == True then
        Output"Event Kosong"
    Else if (next(first(L) == first(L) then
        deleteFirstEvent(L, P)
    Else
        If(Prec == last(L) then
            P = next(prec)
            deleteFirstEvent(L, P)
        Else if (next(Prec) == last(L) then
            P = next(prec)
            deleteLastEvent(L, P)
        Else
            P = next(Prec)
            next(Prec) = next(P)
            next(P) = nil
```

Endif

Endprocedure

Function cariEvent(Out : ListEvent, namaEvent : string) -> adr_Event

Kamus

P, Q : Adr_event

Found : boolean

Algoritma

```
    if (isEmptyListEvent(L) == true) then
        Output "Event Kosong"
```

```

Else
    P = first(L)
While (P != first(L) do
    If (info(P).namaEvent == namaEvent) then
        Found = true
        Q = P
        P = next(P)
        While (P != first(L)
    If (found == true) then
        Return Q
    else if (found == false) then
        return nil
    endif
Endprocedure

```

Procedure showEvent(In/Out L : ListEvent)

Kamus

Adr_event P = first(L)

Integer i = 1

Algoritma

```

    If ((isEmptyListEvent(L) == true) then
        Output "Event Kosong"
    Else
        While (P != first(L) do
            Output "namaEvent"
            Output "butuhBudget"
            Output "budgetKurang"
            Output "budgetLebih"
            P = next(P)
        Endif
    Endprocedure

```

Procedure tambahEvent(In/Out L : ListEvent)

Kamus

Integer menu = 0

Event = eventBaru

Algoritma

While(menu !=2) then

While(menu ==1) do

System"CLS"

Output"Nama Event :"

Output"Dana yang dibutuhkan :"

adr_Event P = newEvent(eventBaru)

insertFirstEvent(L, P)

Output"1. Tambah Data Event Lagi"

Output"2. Kembali"

Ouput"Pilih Menu:"

Endprocedure

Procedure hapusEvent(In/Out L : ListEvent, namaEvent : string, In/Out P : adr_Event)

Kamus

Adr event = Q

Found : Boolean

Algoritma

If(P == nil) then

Output"Data tidak ditemukan"

Else

if P == first(L) then

deleteFirstEvent(L, P)

delEvent(P)

else if (P == last(L) then

