Session 3: Cursor

Cursor is a data type containing a table from SELECT ---FROM---WHERE---

Example:

a. Print the information of @ClassID as follows:

Class ID:…. BeginYear:……EndYear:…..

1. Student Name:….. Student ID:….. Birthday:….
2. Student Name:….. Student ID:….. Birthday:….
3. Student Name:….. Student ID:….. Birthday:….

….

Total:…. Students.

```
create proc StudentList
    @classID varchar(50)
as
begin
    declare @beginyear int
    declare @endyear int
    select  @beginyear=beginyear,
        @endyear=endyear
    from class
    where id=@classID
    print 'ClassID: ' + @classID + '
BeginYear' + cast(@beginyear as varchar(10))
+ ' EndYear' + cast(@endyear as varchar(10))

    declare c cursor for
    (select ID, name, birthday from student
```

```
    where classID=@classID)

    open c

    declare @ID varchar(50)
    declare @birthday datetime
    declare @name nvarchar(50)

    fetch next from c into @ID, @name,
@birthday
    declare @i int
    set @i=1
    while(@@fetch_status=0)
    begin
        print cast(@i as varchar(10)) + '.
Name:'+ @name +' ID:' + @ID +' Birthday:'
+cast(@birthday as varchar(50))
        fetch next from c into @ID, @name,
@birthday
        set @i=@i+1
    end
    set @i=@i-1
    print 'Total:' + cast(@i as varchar(20))
    close c
    deallocate c
end
go
exec StudentList 'LH000001  '
```

b. Print the subjects that @StudentID have passed as follows:
    1. Subject Name:….. Credit:….. Mark:….
    2. Subject Name:….. Credit:….. Mark:….
    3. Subject Name:….. Credit:….. Mark:….

```
create proc SubjectList
    @StudentID varchar(50)
as
begin
    declare d cursor for
    (select sub.name, sub.credits, r.mark
    from result r, subject sub
    where r.subjectID=sub.ID
    and r.studentID=@studentID and r.mark>=5
    and r.times >= all ( select r1.times from
result r1 where r1.subjectID=r.subjectID and
r1.
studentID=r.studentID))
    open d
    declare @name nvarchar(50)
    declare @credit int
    declare @mark float
    declare @i int
    set @i=1
    fetch next from d into
@name,@credit,@mark
    while(@@fetch_status=0)
    begin
        print cast(@i as varchar(3)) + ' Sub
Name:' + @name +' Credit:'+ cast(@credit as
```

```
varchar (50)) + ' Mark:' +cast(@mark as
varchar(4))
        set @i=@i+1
        fetch next from d into
@name,@credit,@mark
    end
    close d
    deallocate d
end
exec SubjectList 'HV000001  '
```

c. Print the information of @ClassID as follows:

Class ID:…. BeginYear:……EndYear:…..

1. Student Name:….. Student ID:….. Birthday:….

   -Passed Subjects:

      SubjectName:…. Mark:…..

      …

2. Student Name:….. Student ID:….. Birthday:….

   -Passed Subjects:

      SubjectName:…. Mark:…..

      …

Total:…. Students.

```
create proc SubjectList1
    @StudentID varchar(50)
as
begin
```

```
    declare d cursor for
    (select sub.name, r.mark
    from result r, subject sub
    where r.subjectID=sub.ID
    and r.studentID=@studentID and r.mark>=5
    and r.times >= all ( select r1.times from
result r1 where r1.subjectID=r.subjectID and
r1.
studentID=r.studentID))
    open d
    declare @name nvarchar(50)
    declare @mark float
    fetch next from d into  @name,@mark
    while(@@fetch_status=0)
    begin
        print' Sub Name:' + @name +' Mark:'
+cast(@mark as varchar(4))
        fetch next from d into  @name, @mark
    end
    close d
    deallocate d
end

create proc StudentList1
    @classID varchar(50)
as
begin
    declare @beginyear int
    declare @endyear int
    select  @beginyear=beginyear,
        @endyear=endyear
    from class
    where id=@classID
```

```
    print 'ClassID: ' + @classID + '
BeginYear' + cast(@beginyear as varchar(10))
+ ' EndYear' + cast(@endyear as varchar(10))

    declare c cursor for
    (select ID, name, birthday from student
    where classID=@classID)

    open c

    declare @ID varchar(50)
    declare @birthday datetime
    declare @name nvarchar(50)

    fetch next from c into @ID, @name,
@birthday
    declare @i int
    set @i=1
    while(@@fetch_status=0)
    begin
        print cast(@i as varchar(10)) + '.
Name:'+ @name +' ID:' + @ID +' Birthday:'
+cast(@birthday as varchar(50))
        print '-Passed Subjects:'
        exec SubjectList1 @ID

        fetch next from c into @ID, @name,
@birthday
        set @i=@i+1
    end
    set @i=@i-1
    print 'Total:' + cast(@i as varchar(20))
    close c
```

```
    deallocate c
end
go
exec StudentList1 'LH000001  '
```

Exercise:

Print the students of ClassID
ManagerID:.... ManagerName:
1. StudentID:....
StudentName:..... Average Mark:....
2. StudentID:....
StudentName:..... Average Mark:....
3. StudentID:....
StudentName:..... Average Mark:....

```
create proc GetAverage
    @StudentID nvarchar(30), @mark float
output
as
begin

    select
@mark=sum(r.mark*sub.credits)/sum(sub.credits
)
    from student s, result r, subject sub
    where s.ID=r.studentID  and r.mark is not
null
     and r.subjectID=sub.ID and
    s.ID=@StudentID and  r.times > = all
     (select r1.times from result r1
     where r1.studentID=s.ID and
r1.subjectID=sub.ID
```

```
    )

end
go


create proc ABC @ClassID varchar(20)
as
begin
    declare @managerID varchar(20)
    declare @managerName nvarchar(50)
    select @managerID=c.ManagerID,
    @managerName=t.Name
    from class c, teacher t where
c.ID=@classID
    and c.ManagerID=t.ID
    print 'ClassID: ' + @ClassID+' ManagerID:
'+
    @managerID + ' ManagerName: '+
@managerName
    declare c cursor for
    select s.ID, s.name from student s where
    s.classID=@ClassID
    open c
    declare @ID varchar(20)
    declare @name nvarchar(20)
    fetch next from c into  @ID,@name
    declare @i int
    set @i=1
    WHILE @@FETCH_STATUS = 0
    begin
        Declare @avermark float
        exec GetAverage @ID, @avermark output
```

```
        print cast(@i as varchar(4))+'.' + @ID
+ '
        ' +@name  + ' ' +cast (@avermark as
varchar(20))
        set @i=@i+1
        fetch next from c into  @ID,@name
    end
    close c
    deallocate c
end
go
exec ABC 'LH000001  '
select * from student
```