

## **ADA – DATA STRUCTURE (LINKED LIST)**

```
with Text_IO;  
use Text_IO;  
with Ada.Strings.Unbounded;  
use Ada.Strings.Unbounded;  
with Ada.Text_IO;  
use Ada.Text_IO;  
procedure LinkedList is
```

```
  Ch : Character;  
  type Instuctors;  
  type Poi_Instuctors is access Instuctors;  
  type Instuctors is record  
    Name : Unbounded_String;  
    Next : Poi_Instuctors;  
  end record;
```

```
  type Students;  
  type Poi_Students is access Students;  
  type Students is record  
    Name : Unbounded_String;  
    Next : Poi_Students;  
    Instuctors : Poi_Instuctors;  
  end record;
```

```
  type Courses;  
  type Poi_Courses is access Courses;  
  type Courses is record  
    Name : Unbounded_String;  
    Next : Poi_Courses;  
    Students : Poi_Students;  
  end record;
```

```
  I : Poi_Instuctors;  
  S : Poi_Students;  
  C : Poi_Courses;
```

```
  Intstructor_Name : Unbounded_String;  
  Student_Name : Unbounded_String;  
  Courses_Name : Unbounded_String;
```

begin

```
Put_Line("The following data has been inserted into a Linked list");
New_Line;
Inststructor_Name := To_Unbounded_String("Ramky");
I :=new Instuctors'(Inststructor_Name, I);
Inststructor_Name := To_Unbounded_String("Singam");
I :=new Instuctors'(Inststructor_Name, I);
Inststructor_Name := To_Unbounded_String("Raghu");
I :=new Instuctors'(Inststructor_Name, I);
```

```
Student_Name := To_Unbounded_String("Samba");
S :=new Students'(Student_Name, S,I);
```

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```
Inststructor_Name := To_Unbounded_String("Venkat");
I :=new Instuctors'(Inststructor_Name, I);
Inststructor_Name := To_Unbounded_String("Bhanu");
I :=new Instuctors'(Inststructor_Name, I);
Inststructor_Name := To_Unbounded_String("Anil");
I :=new Instuctors'(Inststructor_Name, I);
```

```
Student_Name := To_Unbounded_String("Prashanth");
S :=new Students'(Student_Name, S,I);
```

```
Courses_Name := To_Unbounded_String("SOPL");
C:= new Courses'(Courses_Name, C ,S);
```

-----

```
Put_Line("Start");
Put_Line(To_String(C.Name));
New_Line;
Put_Line(To_String(C.Students.Name));
New_Line;
Put_Line(To_String(C.Students.Instuctors.Name));
New_Line;
Put_Line(To_String(C.Students.Instuctors.Next.Name));
New_Line;
Put_Line(To_String(C.Students.Instuctors.Next.Next.Name));
New_Line;
Put_Line(To_String(C.Students.Next.Name));
New_Line;
Put_Line(To_String(C.Students.Next.Instuctors.Name));
```

```
New_Line;  
Put_Line(To_String(C.Students.Next.Instuctors.Next.Name));  
New_Line;  
Put_Line(To_String(C.Students.Next.Instuctors.Next.Next.Name));  
Get(Ch);  
end LinkedList;
```

### **SAMPLE OUTPUT:**

The following data has been inserted into a Linked list

Start  
SOPL

Prashanth

Anil

Bhanu

Venkat

Samba

Raghu

Singam

Ramky