```

        deleteLastEvent(L, P)
        delEvent(P)
    else if (first(L) == last(L) then
        deleteFirstEvent(L, P)
        delEvent(P)
    else
        adr_Event Prec
        Q = first(L)
        While (next(Q) != first(L) do
            if (next(Q) == P) then
                found = true
                Prec = Q
            Q = next(Q)
        deleteAfterEvent(L, P, Prec);
        delEvent(P);
    Endif
Endprocedure

```


Sponsor.h

Type Sponsor : <

namaSponsor : string

budget, sisaBudget : integer

counter : integer

>

Type infotypeS : sponsor

Type adr : pointer to elmList

Type elmList : <

Info : infotypeS

Next : adr_Sponsor

>

Type List : <

First : adr_Sponsor

>

createListSponsor (In/Out L : ListSponsor)

newSponsor (data : infotype) -> adr_Sponsor

delSponsor (In/Out P : adr_Sponsor)

insertFirstSponsor(In/Out L : Sponsor, Out P : adr_Sponsor)

insertLastSponsor(In/Out L : ListSponsor, Out P : adr_Sponsor)

inserAfterSponsor(In/Out L : ListSponsor, Out P : adr_Sponsor, Out Prec : adr_Sponsor)

deleteFirstSponsor(In/Out L : ListSponsor, In/Out P : adr_Sponsor)

deleteLastSponsor(In/Out L : ListSponsor, In/Out P : adr_Sponsor)

deleteAfterSponsor(In/Out L : ListSponsor, In/Out P : adr_Sponsor, Out Prec : adr_Sponsor)

cariSponsor(Out : ListSponsor, namaSponsor : string) -> adr_Sponsor

showSponsor(In/Out L : ListSponsor)

tambahSponsor(In/Out L : ListSponsor)

hapusSponsor(In/Out L : ListSponsor, namaSponsor : string, In/Out P : adr_Sponsor)

Sponsor.cpp

Procedure createListSponsor (In/Out L : ListSponsor)

Kamus

Algoritma

 First(L) = nil

Endprocedure

Function newSponsor (data : infotype) -> adr_Sponsor

Kamus

P = Adr_Sponsor

Algoritma

 P = new elmListSponsor;

 info(P) = x;

 next(P) = nil;

 return P;

Endprocedure

Procedure delSponsor (In/Out P : adr_Sponsor)

Kamus

Algoritma

 delete P

Endprocedure

Procedure insertFirstSponsor(In/Out L : Sponsor, Out P : adr_Sponsor)

Kamus

Algoritma

 If (first(L) == nil) then

 first(L) = P

 Else

next(P) = first(L)

first(L) = P

Endif

EndProcedure

Procedure insertLastSponsor(In/Out L : ListSponsor, Out P : adr_Sponsor)

Kamus

Algoritma

if (first(L) == nil) then

insertFirstSponsor(L, P)

else

adr_Sponsor Q = first(L)

while (next(Q) != nil) then

Q = next(Q)

next(Q) = P

Endif

Endprocedure

Procedure inserAfterSponsor(In/Out L : ListSponsor, Out P : adr_Sponsor, Out Prec : adr_Sponsor)

Kamus

Algoritma

if (first(L) == nil) then

insertFirstSponsor(L, P)

else

if (first(L) == Prec) then

insertFirstSponsor(L, P)

else if (next(Prec) == nil) then

insertLastSponsor(L, P)

else

next(P) = next(Prec)

next(Prec) = P

endif

Endprocedure

Procedure deleteFirstSponsor(In/Out L : ListSponsor, In/Out P : adr_Sponsor)

Kamus

Algoritma

if (first(L) == nil) then

 Output "List Kosong"

Else if (first(L) == nil) then

 deleteFirstSponsor(L, P)

else

 adr_Sponsor Q = first(L)

 while (next(next(Q)) != nil) then

 Q = next(Q)

 P = next(Q)

 next(Q) = nil

endif

endprocedure

Procedure deleteAfterSponsor(In/Out L : ListSponsor, In/Out P : adr_Sponsor, Out Prec :
adr_Sponsor)

Kamus

Algoritma

if (first(L) == nil) then

 Output "List Kosong"

Else

 if (first(L) == P) then

 deleteFirstSponsor(L, P)

 else if (next(P) == nil) then

 deleteLastSponsor(L, P)

 else

 P = next(Prec)

```

        next(Prec) = next(P)
        next(P) = nil
    endif
endprocedure

function cariSponsor(Out : ListSponsor, namaSponsor : string) -> adr_Sponsor
Kamus
P = adr_Sponsor
Algoritma
    if (first(L) == nil) then
        return nil
    else
        adr_Sponsor Q = first(L)
        bool found = false
        while ((Q != nil) && (found == false)) then
            if (info(Q).namaSponsor == namaSponsor) then
                found = true
                P = Q
                Q = next(Q)
            end if
            if (found == true) then
                return P
            end if
        end while
        return nil
    end if
endprocedure

```

```

Procedure showSponsor(In/Out L : ListSponsor)
Kamus
P = adr_Sponsor
Integer i = 1
P = first(L)

```

Algoritma

```
    If(P == nil) then
        Output "Sponsor kosong"
    while (P != nil) then
        Output "nama.Sponsor"
        Output "budget"
        Output "sisabudget"
    P = next(P)
Endif
```

endprocedure

Procedure tambahSponsor(In/Out L : ListSponsor)

Kamus

Integer menu = 0

Sponsor = sponsorBaru

Algoritma

```
    while (menu != 2) do
        system("CLS")
        Output "Nama Sponsor : "
        Output "Budget : "
        Output "Sponsor baru budget"
    insertFirstSponsor(L, newSponsor(sponsorBaru))
    Output "1.Tambah Data Sponsor Lagi";
    Output "2.Kembali";
    Output "Pilih Menu : "
    while (menu == 1)
endprocedure
```

Procedure hapusSponsor(In/Out L : ListSponsor, namaSponsor : string, In/Out P : adr_Sponsor)

Kamus

Algoritma

