

**1. Master Prints I.C.T. Project**

**Example Minor Project**

**Report**

**AS ICT**

**2000-2001**

## **2. Specification**

### **2.1 Statement of Problem**

#### **Master Prints Ltd**

Mary Jenkins runs her own printing company called Master Prints Ltd. She employs 15 full -time staff of which six are permanently based in the office. As the owner of the company she is responsible for organising day -to-day activities. One of the most time consuming tasks is the amount of paper work which has to be processed every day. Mary and the other workers in the office have found producing invoices and letters to customers takes up at least 50% of their time. Under the current system, when Mary needs to produce an invoice, she has to photocopy the standard form and begin to fill it in by hand. If a mistake is made during the completion of the form it must be thrown away and a new one copied. This can be very frustrating.

Mary would like a system which would save time and cut out many of the mistakes. She would also like a more professional image portrayed on the documents sent to customers.

### **2.2 User requirements**

From my investigations of the running of Master Prints I have found that the following is required. These requirements have been agreed with Mary Jenkins.

#### **1. Letter informing all customers of new charges.**

Approximately every six months Mary has to increase her charges and has to inform all her customers. The letter needs to include details of all new charges in a table, the customer's name and address, the date and who to contact if there are any queries. The name and address must be in a suitable place for window envelopes to be used.

#### **2. Letters informing customers of completed jobs.**

A letter is sent to all the customers whose jobs are ready for collection. The letter will need customer's name and address, date of order, job description and pick up details ie date and time. The name and address must be in a suitable place for window envelopes to be used. A record is kept of who has been informed of a completed job.

#### **3. Invoices**

After the collection of every order an invoice is produced and sent to the customer. It needs the customer's name and address, the date, the description of the job and the cost. It will involve calculating the number of copies x price per copy, totals, VAT and total including VAT. The name and address must be in a suitable place for window envelopes to be used.

#### **4. Easy to use system**

The office staff do not have many IT skills and will need menus or icons to help them use the system to carry out items 1 to 3 above.

#### **5. Corporate image**

As Master Prints is a business they must make a good impression on their customers. The invoice and all letters must promote a good professional corporate image. This could be achieved by using the same logo and heading on each one. The company's name, address and telephone number (email and Website) will be needed on all documents.

### **2.3 Outputs**

1. Letters to all customers every three months with the new prices
2. Send letters daily to customers whose orders have been completed
3. Send invoices daily to customers whose order have been collected
4. etc
- 5.

## 2.4 Inputs

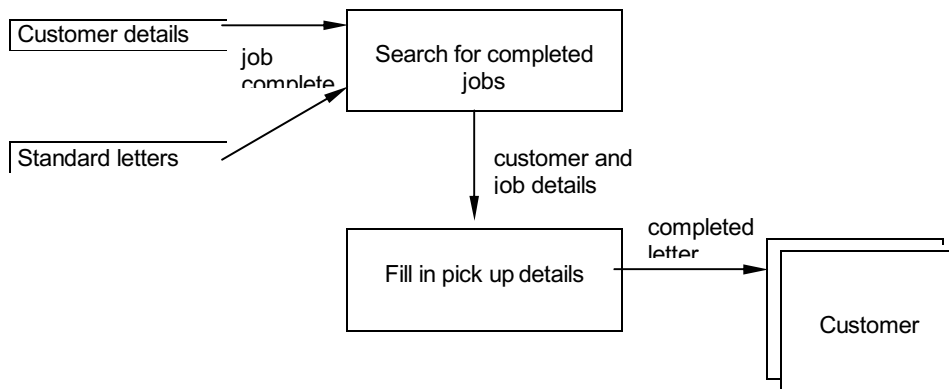
1. Names and addresses of all customers are needed as well as the new prices
2. Names and addresses of those particular customers whose orders have been completed that day. The date, job description, date of the order, pick update and time.
3. Names and addresses of customers who have collected their order and not paid, date, job description, calculated totals, VAT and total including VAT.
4. Etc.

