



Problem Solving With C - UE24CS151B

Array of Structures

Prof. Sindhu R Pai

PSWC Theory Anchor, Feb-May, 2025

Department of Computer Science and Engineering

PROBLEM SOLVING WITH C

Array of Structures



1. Introduction
2. Array of Structure Variable Definition
3. Array of Structure Variable Initialization
4. Pointer to an Array of Structures

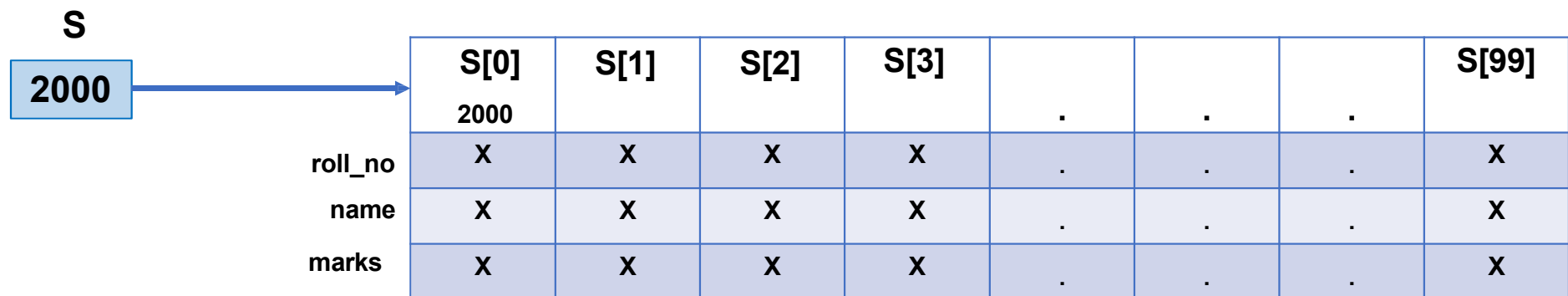
PROBLEM SOLVING WITH C

Array of Structures



Introduction

- Think about storing the roll number, name and marks of one student
We need structures to store different types of related data.
struct student s;
- Think about storing the roll number, name and marks of 100 students
We need an Array of structures
struct student S[100];
- S[0] stores the information of first student, S[1] stores the information of second student and so on.



PROBLEM SOLVING WITH C

Array of Structures



Declaration of Structure variable

- Can be done in two ways
 - Along with structure declaration after closing } before semicolon (;) of structure body.

```
struct student {  
    int roll_num; char name[100]; int marks;  
}s[100];
```
 - After structure declaration (either inside main or globally using struct keyword)

```
struct student s[100];
```
- Coding examples

PROBLEM SOLVING WITH C

Array of Structures



Initialization of structure variable

- **Compile time initialization:** Using a brace-enclosed initializer list

```
struct student S[] = { {1, "John", 60}, {2,"Jack", 40}, {3, "Jill", 77} };  
struct student S[3] = { {11, "Joseph", 60}}; //partial initialization  
struct student S[2] = {1, "John", 60, 2,"Jack", 40};
```

- **Run time initialization** (using loops preferably)
- Coding examples

PROBLEM SOLVING WITH C

Array of Structures



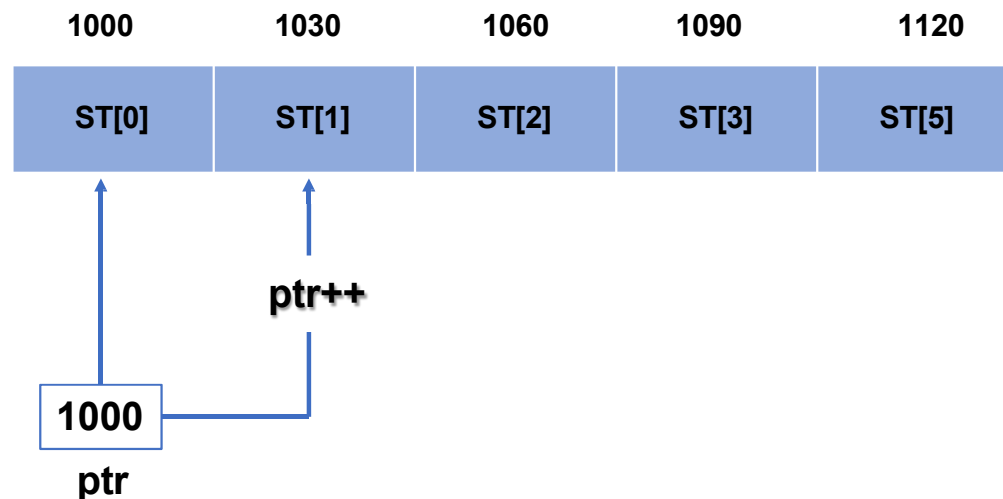
Pointer to an Array of Structures

- Used to access the array of structure variables efficiently

```
struct student
{
    int roll_no;
    char name[22];
    int marks;
}ST[5];
```

```
struct student *ptr = ST;
```

- Coding examples to print the array of structures using pointer





THANK YOU

Department of Computer Science and Engineering

Dr. Shylaja S S, Director, CCBD & CDSAML, PESU

Prof. Sindhu R Pai - sindhurpai@pes.edu

Dr. Shruti Jadon, CSE, PESU