```

if (P == nil) then
    Output"List Kosong"
Else
    if (first(L) == P) then
        deleteFirstSponsor(L, P)
    else if (next(P) == NULL) then
        deleteLastSponsor(L, P)
    else
        adr_Sponsor Prec = first(L)
        while (next(Prec) != P) then
            Prec = next(Prec)
        deleteAfterSponsor(L, P, Prec)
    endif
endprocedure

```

Relasi.h

Type relasi : <

 jenisSponsorship : string

 danaSponsorship : integer

>

Type infotypeR : relasi

Type adr : pointer to elmList

Type elmList : <

 Info : infotypeR

 next : adr_Relasi

 prev : adr_Relasi

 Sponsor : adr_Sponsor

 Event : adr_Event

>

Type List : <

 First : adr_Relasi

>

createListRelasi (In/Out L : ListRelasi)

newRelasi (data : infotypeR x) -> adr_Sponsor S, adr_event E

delRelasi (In/Out P : adr_Relasi)

insertFirstRelasi(In/Out L : ListRelasi, Out P : adr_Relasi)

insertLastRelasi(In/Out L : ListRelasi, Out P : adr_Relasi)

inserAfterRelasi(In/Out L : ListRelasi, adr_Relasi Prec, Out P : adr_Relasi)

deleteFirstRelasi(In/Out L : ListRelasi, In/Out P : adr_Relasi)

deleteLastRelasi(In/Out L : ListRelasi, In/Out P : adr_Relasi)

deleteAfterRelasi(In/Out L : ListRelasi, In/Out P : adr_Relasi Prec, Out Prec : adr_Relasi)

cariRelasi(Out : ListRelasi) -> adr_Event E, adr_Sponsor S

showRelasi(In/Out L : ListRelasi)

tambahRelasi(In/Out LE : ListEvent, In/Out LS : ListSponsor, In/Out LR : ListRelasi, adr_Event E, adr_Sponsor S, grade : string, persen : integer,)

hapusRelasi(In/Out L : ListRelasi, namaRelasi : string, In/Out P : adr_Relasi)

Relasi.cpp

Procedure createListRelasi (In/Out L : ListRelasi)

Kamus

Algoritma

first(L) = nil

Endprocedure

Function newRelasi (data : infotypeR x) -> adr_Sponsor S, adr_event E

Kamus

Q = adr_Relasi

Algoritma

Q = new elmRelasi;

Sponsor(Q) = S;

Event(Q) = E;

info(Q) = x;

next(Q) = nil;

prev(Q) = nil;

return Q;

Endprocedure

Procedure delRelasi (In/Out P : adr_Relasi)

Kamus

Algoritma

Delete P

Endprocedure

Procedure insertFirstRelasi(In/Out L : ListRelasi, Out P : adr_Relasi)

Kamus

Algoritma

```
    if (first(L) == nil) then
        first(L) = P
    else
        next(P) = first(L)
        prev(first(L)) = P
        first(L) = P
    endif
endprocedure
```

Procedure insertLastRelasi(In/Out L : ListRelasi, Out P : adr_Relasi)

Kamus

Algoritma

```
    if (first(L) == nil) then
        insertFirstRelasi(L, P)
    else
        adr_Relasi Q = first(L)
        while (next(Q) != nil) then
            Q = next(Q)
        next(Q) = P
        prev(P) = Q
    endif
endprocedure
```

Procedure insertAfterRelasi(In/Out L : ListRelasi, adr_Relasi Prec, Out P : adr_Relasi)

Kamus

Algoritma

```
    if (first(L) == nil) then
        insertFirstRelasi(L, P)
    else
        if (first(L) == Prec) then
```

```

        insertFirstRelasi(L, P)
    else if (next(Prec) == nil) then
        insertLastRelasi(L, P)
    else
        next(P) = next(Prec)
        prev(next(Prec)) = P
        prev(P) = Prec
        next(Prec) = P
    endif
endprocedure

```

Procedure deleteFirstRelasi(In/Out L : ListRelasi, In/Out P : adr_Relasi)

Kamus

Algoritma

```

    if (first(L) == nil) then
        Output "ListKosong"
    Else if (next(P) == nil) then
        first(L) = nil
        Sponsor(P) = nil
        Event(P) = nil
    Else
        P = first(L)
        first(L) = next(P)
        prev(next(P)) = nil
        next(P) = nil
        Sponsor(P) = nil
        Event(P) = nil
    Endif
Endprocedure

```

Procedure deleteLastRelasi(In/Out L : ListRelasi, In/Out P : adr_Relasi)

Kamus

Algoritma

