

# Guidelines for Developing Databases

Step 1: Identify all fields needed to produce the required information

Sample Student Information System for a College

First name

Last name

SSN

MCnumber

Street Address line1

Street Address line 2

City

State

Zip

Country

Phone - residence

Phone - business

Phone - mobile

Phone - pager

Primary email address

Secondary email address

Birth date

Ethnicity

Gender

classes attended (repeats)

credits earned (repeats)

grades earned (repeats)

semesters attended (repeats)

class schedule by semester

fees due by semester

fees paid by semester

financial aide avail by semester

financial aide used by semester

work study obligation by semester

work study completed by semester

# Guidelines for Developing Databases

## Step 2: Group related fields into tables

Sample Student Information System for a College

### Student Info [table]

First name  
Last name  
SSN  
Mnumber  
Street Address line1  
Street Address line 2  
City  
State  
Zip  
Country  
Phone - residence  
Phone - business  
Phone - mobile  
Phone - pager  
Primary email address  
Secondary email address  
Birth date  
Ethnicity  
Gender

### Financial Aide

fees due by semester  
fees paid by semester  
financial aide avail by semester  
financial aide used by semester  
work study obligation by semester  
work study completed by semester

### Transcript

classes attended  
student  
grade

### Class Info

course number (CA120)  
crn  
semester  
year  
room  
time  
days  
teacher

### Course Info

course number (CA120)  
course name  
credits  
catalog description  
prerequisites

# Guidelines for Developing Databases

## Step 3: Determine each table's primary key(s)

Sample Student Information System for a College

Student Info [table]	Transcript
<i>SSN</i>	<i>crn</i>
<i>MCnumber</i>	<i>semester</i>
First name	<i>year</i>
Last name	<i>student</i>
Street Address line1	grade
Street Address line 2	
City	
State	
Zip	
Country	
Phone - residence	
Phone - business	
Phone - mobile	
Phone - pager	
Primary email address	
Secondary email address	
Birth date	
Ethnicity	
Gender	

Class Info
<i>crn</i>
<i>semester</i>
<i>year</i>
course number (CA120)
room
time
days
teacher

Course Info
<i>course number (CA120)</i>
course name
credits
catalog description
prerequisites