## 2.5 Processing

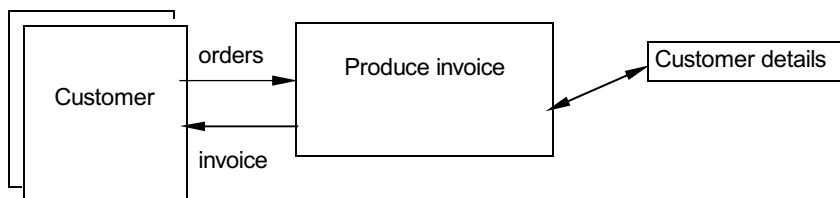
1. Change prices on prices template, merge this with the names and addresses of all the customers, print and send off.
2. Find customers names and addresses whose jobs have been completed that day and merge with a 'completed order' template. Print and send off and then update customer record to indicate letter has been sent
3. Find customers whose jobs have been collected and not invoiced and merge with the invoice template. Print and send off. Update customer records to indicate invoice sent.
4. Etc.

## 2.6 Flow diagrams (diagrams which show the above – here are some examples)

**Letter to inform customer that their order is ready for collection.**



## Invoices



## **2.7 Design**

### **2.7.1 List of IT sub-tasks**

1. Create the background template for the application.
2. Create the database for customer details.
3. Create the letter template for the new price list.
4. Create the letter template for informing customers that their order is ready.
5. Create the invoice template.
6. Create a menu system and customise toolbars for
  - a) adding new customers to/ deleting customer from or amending details of customers in the database
  - b) producing the price list letter for all customers
  - c) producing the order ready letter
  - d) producing invoices for a customer

### **2.7.2 Design – Background template**

*(A written description of what is required for this task and hand drawn designs with measurements, font and size, etc so that someone else could produce it on the computer – see photocopy of Sue's handdrawn design)*

### **2.7.3 Design – data source**

The different letters all need the customer's name and address. The individual letters also need other information as follows

- a) price list - none
- b) order ready letter - date of order, job description, pick up date and time
- c) invoices - date, job description, no of copies, price per copy (totals, VAT, etc are calculated automatically).

Therefore, for each customer record the following fields are needed  
Title, Initials, LastName, CompanyName, Address1, Address2, Address3, Address4, DateOfOrder, Description, NoOfCopies, CostPerCopy, Ready, PickUpDate, PickUpTime, Informed, Collected, Invoiced.

The fields Informed, Collected and Invoiced will allow easy -to-use mail merges to be set up.

The database will be called MasterPrints and the table tblCustomer.

*(A list of what data needs to be stored and a full table design with details of each field (type, length, etc) as well as defaults, validation, input masks, etc. is needed)*

### **2.7.4 Design – New Prices Letter**

The letter with new prices will be based on the background template. It will be saved as a template so that Master Print employees cannot change it by mistake. The template will be called Nprices.dot.

It needs to include the following: -

- customer's name and address (in correct position so window envelopes can be used)
- the date
- the text of the letter
- table of new charges
- who to contact in case of queries

A copy of my handdrawn design is overleaf. (see photocopy of Sue's handdrawn design)

#### **2.7.5 Design – next task etc**



## 2.8 Test Strategy and Plans

(A description of the test strategy – (for example)

- testing each task using test data and checking expected outcome with actual outcome
- getting other students to follow the user guide to check general operation of system
- getting the end user/s to follow the user guide to check for successful implementation of user requirements

The actual testing is carried out after the implementation when the Actual Outcome and Printout reference columns are filled in)

### 2.8.1 Test plan (and test data) for Background template

Test No	Test	Expected Outcome	Actual Outcome	Corrective Action if needed	Printout reference
1	Print off copy of template and check against handdrawn design making sure all company information is included	Template will match handdrawn design			