```
if (first(L) == nil) then
    Output"ListKosong"
Else if (first(L) == P) then
    deleteFirstRelasi(L,P)
else
    adr_Relasi Q = first(L);
    while(next(next(Q)) != nil) then
        Q = next(Q)
    P = next(Q)
    next(Q) = nil
    prev(P) = nil
    Sponsor(P) = nil
    Event(P) = nil
Endif
```

Endprocedure

Procedure deleteAfterRelasi(In/Out L : ListRelasi, In/Out P : adr_Relasi Prec, Out Prec : adr_Relasi)

Kamus

Algoritma

```
if (first(L) == nil) then
    Output"ListKosong"
Else
    if (first(L) == P) then
        deleteFirstRelasi(L ,P)
    else if (next(P) == nil) then
        deleteLastRelasi(L ,P)
    else
        P = next(Prec)
        next(Prec) = next(P)
```

prev(next(P)) = Prec

next(P) = nil

prev(P) = nil

Sponsor(P) = nil

Event(P) = nil

Function cariRelasi(Out : ListRelasi) -> adr_Event E, adr_Sponsor S

Kamus

adr_Relasi Q = first(L)

Algoritma

while(Q != nil) then

if(Event(Q) == E && Sponsor(Q) == S) then

return Q

Q = next(Q)

Return nil

endprocedure

Procedure showRelasi(In/Out L : ListRelasi)

Kamus

adr_Relasi Q = first(L)

long budget = info(Event(Q)).butuhBudget - info(Q).danaSponsorship

Algoritma

while (Q != nil) then

Output"namaEvent"

Output"namaSponsor"

Output"jenisSponsorship"

Output"budget"

Endprocedure

Procedure tambahRelasi(In/Out LE : ListEvent, In/Out LS : ListSponsor, In/Out LR : ListRelasi,
adr_Event E, adr_Sponsor S, grade : string, persen : integer,)

Kamus

Algoritma

Procedure hapusRelasi(In/Out L : ListRelasi, namaRelasi : string, In/Out P : adr_Relasi)

Kamus

Algoritma

```
    if (P == nil) then
        Output"ListKosong"
    Else
        if (first(L) == P) then
            deleteFirstRelasi(L, P)
        else if (next(P) == nil) then
            deleteLastRelasi(L, P)
        else
            adr_Relasi Prec = first(L)
            while(next(Prec) != P) then
                Prec = next(Prec)
            deleteAfterRelasi(L, P, Prec)
        endif
    endif
```

endprocedure

Menu.h

MainMenu (Out LE : ListEvent, Out LS: ListSponsor, Out LR: ListRelasi)

MenuEvent (In/Out LE :ListEvent, In/Out LR : ListRelasi)

MenuSponsor (In/Out LS : ListSponsor, In/Out LR : ListRelasi)

MenuRelasi(In/Out LE : ListEvent, In/Out LS : ListSponsor, In/Out LR:ListRelasi)

Spasi(jum : integer, kata : string)

Menu.cpp

Procedure MainMenu (Out LE : ListEvent, Out LS: ListSponsor, Out LR: ListRelasi)

Kamus

Menu : integer

Algoritma

Do

```
system("cls");
```

```
Output"||=====||"
```

```
Output"||      TUBES STD - Event Sponsorship      ||" << endl;
```

```
Output"||=====||"
```

```
Output"||  Anggota : 1. Muhammad Zaidan Rafif (1302213072)  ||"
```

```
Output"||          2. Kamal Maulaazka Sidhqi (1302210032)  ||"
```

```
Output"||=====||"
```

```
Output " MENU"
```

```
Output " 1. Event (Parent)"
```

```
Output " 2. Sponsor (Child)"
```

```
Output " 3. Level Sponsorship (relasi)"
```

```
Output " 4. Exit"
```

```
Output " Masukkan menu : "
```

```
switch(menu) then
```

```
case 1 : menuEvent(LE, LR); break
```

```

        case 2 : menuSponsor(LS, LR); break
        case 3 : menuRelasi(LE, LS, LR); break
        case 4 : exit(0); break
    while (menu != 1 || menu != 2)
endprocedure

```

Procedure MenuEvent (In/Out LE :ListEvent, In/Out LR : ListRelasi)

Kamus

Integer : menu

Algoritma

