# LAPORAN

**Algoritma dan Struktur Data**

A logo with a yellow and blue design

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1. Listing Latihan
2. Delete Awal
3. Program

|  |
| --- |
| #include <stdio.h>  #include <stdlib.h>  #include <string.h>  #define maxnama 20  typedef struct siswa{  int no;  char nama [maxnama];  float nilai;  struct siswa \*next;  } Node;  Node \*head = NULL, \*p, \*hapus;  void alocation();  void insert\_akhir();  void delete\_awal();  void delete\_akhir();  void delete\_tertentu();  void bebas\_hapus(Node \*);  void hapus\_data();  void output();  int main(){    char jawab,jawabMenu;  int menuPilihan;    do {  fflush(stdin);  alocation();  insert\_akhir ();  fflush(stdin);  printf("mau mengulang lagi (y/t) : ");  scanf("%c", &jawab);    }while (jawab == 'y');  output();  fflush(stdin);  printf("Menghapus data awal\n");  delete\_awal();  output();  hapus\_data();    }  void alocation(){  int inputan;    p = (Node \*) malloc (sizeof(Node));    if(p == NULL){  printf("Alokasi Memori Gagal");  }else {  printf("Masukkan No Siswa : ");  scanf("%d", &p->no);  fflush(stdin);  printf("Masukkan Nama Siswa : ");  fgets(p->nama, sizeof(p->nama), stdin);  p->nama[strcspn(p->nama, "\n")] = 0;  fflush(stdin);  printf("Masukkan Nilai Siswa : ");  scanf("%f", &p->nilai);  p->next = NULL;  }  }  void insert\_akhir(){  Node \*tail;  if (head == NULL){  head = p;  }else{  tail = head;  while (tail->next != NULL){  tail = tail->next;  }  tail -> next = p;  }  }  void delete\_awal(){  Node \*hapus;  hapus = head;    if(hapus->next == NULL){  head = NULL;  }else {  head = hapus->next;  bebas\_hapus(hapus);  }  }  void bebas\_hapus(Node \*deleteData){  free(deleteData);  deleteData == NULL;  }  void hapus\_data() {  Node \*temp;  while (head != NULL) {  temp = head;  head = head->next;  free(temp);  }  }  void output() {  Node\* outputTampilan;  printf("isi dari Dll\n");  printf("No\tNama\t\t\tNilai\n");  outputTampilan = head;  while (outputTampilan != NULL) {  printf("%d\t%-20s\t%.2f\n", outputTampilan->no, outputTampilan->nama, outputTampilan->nilai);  outputTampilan = outputTampilan->next;  }  } |

1. Output

A screenshot of a computer

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1. Delete Akhir
2. Program

|  |
| --- |
| #include <stdio.h>  #include <stdlib.h>  #include <string.h>  #define maxnama 20  typedef struct siswa{  int no;  char nama [maxnama];  float nilai;  struct siswa \*next;  } Node;  Node \*head = NULL, \*p, \*hapus;  void alocation();  void insert\_akhir();  void delete\_awal();  void delete\_akhir();  void delete\_tertentu();  void bebas\_hapus(Node \*);  void hapus\_data();  void output();  int main(){    char jawab,jawabMenu;  int menuPilihan;    do {  fflush(stdin);  alocation();  insert\_akhir ();  fflush(stdin);  printf("mau mengulang lagi (y/t) : ");  scanf(" %c", &jawab);  fflush(stdin);  }while (jawab == 'y');  output();  fflush(stdin);  printf("Menghapus data akhir\n");  delete\_akhir();  output();  hapus\_data();    }  void alocation(){  int inputan;    p = (Node \*) malloc (sizeof(Node));    if(p == NULL){  printf("Alokasi Memori Gagal");  }else {  printf("Masukkan No Siswa : ");  scanf("%d", &p->no);  fflush(stdin);  printf("Masukkan Nama Siswa : ");  fgets(p->nama, sizeof(p->nama), stdin);  p->nama[strcspn(p->nama, "\n")] = 0;  fflush(stdin);  printf("Masukkan Nilai Siswa : ");  scanf("%f", &p->nilai);  p->next = NULL;  }  }  void insert\_akhir(){  Node \*tail;  if (head == NULL){  head = p;  }else{  tail = head;  while (tail->next != NULL){  tail = tail->next;  }  tail -> next = p;  }  }  void delete\_awal(){  Node \*hapus;  hapus = head;    if(hapus->next == NULL){  head = NULL;  }else {  head = hapus->next;  bebas\_hapus(hapus);  }  }  void delete\_akhir(){  Node \*hapus, \*phapus;    hapus = head;  if(hapus->next == NULL){  head = NULL;  }else{  while(hapus->next != NULL){  phapus = hapus;  hapus = hapus->next;  }  phapus->next = NULL;  }    bebas\_hapus(hapus);  }  void bebas\_hapus(Node \*deleteData){  free(deleteData);  deleteData == NULL;  }  void hapus\_data() {  Node \*temp;  while (head != NULL) {  temp = head;  head = head->next;  free(temp);  }  }  void output() {  Node\* outputTampilan;  printf("isi dari Dll\n");  printf("No\tNama\t\t\tNilai\n");  outputTampilan = head;  while (outputTampilan != NULL) {  printf("%d\t%-20s\t%.2f\n", outputTampilan->no, outputTampilan->nama, outputTampilan->nilai);  outputTampilan = outputTampilan->next;  }  } |