### 2.8.2 Test plan and test data for data source

Test No	Test	Expected Outcome	Actual Outcome	Corrective Action if needed	Printout reference
2	Enter the test data in set 1 below	All data can be entered			
3	Print out a copy of the test data	Data compares with test data			

### Test Data Set 1

Customer's name and address	Mr A G Black Green's Grocers 13 Pound Lane Eastleigh SO53 2FG	Mrs T J Jones Hartley's Electrical Stores 45 High Street Winchester Hampshire SO20 7TY	Miss F E Thompson Harry's Hairdressing 22 Green Lane Hedge End Hampshire SO53 6RE
Date of order	20/09/99	13/07/99	10/09/99
Description	Fliers	Sales booklet	Leaflets
No of copies	60	20	100
Cost per copy	0.15	1.40	0.12
Ready	No	Yes	Yes
Pick up date		27/07/99	30/09/99
Pick up time		10.00am	2.00pm
Informed		No	Yes
Collected		No	Yes
Invoiced			No
Customer's name and address	Mrs T A Black Celebratory Cards 3a St Pauls Close Eastleigh Hants SO53 5RT	Mr H Johnson Scott's Newsagents 42 High Street Fareham Hampshire SO54 7TY	Miss Y Smith Home Essentials 10 Grace Street Winchester Hampshire SO20 8YT
Date of order	27/09/99	20/09/99	12/09/99
Description	Invitation cards	Advertising leaflets	Fliers
No of copies	50	150	200
Cost per copy	0.50	0.10	0.10
Ready	No	Yes	Yes
Pick up date		27/09/99	20/09/99
Pick up time		11.00am	1.00pm
Informed		No	Yes
Collected		No	Yes
Invoiced			Yes

- a) This checks that there can be more than one Black, more than one Mr etc, more than one Eastleigh,
- b) Dates are entered and displayed correctly
- c) Pick up date etc are not required *(and anything else which can be checked at this stage)*



	Test Data 2	Test Data 3	Test Data 4
Customer's name and address	P E Black Fred's Sheds 43 Market Street Bishops Waltham SO44 8YU	Mr P E Black Fred's Sheds 43 Market Street Bishops Waltham SO4 8YU	Mr P E Black Fred's Sheds 43 Market Street Bishops Waltham Post code omitted
Date of order	20/09/99	20/09/99	20/09/99
Description	Fliers	Fliers	Fliers
No of copies	60	60	60
Cost per copy	0.15	0.15	0.15
Ready	No	No	No
Pick up date			
Pick up time			
Informed			
Collected			
Invoiced			

Test No	Test	Expected Outcome	Actual Outcome	Corrective Action if needed	Printout reference
4	Enter the test data set 2	Data is required in the Title field – error message			
5	Enter the test data set 3	Post Code is rejected – error message			
6	Enter the test data set 4	Post code cannot be left empty – error message			
7 -	Continue testing all input masks, validation, defaults etc				

### 2.8.3 Test Data and Plan – Price List

Test No	Test	Expected Outcome	Actual Outcome	Corrective Action if needed	Printout reference
..14	Start a document based on the New Prices template.	The document has all the details as expected and the document looks like the handdrawn design.			
15	Run the mail merge	Letters are printed to all 6 customers with the addresses in the correct place for window envelopes – Black, Jones, Thompson, Black, Johnson, Smith			

*(Plus all the tests for the other tasks)*

### **3. Implementation**

#### ***3.1 Implementation of Background template***

Describe what was done to make the template. Only include the 'interesting' things you did (not every small detail) such as inserting the graphic using link not save and why. Have a page with screen shots to which you refer to show anything interesting.

(To get a screen shot press the Print Screen key on the top right of the keyboard and if you want a picture of the whole screen open up a new word document and paste it in. Select it and put it in a frame. Add any more shots you want. If you only want part of the screen paste it into Paintbrush, outline the bit you want and copy and paste it into a Word document. Do NOT paste any screen shots into your report as they take up so much backing storage you will run out. Print off the page of screen shots when it is complete and then close the word document without saving it).