```

    while (menu != 3) then
        Output"Daftar Event"
        Output"No."
        Output>Nama Event"
        Output"Dana dibutuhkan"
        Output"Dana kurang"
        Output"Dana Lebih"
        showEvent(LE)
        Output"1.Tambah Event"
        Output"2. Hapus event"
        Output"3. Kembali"
        Output"PilihMenu"
    if (menu == 1) then
        system("CLS")
        tambahEvent(LE)
    else if (menu == 2) then
        system("CLS");
        string namaEvent;
        char pil;
        Output"Cari Nama Event"
        adr_Event P = cariEvent(LE, namaEvent)
    end if
end while

```



```

if (P == nil) then
    Output"Tidak ada event Bernama "
    system("pause");
    system("CLS");
    menu = 3;
    menuEvent(LE, LR)
else
    Output"Nama event"
    Output"Budget yang dibutuhkan"
    Output"Budget Kurang"
    Output"apakah anda yakin menghapus data?"
    if (pil == 'y') then
        adr_Relasi R = first(LR)
        while (R != nil) then
            if (info(P).namaEvent == info(Event(R)).namaEvent) then
                hapusRelasi(LR, R)
                R = next(R)
            hapusEvent(LE, namaEvent, P)
            system("CLS")
            menu = 3
            menuEvent(LE, LR)
        else if (pil == 'n') then
            system("CLS")
            menu = 3
            menuEvent(LE, LR)
        while (menu == 1 || menu == 2)
    endif
endprocedure

```

Procedure MenuSponsor (In/Out LS : ListSponsor, In/Out LR : ListRelasi)

Kamus

Menu : integer = 0

Algoritma

```
while (menu != 3) then
    Output"Daftar Sponsor"
    Output"No."
    Output>Nama Sponsor"
    Output"Budget Sponsor"
    Output"Sisa Budget"
    showEvent(LS)
    Output"1.Tambah Sponsor"
    Output"2. Hapus Sponsor"
    Output"3. Kembali"
    Output"PilihMenu"
    if (menu == 1) then
        system("CLS")
        tambahSponsor(LS)
    else if (menu == 2) then
        system("CLS");
        string namaSponsor;
        char pil;
        Output"Cari Nama Sponsor"
        adr_Event P = cariSponsor(LS, namaSponsor)
        if (P == nil) then
            Output"Tidak ditemukan "
            system("pause");
            system("CLS");
            menu = 3;
            menuSponsor(LS, LR)
        else
            Output>Nama Sponsor"
            Output"Budget awal"
```

```

        Output"Sisa budget"
        Output"apakah anda yakin menghapus data?"
    if (pil == 'y') then
        adr_Relasi R = first(LR)
        while (R != nil) then
            if (info(P).namaSponsor == info(Sponsor(R)).namaSponsor) then
                hapusRelasi(LR, R)
                R = next(R)
            hapusSponsor(LS, namaSponsor, P)
            system("CLS")
            menu = 3
            menuSponsor(LS, LR)
        else if (pil == 'n') then
            system("CLS")
            menu = 3
            menuSponsor(LS, LR)
        while (menu == 1 || menu == 2)
    endif
endprocedure

```

Procedure MenuRelasi(In/Out LE : ListEvent, In/Out LS : ListSponsor, In/Out LR:ListRelasi)

Kamus

Menu : integer = 0

char level; string namaEvent,namaSponsor

Algoritma

```

    while (menu != 3) then
        Output"Daftar Event"
        Output"No."
        Output>Nama Event"
        Output"Dana dibutuhkan"
        Output"Dana kurang"
    
```

```

        Output"Dana Lebih"
        showEvent(LE)
        Output"Daftar Sponsor"
        Output"No."
        Output>Nama Sponsor"
        Output"Budget sponsor"
        Output"Sisa Budget"
        showSponsor(LS)
        Output"1.Tambah Relasi"
        Output"2. List Sponsorsip"
        Output"3. Kembali"
        Output"PilihMenu"
    while (menu == 1 || menu == 2)
endprocedure

```

Procedure Spasi(jum : integer, kata : string)

Kamus

Algoritma

```

    int l = strlen(kata);
    int pos = (int)((jum - l) / 2)
    for (int i = 0; i < pos; i++)
        Output"kata"

```

Endprocedure

Main.cpp

Algoritma

```

int main()
{
    ListEvent LE
    ListSponsor LS
    ListRelasi LR
    createListEvent(LE)
}

```

createListSponsor(LS)

createListRelasi(LR)

mainMenu(LE, LS, LR)

return 0

endprocedure