# Worksheet 1: Computer systems

**Task 1**

The computer system in a library has several subsystems.

* Stock control
* Loans
* Accounts
* Payroll

The loans sub-system has further sub-systems, performing the following functions:

* borrow books
* reserve books
* return books
* overdue books

The “reserve books” sub-system performs the following functions:

* update book file so that book cannot be borrowed by anyone else
* notify library user by email when book becomes available

Draw a structure chart showing the library system and sub-systems.

**Task 2**

The flowchart on the next page shows how the “Borrow books” sub-system works. Several statements are missing from the flowchart.

Complete the flowchart, **using item numbers only**, from the list below.

|  |  |
| --- | --- |
| **Item number** | **Description** |
| **1** | Finished? |
| **2** | Search file for borrower information |
| **3** | Display message “This book is reserved” |
| **4** | Display message “You already have the maximum books on loan” |
| **5** | Scan barcode on borrower’s card |
| **6** | Books on loan = maximum allowed? |
| **7** | Print slip listing titles and due dates for return |
| **8** | Is book reserved by another user? |
| **9** | Is the borrower ID in the file? |
| **10** | Scan barcode in book |
| **11** | Display error message “Invalid library card” |
| **12** | Display “Please remove card” |
| **13** | Update loans file with borrower and book details |

Start

End

No

No

No

No

Yes

Yes

Yes

Yes