#### ***3.2 Implementation of Data source***

#### ***3.3 Implementation of New Prices Letter etc***

#### ***3.4 Summary of hardware and software facilities used and reasons for choice***







## 4. Testing

### 4.1 Testing of Background template

Test No	Test	Expected Outcome	Actual Outcome	Corrective action if needed	Printout reference
1	Print off copy of template and check against handdrawn design making sure all company information is included	Template will match handdrawn design	Address on Background template did not appear in correct place.	This was moved and the template and reprinted.	Test Print 1  Test Print 2

### 4.2 Testing of Data source

Test No	Test	Expected Outcome	Actual Outcome	Corrective action if needed	Printout reference
2	Enter the test data in set 1 below	All data can be entered	Black could not be entered twice.	I had to change the Indexed entry to Duplicates OK. Black could then be entered.	Test Screenshot 1
3	Print out a copy of the test data	Data compares with test data	Data compared with test data		Test Printout 3
4	Enter the test data set 2	Data is required in the Title field – error message	Error message appeared		Test Screenshot 2
5	Enter the test data set 3	Post Code is rejected – error message	Error message appeared		Test Screenshot 3
6	Enter the test data set 4	Post code cannot be left empty – error message	Error message appeared		Test Screenshot 4
7 -	Continue testing all input masks, validation, defaults etc	etc	etc		etc

### 4.3 Testing New Prices Letter etc





## 5. Evaluation

### 5.1 Evaluation criteria

### 5.2 Evaluation against user requirements

For **each User Requirement** consider the following and how you will find out whether each statement is true.

*Have you achieved the objective of the user requirement eg does the letter contain all the new prices in a table and include all the information required by the user?*  
*Does it work - every time?*

### 5.3 Evaluation of performance indicators

*How long does it take? (i.e. takes x seconds to produce an invoice whereas old system took y minutes)*  
*Is it accurate - e.g. in a selective mail merge does it produce output for the right people? ie does it send invoices/order collection letters to the right people*

### The Overall System

*Does it have a consistent customised feel i.e. consistent 'House Style' to promote corporate image?*  
*Is it simple and easy to operate? (customisation of HCI and provision of a User Guide)*  
*Does it benefit the end user? Is it better than their current system?*  
*Is it easy to maintain? i.e. can the user easily add new clients, delete old ones, make changes to letters.*  
*Is it easy to transfer to the user's computer?*

## 6. User Documentation

*A User Guide is needed to show how to USE the system (NOT how to create it). Imagine a friend who has not used Word is going to work for Master Prints Ltd and produce a document which would enable them to add customers and orders, send invoices, send new pricing letters, send order ready letters , etc. For the User Guide it is necessary to include screen shots - this help to confirm that the user is doing the right things.*

*The User Guide needs to show the user how to  
load up your new system  
add a customer and order  
print off an 'order ready' letter for that customer  
produce an invoice  
remove a customer and order etc*

At the beginning of each season the team Treasurer has the responsibility of sending letters to local Business Members, asking for a donation of a ball sponsor. This enables them to have their company or business advertised at the game in which the ball is played it also helps the club in the buying of balls. Another letter is also sent to local businesses asking if they are interested in the purchase of an advertising board, situated upon the ground in full view to again advertise their business or company but on a more permanent basis throughout the summer months.

From the letter a reply slip is attached which is returned to the Treasures home with full payment or sponsor, purchase or both. If they do not reply, send a payment or sponsor then the company or Persons are removed from a categorised list in which the Treasurer has collected in the winter months. New companies and Persons can then be added at any time of the year, if they do reply to the annual letters then they are called upon every year after whilst the system is in motion.

At each club A.G.M the ball sponsor and owners of advertising boards are invited formally through a letter along with new and old members. A sheet of the minutes of the last meeting as well as an agenda is passed around for the members to read and sign, the guests are also entitled to read the information.

