**File Handling**

**Sequential Files**

* Storage of data in variables and arrays is temporary.
* Data is lost when program terminates.
* Files are used to store data permanently.

**Creating Sequential Access Files**

Declaring a file pointer

FILE \*cfPtr;

Open a file to write data.

cfPtr = fopen(“number.dat”, “w”);

Creates “number.dat” file to store/write data

**Writing data to a sequential-access file**

#include <stdio.h>

int main(void)

{

int number = 10;

FILE \*cfPtr;

cftr = fopen(“number.dat”, “w”);

if ( cfPtr == NULL)

{

printf(“Cannot create file\n”); return -1;

}

fprintf(cfPtr, “%d\n”, number); fclose(cfPtr);

return 0;

}

**Writing multiple records to a sequential file**

#include <stdio.h>

int main(void)

{

char ID[10];

char name[ 30];

double avgMarks;

int i;

FILE \*cfPtr;

cfPtr = fopen(“marks.dat", "w");

if (cfPtr == NULL)

{

printf("File cannot be open");

return -1;

}

for(i = 1; i <= 5; ++i)

{

printf("Pls input the student ID");

scanf("%s”, ID);

printf("Pls input the name");

scanf("%s", name);

printf("Pls input the average Marks");

scanf("%lf",& avgMarks);

fprintf(cfPtr, "%s %s %.2f\n", ID, name, avgMarks);

}

fclose(cfPtr);

return 0;

}

**Reading data from a sequential – Access file**

#include <stdio.h>

int main( void)

{

int number ;

FILE \*cfPtr;

cftr = fopen(“number.dat”, “r”);

if ( cfPtr == NULL)

{

printf(“File could not be pened\n”);

return -1;

}

fscanf(cfPtr, “%d”, &number);

printf(“Number is : %d \n”, number );

fclose(cfPtr);

return 0;

}

**Reading data from a file**

# include <stdio.h>

int main(void)

{

FILE \*cfPtr; char ID[10];

char name[ 30];

double avgMarks;

cfPtr = fopen(“marks.dat", “r");

if ( cfPtr == NULL)

{

printf("File cannot be open");

return -1;

}

fscanf(cfPtr, "%s %s %lf", ID, name, &avgMarks);

printf "%s %s %lf", ID, name, avgMarks);

fclose(cfPtr);

return 0;

}

**Reading multiple records from a sequential file**

# include <stdio.h>

int main(void)

{

FILE \*cfPtr; char ID[10];

char name[ 30];

double avgMarks;

cfPtr = fopen(“marks.dat", “r");

if ( cfPtr == NULL)

{

printf("File cannot be open");

return -1;

}

fscanf(cfPtr, "%s %s %lf", ID, name, avgMarks);

while (!feof(cfPtr))

{

printf ("%s %s %lf", ID, name, avgMarks);

fscanf(cfPtr, "%s %s %lf", ID, name, &avgMarks);

}

fclose(cfPtr);

return 0;

}

**File Opening Modes**

|  |  |
| --- | --- |
| **Mode** | Description |
| r | Open an existing file for reading |
| w | Create a file for writing. If the file already exists, discard the current contents |
| a | Append; open or create a file for writing at the end of the file |
| r+ | Open an existing fil for update ( reading and writing ) |
| w+ | Create a file for update. If the file already exists, discard the current contents |
| a+ | Append: open or create a file for update; writing is done at the end of the file. |