

## Appendix E

### Data Dictionary for *NP40 Book Rental System*

**Branch** relation: Stores details of all branches

Attribute Name	Description	Data Type and Length	Constraint	Null Value
BranchNo	Unique identifier of each branch	tinyint	Primary Key	No
Address	Address of branch	varchar(150)		No
TelNo	Telephone number of branch	char(10)		No
DateStart	Start date of manager	smalldatetime		Yes
MgrID	Identifies manager of branch	tinyint	Foreign key --> Staff (StaffID)	Yes

**Staff** relation: Stores details of all staff

Attribute Name	Description	Data Type and Length	Constraint	Null Value
StaffID	Unique identifier of each member of staff	tinyint	Primary key	No
Name	Name of staff	varchar(50)		No
Gender	Gender of staff	char(1)	Values: M for Male, F for Female	No
DOB	Date of birth of staff	smalldatetime	At least 16 years old	No
DateJoin	Date that staff joined the company (Default to today's date)	smalldatetime	DateJoin not later than today	No
Salary	Gross monthly salary of staff	smallmoney		No
BranchNo	Identifies branch that staff is working	tinyint	Foreign key --> Branch (BranchNo)	Yes

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SupervisorID	Identifies supervisor of staff	tinyint	Foreign key --> Staff (StaffID)	Yes
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**Derived data:**

Age is derived from DOB. Age = Current year – Year of DOB

**StaffContact** relation: Stores details of staff contact numbers

Attribute Name	Description	Data Type and Length	Constraint	Null Value
StaffID	Unique identifier of staff	tinyint	Primary key Foreign key --> Staff (StaffID)	No
ContactNo	Contact number of staff	char(10)	Primary key	No

**Member** relation: Stores details of all members

Attribute Name	Description	Data Type and Length	Constraint	Null Value
MemberID	Unique identifier of each member	smallint	Primary key	No
Name	Name of member	varchar(50)		No
Address	Local address of member	varchar(150)		Yes
ContactNo	Contact number of member	char(10)		Yes
EmailAddr	Email address of member	varchar(50)		Yes
Gender	Gender of member	char(1)	Values: M for Male, F for Female	Yes
DateJoin	Date that member joined (Default to today's date)	smalldatetime	DateJoin not later than today	No
BranchNo	Identifies the branch that member registered with.	tinyint	Foreign key --> Branch (BranchNo)	No

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**Student** relation: Stores details of student members

Attribute Name	Description	Data Type and Length	Constraint	Null Value
MemberID	Unique identifier of member	smallint	Primary key Foreign key --> Member (MemberID)	No
School	Name of School that student is attending	varchar(50)		No

**BookCategory** relation: Stores all available categories of book

Attribute Name	Description	Data Type and Length	Constraint	Null Value
BookCat	Unique identifier of each book category	char(2)	Primary key	No
Description	Description of book category	varchar(100)		No

**Author** relation: Stores details of all authors of books

Attribute Name	Description	Data Type and Length	Constraint	Null Value
AuthorID	Unique identifier of each book author	smallint	Primary key	No
Name	Name of book author	varchar(50)		No

**Publisher** relation: Stores details of all publishers of books

Attribute Name	Description	Data Type and Length	Constraint	Null Value
PublisherID	Unique identifier of publisher	smallint	Primary key	No
Name	Name of publisher	varchar(50)		No

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**Book** relation: Stores details of all book titles that are available for loan

Attribute Name	Description	Data Type and Length	Constraint	Null Value
ISBN	Unique identifier of each book	char(10)	Primary key	No
Title	Title of book	varchar(200)		No
YearPublish	Year that book was published	Char(4)		No
PublisherID	Identifies the publisher that published the book	smallint	Foreign key --> Publisher (PublisherID)	Yes
BookCat	Identifies the category of book	char(2)	Foreign key --> BookCategory (BookCat)	Yes

**BookCopy** relation: Stores details of all copies of books

Attribute Name	Description	Data Type and Length	Constraint	Null Value
ISBN	Identifies the title of each book copy	char(10)	Primary key Foreign key -->Book(ISBN)	No
CopyNo	Identifies copy of each book title	tinyint	Primary key	No
DateIn	Date that book copy arrived at the company (Default to Today's date)	smalldatetime	DateIn not later than today	No
RentalRate	Rental rate of book copy	smallmoney	Minimum: \$2.50	No
Status	Status to indicate whether book copy is missing or damaged	char(1)	Values: M for Missing, D for Damaged	Yes

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**BookAuthor** Relation: Stores authors of each book

Attribute Name	Description	Data Type and Length	Constraint	Null Value
ISBN	Identifies the book written by the author	char(10)	Primary key Foreign key --> Book (ISBN)	No
AuthorID	Identifies the author who has written the book	smallint	Primary key Foreign key --> Author (AuthorID)	No

**Loan** relation: Stores details of loans by members

Attribute Name	Description	Data Type and Length	Constraint	Null Value
LoanNo	Unique identifier of each loan (Auto-generated number that is incremented by 1)	int	Primary key	No
DateOut	Date of loan Default to Today	smalldatetime	DateOut not later than today	No
DateDue	Date that loan is due	smalldatetime	DateDue must be later than DateOut	No
DateReturn	Date that loaned copy of book is returned	smalldatetime	DateReturn must be same or later than DateOut	Yes
RentalRate	Rental rate of loaned copy of book	smallmoney	Minimum: \$2.50	No
ISBN	Identifies the book that is on loan	char(10)	Foreign key --> BookCopy (ISBN, CopyNo)	No
CopyNo	Identifies the copy of book that is on loan	tinyint	Foreign key --> BookCopy (ISBN, CopyNo)	No
MemberID	Identifies the member who loaned the copy of book	smallint	Foreign key --> Member (MemberID)	No

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**Additional constraint:**

Each member is entitled a maximum of five books for rental at any one time.