**2. Write a structure to store the roll no., name, age (between 11 to 14) and address**

**of students (more than 10). Store the information of the students.**

**- print the names of all the students having age 14.**

**- print the names of all the students having even roll no.**

**- display the details of the student whose roll no is given (i.e. roll no. entered by**

**the user).**

**Using structure variable**

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

struct Student

{

char\* name;

int roll\_number;

int age;

};

int main()

{

int i = 0, n = 11;

struct Student student[n];

student[0].roll\_number = 1;

student[0].name = "Soubhagya";

student[0].age = 12;

student[1].roll\_number = 2;

student[1].name = "Abdul";

student[1].age = 10;

student[2].roll\_number = 3;

student[2].name = "Santosh";

student[2].age = 11;

student[3].roll\_number = 4;

student[3].name = "BuntyBhai";

student[3].age = 12;

student[4].roll\_number = 5;

student[4].name = "Raja";

student[4].age = 11;

student[5].roll\_number = 6;

student[5].name = "Raja";

student[5].age = 13;

student[6].roll\_number = 7;

student[6].name = "Shalinee";

student[6].age = 14;

student[7].roll\_number = 8;

student[7].name = "Anwesh";

student[7].age = 13;

student[8].roll\_number = 9;

student[8].name = "Gunu";

student[8].age = 11;

student[9].roll\_number = 10;

student[9].name = "Rashmi";

student[9].age = 13;

student[10].roll\_number =11;

student[10].name = "Sasmita";

student[10].age = 13;

printf("Student Records:\n");

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

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

printf("The names of all the students having age 14");

printf("\n");

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

{

if(student[i].age==14)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

printf("The names of all the students having even roll no");

printf("\n");

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

{

if(student[i].roll\_number%2==0)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

return 0;

}

**Using typedef**

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

typedef struct Student

{

char\* name;

int roll\_number;

int age;

};

int main()

{

int i = 0, n = 11;

struct Student student[n];

student[0].roll\_number = 1;

student[0].name = "Soubhagya";

student[0].age = 12;

student[1].roll\_number = 2;

student[1].name = "Abdul";

student[1].age = 10;

student[2].roll\_number = 3;

student[2].name = "Santosh";

student[2].age = 11;

student[3].roll\_number = 4;

student[3].name = "BuntyBhai";

student[3].age = 12;

student[4].roll\_number = 5;

student[4].name = "Raja";

student[4].age = 11;

student[5].roll\_number = 6;

student[5].name = "Raja";

student[5].age = 13;

student[6].roll\_number = 7;

student[6].name = "Shalinee";

student[6].age = 14;

student[7].roll\_number = 8;

student[7].name = "Anwesh";

student[7].age = 13;

student[8].roll\_number = 9;

student[8].name = "Gunu";

student[8].age = 11;

student[9].roll\_number = 10;

student[9].name = "Rashmi";

student[9].age = 13;

student[10].roll\_number =11;

student[10].name = "Sasmita";

student[10].age = 13;

printf("Student Records:\n");

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

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

printf("The names of all the students having age 14");

printf("\n");

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

{

if(student[i].age==14)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

printf("The names of all the students having even roll no");

printf("\n");

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

{

if(student[i].roll\_number%2==0)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

return 0;

}

**Using array of structures**

#include <stdio.h>

#include <string.h>

struct student

{

int rno;

char name[30];

int age;

};

int main()

{

int i;

struct student record[20];

record[0].rno=1;

strcpy(record[0].name, "Soubhagya");

record[0].age = 11;

record[1].rno=2;

strcpy(record[1].name, "Abdul");

record[1].age = 12;

record[2].rno=3;

strcpy(record[2].name, "Shalinee");

record[2].age = 13;

record[3].rno=4;

strcpy(record[3].name, "Raja");

record[3].age = 14;

record[4].rno=5;

strcpy(record[4].name, "Sabya");

record[4].age = 11;

record[5].rno=6;

strcpy(record[5].name, "Rashmi");

record[5].age = 12;

record[6].rno=7;

strcpy(record[6].name, "Sonali");

record[6].age = 13;

record[7].rno=8;

strcpy(record[7].name, "Sasmita");

record[7].age = 14;

record[8].rno=9;

strcpy(record[8].name, "Biswa");

record[8].age = 12;

record[9].rno=10;

strcpy(record[9].name, "Bunty");

record[9].age = 11;

record[10].rno=11;

strcpy(record[10].name, "Santosh");

record[10].age = 13;

printf("Record of student who have roll number 14");

for(i=0; i<11; i++)

{

if(record[i].age==14)

{

printf(" \nRecords of STUDENT : %d \n", i+1);

printf(" Roll no is: %d \n", record[i].rno);

printf(" Name is: %s \n", record[i].name);

printf(" Age is: %d\n\n",record[i].age);