1. Output

A screenshot of a computer

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1. Delete Tertentu
2. Program

|  |
| --- |
| #include <stdio.h>  #include <stdlib.h>  #include <string.h>  #define maxnama 20  typedef struct siswa{  int no;  char nama [maxnama];  float nilai;  struct siswa \*next;  } Node;  Node \*head = NULL, \*p, \*hapus;  void alocation();  void insert\_akhir();  void delete\_awal();  void delete\_akhir();  void delete\_tertentu();  void bebas\_hapus(Node \*);  void hapus\_data();  void output();  int main(){    char jawab,jawabMenu;  int menuPilihan;    do {  fflush(stdin);  alocation();  insert\_akhir ();  fflush(stdin);  printf("mau mengulang lagi (y/t) : ");  scanf(" %c", &jawab);  fflush(stdin);  }while (jawab == 'y');  output();  fflush(stdin);  printf("Menghapus data akhir\n");  delete\_tertentu();  output();  hapus\_data();    }  void alocation(){  int inputan;    p = (Node \*) malloc (sizeof(Node));    if(p == NULL){  printf("Alokasi Memori Gagal");  }else {  printf("Masukkan No Siswa : ");  scanf("%d", &p->no);  fflush(stdin);  printf("Masukkan Nama Siswa : ");  fgets(p->nama, sizeof(p->nama), stdin);  p->nama[strcspn(p->nama, "\n")] = 0;  fflush(stdin);  printf("Masukkan Nilai Siswa : ");  scanf("%f", &p->nilai);  p->next = NULL;  }  }  void insert\_akhir(){  Node \*tail;  if (head == NULL){  head = p;  }else{  tail = head;  while (tail->next != NULL){  tail = tail->next;  }  tail -> next = p;  }  }  void delete\_awal(){  Node \*hapus;  hapus = head;    if(hapus->next == NULL){  head = NULL;  }else {  head = hapus->next;  bebas\_hapus(hapus);  }  }  void delete\_akhir(){  Node \*hapus, \*phapus;    hapus = head;  if(hapus->next == NULL){  head = NULL;  }else{  while(hapus->next != NULL){  phapus = hapus;  hapus = hapus->next;  }  phapus->next = NULL;  }    bebas\_hapus(hapus);  }  void delete\_tertentu() {  Node\* hapus, \*phapus;  int keyword;  printf("Data yang mau dihapus : ");  scanf("%d", &keyword);  hapus = head;  if (hapus->no == keyword) {  delete\_awal();  }  else {  while (hapus->no != keyword) {  if (hapus->next == NULL) {  printf("Keyword tidak ditemukan !!");  exit(0);  }  else {  phapus = hapus;  hapus = hapus->next;  }  }  phapus->next = hapus->next;  bebas\_hapus(hapus);  }  }  void bebas\_hapus(Node \*deleteData){  free(deleteData);  deleteData == NULL;  }  void hapus\_data() {  Node \*temp;  while (head != NULL) {  temp = head;  head = head->next;  free(temp);  }  }  void output() {  Node\* outputTampilan;  printf("isi dari Dll\n");  printf("No\tNama\t\t\tNilai\n");  outputTampilan = head;  while (outputTampilan != NULL) {  printf("%d\t%-20s\t%.2f\n", outputTampilan->no, outputTampilan->nama, outputTampilan->nilai);  outputTampilan = outputTampilan->next;  }  } |