To the back of each playing members agenda a voting slip is attached enabling the playing members of the club to vote for a new seasons Captain.

An annual awards evening is also held towards the end of September. Members of the club are sent order forms and they must make a note of how many people each member intends to bring. This needs to be filled in and returned to the Treasures home with a payment by the middle of September.

### 6.1.1 Current system in detail

Mr Preece would like a computerised system, which sorts member's information alphabetically. He also wants somewhere, where he will be able to store Sponsor and Buyer's addresses that can be filtered and processed automatically. As well as this he would like an area where he can store and calculate his donations and purchases in which he receives.

Mr Preece the Treasurer would also like a system which would save time, cut out many mistakes and make the file, records and letters look professional as well as neat and tidy. Mr Preece mentioned, "the system created must make the clubs work and files look presentable as well as professional, up-to-date and understandable."

At the moment the Treasurer of the club does much of the paperwork by hand. He has hardback folders to store his information in. Much of the information contains personal notes about members and

sponsors of the club. These details are stored in hardback folders in a draw in the Treasurers home. With little security these files are likely to go astray. Financial matters also concerning the club are stored in files. "Losing the records would mean a great time, effort and ability wasted as well as exposed."

None of the files are categorised so there is no easy and efficient nature in which to use them. Looking for the correct information is done by hand and takes up large spaces of time.

Much of the filed work is written and presented on normal A4 lined paper. There is no concise layout on presentable headed paper. This makes the folders look untidy and unable to be presented to Solicitors or Lawyers if needs be. With the files written by hand, over the years it has become hard to read the files as other Treasurers handwriting has differed. Being word-processed would allow you to read and create the records with ease.

Files and records about St Levan Cricket Club from years ago are stored in cardboard boxes locked away in a cupboard. These records are not stored on an organised system but in an inefficient and unapproachable way. If the Treasurer wanted to, he could store the records on a computer system, which would enable him to gain basic background information and historical knowledge of the club. This isn't an important task yet one that could add to the advantages of using a computerised system.

Annually hand written letters are sent to ball sponsors and advertising board buyers saying thanks for their co-operation in the task at hand as well as a reminder that the club will be calling on them again next season as well as the coming one for their help. These letters are also photocopied or written by hand!

A letter is also sent to a local Inn where the club hold their annual Awards Evening. This asks if the club would be allowed to use their services for another year once the season is over. Once on reply the Treasurer is either asked to pay a visit to its Landlady where she agrees prices and foods as well as entertainment. Or the Treasurer has to find another place where the club would be able to hold their Awards Evening.

After every annual A.G.M the Treasurer has to go home and count up the votes for the seasons new Captain. This isn't done automatically but by hand which takes the Treasurer quite a while, as he has to tally each playing member.

### **6.1.2 Inputs, Processes and Outputs**

Inputs:

(Information applied to the system in which the Treasurer uses to run the club.)

#### **Member's information.**

Addresses and named information about the playing members of the club. Stored in an alphabetical and processed format.

#### **Sponsors and Buyers information.**

Addresses of the Sponsors and Buyers of advertising boards stored in an alphabetical and processed format.

#### **Donations of ball sponsors.**

A list of people in categorised order that have sponsored a ball, along with the amount donated.

#### **Purchase of advertising boards.**

A list of business members in categorised order that have bought an advertising board with the amount each business has paid.

#### **Replies to letters.**

y:\svn\trunk\engine\docs\working\working\2055.doc

Those that reply to the letters about sponsors or buying advertising boards are kept on the list, yet those that don't are taken off the list. More businesses or Persons are then researched and added throughout the year to perhaps receive an informal letter later on towards the beginning of the cricket season.

#### **Completed in ordering forms.**

Order forms are sent to members to fill in and return with the amount of people they would like to bring to the annual awards evening for a meal. The Treasurer who in turn adds to a categorised list of the clubs members the number of people they intend to bring with them.