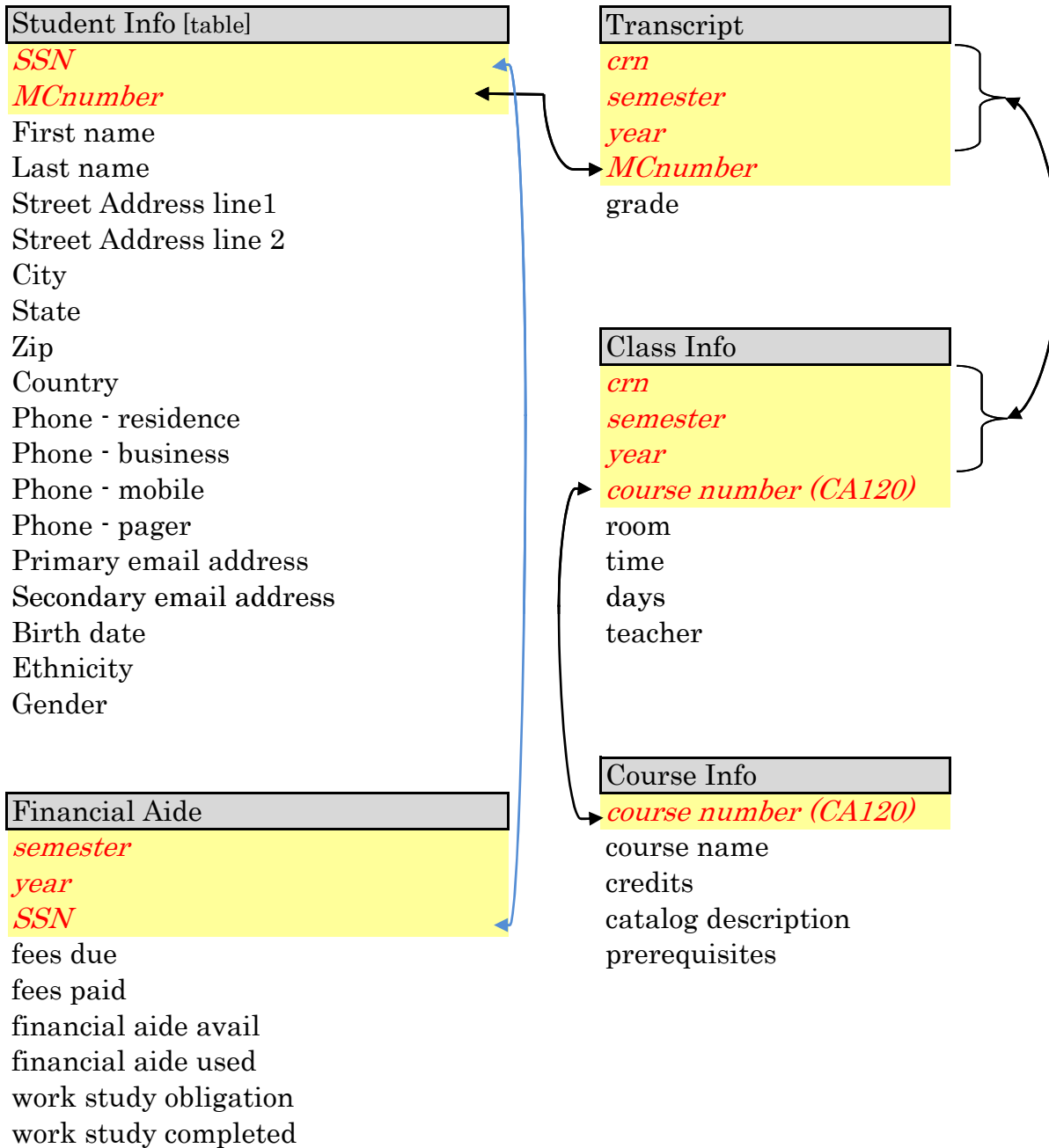
  

Financial Aide
<i>semester</i>
<i>year</i>
<i>student</i>
fees due
fees paid
financial aide avail
financial aide used
work study obligation
work study completed

# Guidelines for Developing Databases

## Step 4: Include a common field in related tables

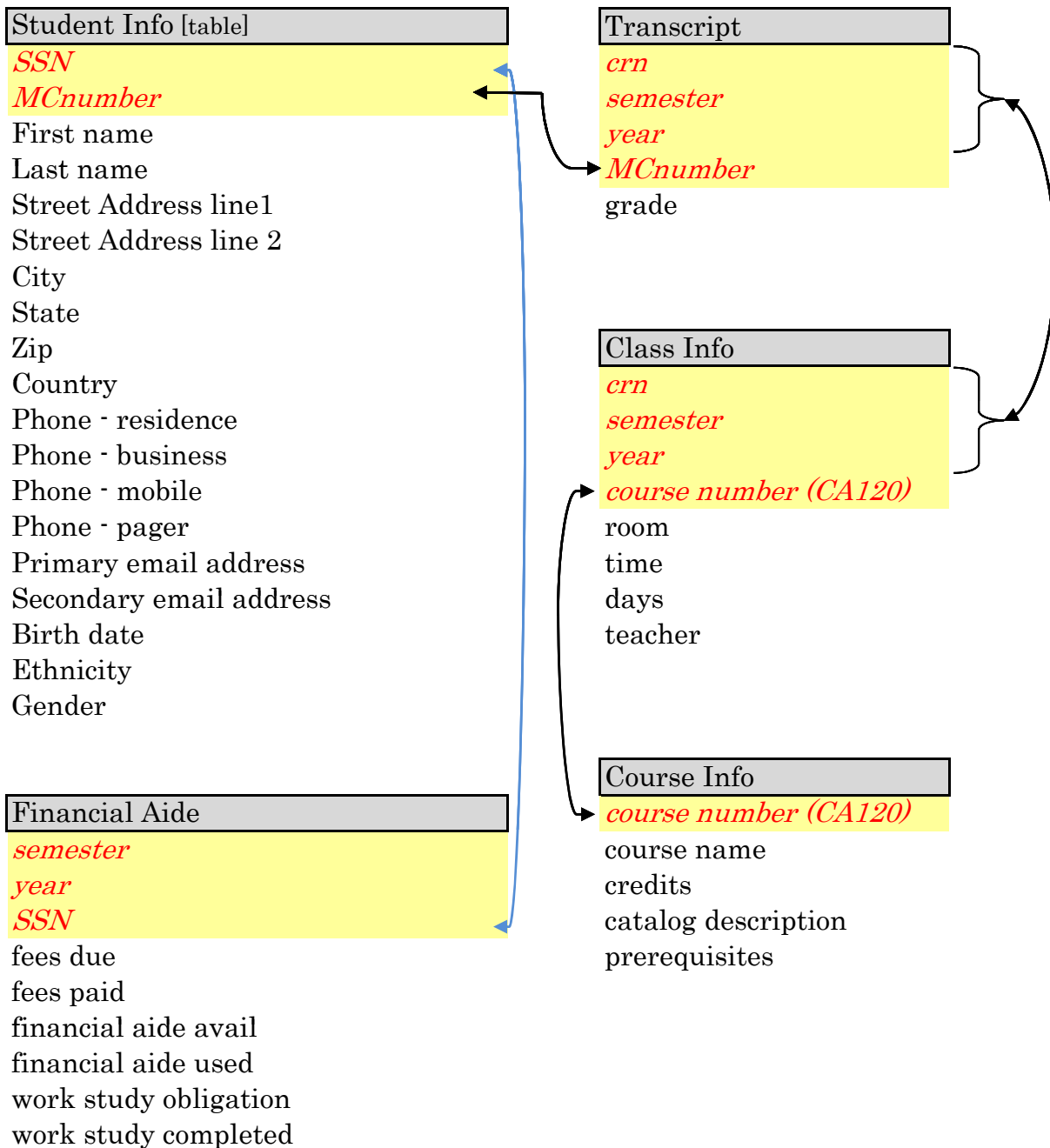
Sample Student Information System for a College



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## Step 5: Avoid Data Redundancy

Sample Student Information System for a College



# Guidelines for Developing Databases

Step 6: Determine the properties for each field

**Name of the field**

**Data type of field**

**Set size of field**

**Add comments (optional)**