1. Output

A screenshot of a computer

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1. Insert-delete Menu
2. Program

|  |
| --- |
| #include <stdio.h>  #include <stdlib.h>  #include <string.h>  #define maxnama 20  typedef struct siswa{  int no;  char nama [maxnama];  float nilai;  struct siswa \*next;  } Node;  Node \*head = NULL, \*p, \*hapus;  void alocation();  void insert\_akhir();  void delete\_awal();  void delete\_akhir();  void delete\_tertentu();  void bebas\_hapus(Node \*);  void hapus\_data();  void output();  int main(){    char jawab,jawabMenu;  int menuPilihan;  printf("====Selamat Datang di Menu Delete====\n");    do{  printf("\nlisting menu\n");  printf("1. Delete Awal\n2. Delete Akhir\n3. Delete tertentu\n4. exit\n\n");    printf("Masukkan Menu Pilihan : ");  scanf("%d", &menuPilihan);    if(menuPilihan == 1){    do {  fflush(stdin);  alocation();  insert\_akhir ();  fflush(stdin);  printf("mau mengulang lagi (y/t) : ");  scanf("%c", &jawab);    }while (jawab == 'y');  output();  fflush(stdin);  printf("Menghapus data awal\n");  delete\_awal();  output();  hapus\_data();    }else if(menuPilihan == 2){    do {  fflush(stdin);  alocation();  insert\_akhir ();  fflush(stdin);  printf("mau mengulang lagi (y/t) : ");  scanf("%c", &jawab);    }while (jawab == 'y');  output();  fflush(stdin);  printf("Menghapus data akhir\n");  delete\_akhir();  output();  hapus\_data();    }else if(menuPilihan == 3){    do {  fflush(stdin);  alocation();  insert\_akhir ();  fflush(stdin);  printf("mau mengulang lagi (y/t) : ");  scanf("%c", &jawab);    }while (jawab == 'y');  output();  fflush(stdin);  printf("Menghapus data posisi tertentu\n");  printf("\n");  fflush(stdin);  delete\_tertentu();  output();  hapus\_data();    }else if(menuPilihan == 4){  printf("\nTerima kasih telah menggunakan program kami :)");  exit(0);  }else{  printf("Menu tidak ditemukan !!");  }    printf("Mau menggunakan lagi (y/t) : ");  scanf("%c", &jawab);  fflush(stdin);  }while (jawab == 'y');  }  void alocation(){  int inputan;    p = (Node \*) malloc (sizeof(Node));    if(p == NULL){  printf("Alokasi Memori Gagal");  }else {  printf("Masukkan No Siswa : ");  scanf("%d", &p->no);  fflush(stdin);  printf("Masukkan Nama Siswa : ");  fgets(p->nama, sizeof(p->nama), stdin);  p->nama[strcspn(p->nama, "\n")] = 0;  fflush(stdin);  printf("Masukkan Nilai Siswa : ");  scanf("%f", &p->nilai);  p->next = NULL;  }  }  void insert\_akhir(){  Node \*tail;  if (head == NULL){  head = p;  }else{  tail = head;  while (tail->next != NULL){  tail = tail->next;  }  tail -> next = p;  }  }  void delete\_awal(){  Node \*hapus;  hapus = head;    if(hapus->next == NULL){  head = NULL;  }else {  head = hapus->next;  bebas\_hapus(hapus);  }  }  void delete\_akhir(){  Node \*hapus, \*phapus;    hapus = head;  if(hapus->next == NULL){  head = NULL;  }else{  while(hapus->next != NULL){  phapus = hapus;  hapus = hapus->next;  }  phapus->next = NULL;  }    bebas\_hapus(hapus);  }  void delete\_tertentu() {  Node\* hapus, \*phapus;  int keyword;  printf("Data yang mau dihapus : ");  scanf("%d", &keyword);  hapus = head;  if (hapus->no == keyword) {  delete\_awal();  }  else {  while (hapus->no != keyword) {  if (hapus->next == NULL) {  printf("Keyword tidak ditemukan !!");  exit(0);  }  else {  phapus = hapus;  hapus = hapus->next;  }  }  phapus->next = hapus->next;  bebas\_hapus(hapus);  }  }  void bebas\_hapus(Node \*deleteData){  free(deleteData);  deleteData == NULL;  }  void hapus\_data() {  Node \*temp;  while (head != NULL) {  temp = head;  head = head->next;  free(temp);  }  }  void output() {  Node\* outputTampilan;  printf("isi dari Dll\n");  printf("No\tNama\t\t\tNilai\n");  outputTampilan = head;  while (outputTampilan != NULL) {  printf("%d\t%-20s\t%.2f\n", outputTampilan->no, outputTampilan->nama, outputTampilan->nilai);  outputTampilan = outputTampilan->next;  }  } |

1. Output

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