}

}

printf("Record of studentwho have even roll no");

for(i=0; i<11; i++)

{

if(record[i].rno%2==0)

{

printf(" \nRecords of STUDENT : %d \n", i+1);

printf(" Roll no is: %d \n", record[i].rno);

printf(" Name is: %s \n", record[i].name);

printf(" Age is: %d\n\n",record[i].age);

}

}

return 0;

}

**Using nested structure**

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

struct Student

{

char\* name;

int roll\_number;

int age;

};

int main()

{

int i = 0, n = 11;

struct Student student[n];

student[0].roll\_number = 1;

student[0].name = "Soubhagya";

student[0].age = 12;

student[1].roll\_number = 2;

student[1].name = "Abdul";

student[1].age = 10;

student[2].roll\_number = 3;

student[2].name = "Santosh";

student[2].age = 11;

student[3].roll\_number = 4;

student[3].name = "BuntyBhai";

student[3].age = 12;

student[4].roll\_number = 5;

student[4].name = "Raja";

student[4].age = 11;

student[5].roll\_number = 6;

student[5].name = "Raja";

student[5].age = 13;

student[6].roll\_number = 7;

student[6].name = "Shalinee";

student[6].age = 14;

student[7].roll\_number = 8;

student[7].name = "Anwesh";

student[7].age = 13;

student[8].roll\_number = 9;

student[8].name = "Gunu";

student[8].age = 11;

student[9].roll\_number = 10;

student[9].name = "Rashmi";

student[9].age = 13;

student[10].roll\_number =11;

student[10].name = "Sasmita";

student[10].age = 13;

printf("Student Records:\n");

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

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

printf("The names of all the students having age 14");

printf("\n");

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

{

if(student[i].age==14)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

printf("The names of all the students having even roll no");

printf("\n");

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

{

if(student[i].roll\_number%2==0)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

return 0;

}

**Passing structure to function**

#include <stdio.h>

#include <string.h>

struct student

{

int rno;

char name[20];

int age;

};

void func(struct student record);

int main()

{

struct student record;

int i;

for(i=0;i<=10;i++)

{

record.rno=1;

strcpy(record.name, "Soubhagya");

record.age = 14;

record.rno=2;

strcpy(record.name, "Abdul");

record.age = 13;

record.rno=3;

strcpy(record.name, "Raja");

record.age = 12;

record.rno=4;

strcpy(record.name, "Shalinee");

record.age = 11;

record.rno=5;

strcpy(record.name, "Rashmi");

record.age = 12;

record.rno=6;

strcpy(record.name, "Sasmita");

record.age = 13;

record.rno=7;

strcpy(record.name, "Biswa");

record.age = 14;

record.rno=8;

strcpy(record.name, "Santosh");

record.age = 14;

record.rno=9;

strcpy(record.name, "Sonali");

record.age = 11;

record.rno=10;

strcpy(record.name, "Bunty");

record.age = 12;

func(record);

}

return 0;

}

void func(struct student record)

{

int i=0;

printf(" Id is: %d \n", record.rno);

printf(" Name is: %s \n", record.name);

printf(" Percentage is: %d \n", record.age);

}

**Using union variable**

#include<stdio.h>

#include<stdlib.h>

#include<string.h>

struct student

{

union

{

char name[10];

int roll\_number;

int age;

};

};

int main()

{

int i = 0, n = 11;

struct Student student[n];

student[0].roll\_number = 1;

student[0].name = "Soubhagya";

student[0].age = 12;

student[1].roll\_number = 2;

student[1].name = "Abdul";

student[1].age = 10;

student[2].roll\_number = 3;

student[2].name = "Santosh";

student[2].age = 11;

student[3].roll\_number = 4;

student[3].name = "BuntyBhai";

student[3].age = 12;

student[4].roll\_number = 5;

student[4].name = "Raja";

student[4].age = 11;

student[5].roll\_number = 6;

student[5].name = "Raja";

student[5].age = 13;

student[6].roll\_number = 7;

student[6].name = "Shalinee";

student[6].age = 14;

student[7].roll\_number = 8;

student[7].name = "Anwesh";

student[7].age = 13;

student[8].roll\_number = 9;

student[8].name = "Gunu";

student[8].age = 11;

student[9].roll\_number = 10;

student[9].name = "Rashmi";

student[9].age = 13;

student[10].roll\_number =11;

student[10].name = "Sasmita";

student[10].age = 13;

printf("Student Records:\n");

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

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

printf("The names of all the students having age 14");

printf("\n");

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

{

if(student[i].age==14)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

printf("The names of all the students having even roll no");

printf("\n");

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

{

if(student[i].roll\_number%2==0)

{

printf("\tName = %s\n", student[i].name);

printf("\tRoll Number = %d\n", student[i].roll\_number);

printf("\tAge = %d\n", student[i].age);

printf("\n");

}

}

return 0;

}