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Appendix A – Physical Design of the WMPCS Database

```sql
CREATE TABLE IF NOT EXISTS `#__wmpcs_categories` (
 `category_id` bigint(20) NOT NULL AUTO_INCREMENT,
 `cname` text NOT NULL,
 `rep_id` bigint(20) NOT NULL,
 UNIQUE KEY `category_id` (`category_id`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_workflow` (
 `worklfow` bigint(20) NOT NULL AUTO_INCREMENT,
 `wname` text NOT NULL,
 UNIQUE KEY `worklfow` (`worklfow`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_emailmsg` (
 `id` int(11) NOT NULL AUTO_INCREMENT,
 `type` text NOT NULL,
 `subject` text NOT NULL,
 `body` longtext NOT NULL,
 PRIMARY KEY (`id`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_notes` (
 `note_id` int(11) NOT NULL AUTO_INCREMENT,
 `id` bigint(20) NOT NULL,
 `note` longtext NOT NULL,
 `adddate` datetime NOT NULL,
 `uid` text NOT NULL,
 `priv` int(11) NOT NULL,
```

```sql
  PRIMARY KEY (`note_id`),
  FULLTEXT KEY `note` (`note`))
CREATE TABLE IF NOT EXISTS `#__wmpcs_attachments` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `note_id` int(11) NOT NULL,
  `name` text NOT NULL,
  `type` text NOT NULL,
  `size` int(11) NOT NULL,
  `content` MEDIUMBLOB NOT NULL,
  PRIMARY KEY(`id`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_priority` (
  `priority_id` bigint(20) NOT NULL AUTO_INCREMENT,
  `pname` text NOT NULL,
  UNIQUE KEY `priority_id` (`priority_id`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_projects` (
  `id` bigint(20) NOT NULL AUTO_INCREMENT,
  `uid` text NOT NULL,
  `uemail` text NOT NULL,
  `ulocation` text NOT NULL,
  `uphone` text NOT NULL,
  `rep` bigint(20) NOT NULL,
  `status` bigint(20) NOT NULL,
  `time_spent` bigint(20) NOT NULL,
  `category` bigint(20) NOT NULL,
  `close_date` datetime NOT NULL,
```

```sql
`Worklfow` bigint(20) NOT NULL,

`title` text NOT NULL,

`description` text NOT NULL,

`solution` text NOT NULL,

`start_date` datetime NOT NULL,

`priority` bigint(20) NOT NULL,

`entered_by` bigint(20) NOT NULL,

`kb` bigint(20) NOT NULL,

UNIQUE KEY `id` (`id`),

KEY `rep` (`rep`,`status`,`category`,`Worklfow`,`priority`),

FULLTEXT KEY `solution` (`solution`),

FULLTEXT KEY `description` (`description`),

FULLTEXT KEY `title` (`title`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_status` (

`id` int(11) NOT NULL AUTO_INCREMENT,

`status_id` bigint(20) NOT NULL,

`sname` text NOT NULL,

PRIMARY KEY (`id`))


CREATE TABLE IF NOT EXISTS `#__wmpcs_users` (

`id` int(11) NOT NULL AUTO_INCREMENT,

`joomla_id` int(11) NOT NULL,

`isuser` int(11) NOT NULL,

`isrep` int(11) NOT NULL,

`isadmin` int(11) NOT NULL,

`phone` text NOT NULL,
```

```
`address` text NOT NULL,

`Workflow` bigint(20) NOT NULL,

`viewreports` int(11) NOT NULL,

UNIQUE KEY `id` (`id`))
```
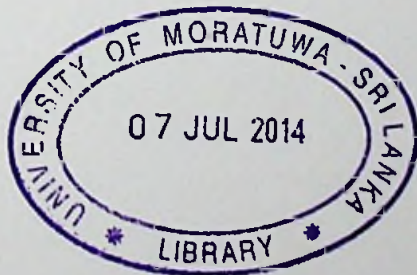
Appendix B – Test Cases Used in evaluating WMPCS

No	Test Data	Expected Result	Actual Result	Conclusion
1	Save the submission when a required text field is empty	Operation must be rejected	Message Box – Empty text field	Achieved
2	Enter alphabetical values in a number only field	Operation should not be permitted	Alphabetical characters disabled	Achieved
4	Enter numbers in alphabetic-only fields Eg. Name	Operation should not be permitted	Numbers disabled automatically	Achieved
5	Enter symbols in alphabetic-only fields Eg. Name	Operation should not be permitted	Symbols disabled automatically	Achieved
6	Enter symbols for necessary fields Eg. Sam's	Required symbol must be allowed	Only necessary symbol activated	Achieved
19	Copy and paste digits to character only fields	System should not allow to place	Pasting option inactivated	Achieved
20	Copy digits and press CTRL+V in char only fields	System should not allow to place	CTRL+V is disabled in the field	Achieved
21	Enter space for number only fields	Space should be allowed to insert	Space key disabled for digits field	Achieved
22	Fill with spaces for character only fields	Space should not be accepted	Message Box – Invalid Input	Achieved
23	Leave spaces between words Eg. Bell Labs	System should accept the input	Value accepted	Achieved

25	Load the system without the database	System should not load the software	Msg - Database connection error	Achieved
26	Remove a required table from the database	System should not load the interface	Msg - Database connection error	Achieved
27	Failure in the webhost	System should not load the System website	Msg - Connection error	Achieved
28	Failure in the network	System should not load the System website	Msg - Connection error	Achieved
29	Retrieve data which does not exists	System should inform the user	Msg Box - Record does not exist	Achieved
31	Delete button pressed accidentally	System should confirm the Delete	Msg Box - Confirm the Delete	Achieved
33	Username is empty (Login)	System should not allow to login	Msg Box - Username is empty	Achieved
34	Password is empty	System should not allow to login	Msg Box - Password is empty	Achieved
35	Username and password are empty	System should not allow to login	Msg Box- Both are empty	Achieved
36	Incorrect username	System should not allow to login	Msg Box - Invalid username	Achieved
37	Incorrect password	System should not allow to login	Msg Box - Invalid password	Achieved
38	Incorrect username and password	System should not allow to login	Msg Box - Both are invalid	Achieved

39	Correct username and password	System should allow to login	Select the system's Operation	Achieved
40	Attach .jpg,.png,.txt,.pdf within maximum is 16MB	System should allow	File accept and attached to project	Achieved
41	Attach .exe file	System should not allow	Attachment error	Achieved
42	Attach file more that size 16 MB	System should not allow	Attachment error	Achieved
43	External tool Links	System should open popup window	Links open	Achieved
43	Pages navigation	Relevant interfaces open when click the buttons	Interfaces open	Achieved
44	Workflow & status change	When forword System should change the status workflow	Workflow change graphic update and status change	Achieved
45	Project assigned	System should assigned project to the correct loging	Assigned list will shows the new project	Achieved