#### **Completed voting forms.**

Voting forms for the clubs Captain are completed at the A.G.M. On the night the Treasurer then adds the votes up and announces the results a week later on the first night of team training. Those that have voted are deleted from a categorised list.

#### **Outputs:**

(Results that are processed from the computer.)

#### **Letters of promotion.**

Letters to try and sell advertising boards and ball sponsors are processed and sent to business members and Persons of the society. An informal letter is also sent to those that are added to the list later on in the season.

#### **Reply slips.**

To the back of each letter a reply slip is attached to allow a full payment with agreement of purchase or sponsor by the business or businessman.

#### **Voting slips.**

Attached to each playing member's agenda is a voting slip, which is processed to allow club members to vote for the season's captain.

#### **Agenda for club A.G.M**

An agenda for the A.G.M is processed to create a rough guide for the members and visitors of the meeting, hopefully showing them what it will entail.

#### **Minutes of the last meeting.**

A list is processed as a reminder of what happened and what was discussed last time the club held an A.G.M.

#### **Booking forms for Awards Evening.**

An order form is processed and sent to members of the club and asked to be filled in and returned to the Treasurer with the amount of tickets each member would like to buy.

#### **Letter to Landlady of local Inn**

A letter is sent to the Landlady of the Cable Station Inn, where the club asks if they could hire the hall for the Awards Evening.

#### **Processes:**

(What the computerised system will do for its User.)

#### **Create list of Players.**

To create lists of all playing members of the club who have paid membership for the season.

#### **Categorise information.**

Member's information can be processed into alphabetical order to make it easier to complete searches when for members who have or haven't paid for their club membership for example.

**Store Documents.**

Information about, members, for example their names, address and telephone numbers can be stored and saved into files upon the database. Saving files also means work can be saved so the Treasurer will always have spare copies.

**Search for information and documents.**

Such as searching for a playing member of the club and retrieving their details.

**Mail Merge letters of promotion.**

Inserting Buyers and sponsors addresses onto a document in preparation to send promotional letters.

**Mail Merge Players identity after club voting.**

Inserting member's votes onto a categorised sheet of playing members to examine results of votes.

**6.1.3 Flow diagrams ( diagrams which show the above.)****6.1.4 User requirements**

From my investigations of the running of St Levan Cricket Club, I have discovered that for a successful club these following requirements are needed. These requirements have been agreed with the club Treasurer Mr Preece.

**Easy to use system.**

The Treasurer doesn't have many IT skills and will need menus as well as instructions to help him carry out the obvious tasks as well as the tasks below. The system must be understandable and easy to use as well as precise and accurate.

**Ability to store members, sponsors and buyers details.**

For example their names, addresses and telephone numbers. The system should be able to hold all the details in categorised order.

**Letters of Promotion with details automatically filled in.**

Letters will need to be produced to be sent to Businesses of the local society asking if they would wish to either purchase an advertising board or sponsor a ball for a match.

**Letters of thanks with details automatically filled in.**

During about the middle of September a letter of Thanks will need to be sent to all the Businesses and Persons who have participated in the running of the club, by the purchase of an advertising board or sponsor of a ball. The letter can be quite informal but does need emphasis on the thanks as well as the fact that the club will be calling on them again next season for their input and help.

**Corporate image.**

St Levan Cricket Club is a well respected and highly run image of society, therefore their letters must promote a good professional image. This needs to be achieved by using the same logo and heading upon each letter and the clubs telephone number and address posted upon each one as well.

**Realise of new Captains identity.**

After the voting slips have been mail merged a letter needs to be created to be posted to the Business members and Persons who have taken interest in the club. This just shows that the club plan to keep the Sponsors and Buyers in contact with St Levan Cricket Club. A notification also needs to be posted on the changing room notice board at the first training match of the year. The Treasurer will also announce the results so everyone is aware of the possible change.

**Automatically produce various lists of membership.**

The club needs to know when memberships are due to be paid. Lists also need to be produced showing which members have or haven't paid for their club membership.