# Homework #6 Retrospect

- Most changes were to View and Controller, if you (wisely) used the MVC pattern

  – View was restructured to return user responses from dialogs rather than simply printing text

  – Controller swapped streams for dialogs

- Main initialized Gtk

- Slight change to Publication::to_string() to better fit within the dialog

# Full Credit
# Changes to view.h

Homework #5

```cpp
class View {
  public:
    View(Library& lib);
    void show_menu();
    void list_publications();
    void list_patrons();
    void help();
  private:
    Library& library;
};
```

Homework #6

```cpp
class View {
  public:
    View(Library& lib);
    int select_from_menu();
    void list_publications();
    int select_publication();
    void list_patrons();
    int select_patron();
    int select_genre();
    int select_age();
    int select_media();
    void help();
  private:
    string get_publications();
    string get_patrons();
    Library& library;
};
```

# Full Credit
# view.cpp
## Selected Code

```cpp
int View::select_from_menu() {
    string menu = R"( … )";
    string result = Dialogs::input(menu, "Main Menu");
    try {
        return (result == "CANCEL") ? 0 : stoi(result);
    } catch (...) {
        return -1;
    }
}
```

```cpp
string View::get_publications() {
    string publications = "";
    for (int i=0; i<library.number_of_publications(); ++i) {
        publications += to_string(i) + ") " + library.publication_to_string(i) + '\n';
    }
    return publications;
}
void View::list_publications() {
    Dialogs::message(get_publications(), "List of Library Publications");
}
int View::select_publication() {
    string result = Dialogs::input(get_publications(), "Select a Publication");
    try {
        return (result == "CANCEL") ? -1 : stoi(result);
    } catch (...) {
        Dialogs::message("Invalid entry - please type an integer");
    }
}
```

# Full Credit
# controller.cpp
## Selected Code

No changes to controller.h

```cpp
void Controller::execute_cmd(int cmd) {
  if (cmd == 1) { // Add publication
    string title, author, copyright, isbn;
    int genre, media, age;
    bool cancel = false;

    title = Dialogs::input("Title?");
    if (title == "CANCEL") cancel = true;

    if (!cancel) author = Dialogs::input("Author?");
    if (author == "CANCEL") cancel = true;

    if (!cancel) copyright = Dialogs::input("Copyright date?");
    if (copyright == "CANCEL") cancel = true;

    if (!cancel) genre = view.select_genre();
    if (genre < 0) cancel = true;

    if (!cancel) media = view.select_media();
    if (media < 0) cancel = true;

    if (!cancel) age = view.select_age();
    if (age < 0) cancel = true;

    if (!cancel) isbn = Dialogs::input("ISBN?");
    if (isbn == "CANCEL") cancel = true;

    if (!cancel) library.add_publication(
        Publication(title, author, copyright, genre, media, age, isbn));
```

# Bonus
# Changes to Dialogs.cpp

## Full Credit

```cpp
// A request for a line of text input
string Dialogs::input(string msg, string
title, string default_text,
            string cancel_text) {
    Gtk::Dialog *dialog =
                new Gtk::Dialog();
    dialog->set_title(title);

    Gtk::Label *label =
                new Gtk::Label(msg);

    dialog->get_content_area()
        ->pack_start(*label);
    label->show();

    dialog->add_button("Cancel", 0);
    dialog->add_button("OK", 1);
    dialog->set_default_response(1);

    Gtk::Entry *entry = new Gtk::Entry{};
    entry->set_text(default_text);
    entry->set_max_length(50);
    entry->show();
    dialog->get_vbox()->pack_start(*entry);

    int result = dialog->run();
// ...
```

## Bonus

```cpp
// A request for a line of text input
string Dialogs::input(string msg, string
title, string default_text,
            string cancel_text) {
    Gtk::Dialog *dialog =
                new Gtk::Dialog();
    dialog->set_title(title);

    Gtk::Label *label =
                new Gtk::Label(msg);
    label->set_use_markup(true);
    dialog->get_content_area()
        ->pack_start(*label);
    label->show();

    dialog->add_button("Cancel", 0);
    dialog->add_button("OK", 1);
    dialog->set_default_response(1);

    Gtk::Entry *entry = new Gtk::Entry{};
    entry->set_text(default_text);
    entry->set_max_length(50);
    entry->show();
    dialog->get_vbox()->pack_start(*entry);

    int result = dialog->run();
// ...
```

**Enable Pango**

# Bonus
# Changes to view.cpp

### Full Credit

```
int View::select_from_menu() {
  string menu = R"(
================================
CSE1325 Library Management System
================================

Publications
-----------
(1) Add publication
(2) List all publications
(3) Check out publication
(4) Check in publication

Patrons
-------
(5) Add patron
(6) List all patrons

Utility
-------
(9) Help
(0) Exit

)";
```

### Bonus

```
int View::select_from_menu() {
  string menu = R"(
<span font='18' weight='bold'>
        CSE1325
Library Management
System<sup><small>TM</small></sup></span>

<span weight='bold'
underline='double'>Publications</span>
(1) Add publication
(2) List all publications
(3) Check out publication
(4) Check in publication

<span weight='bold'
underline='double'>Patrons</span>
(5) Add patron
(6) List all patrons

<span weight='bold'
underline='double'>Utility</span>
<span color='#007f00'><b>(9)
Help</b></span>
(0) Exit

)";
```
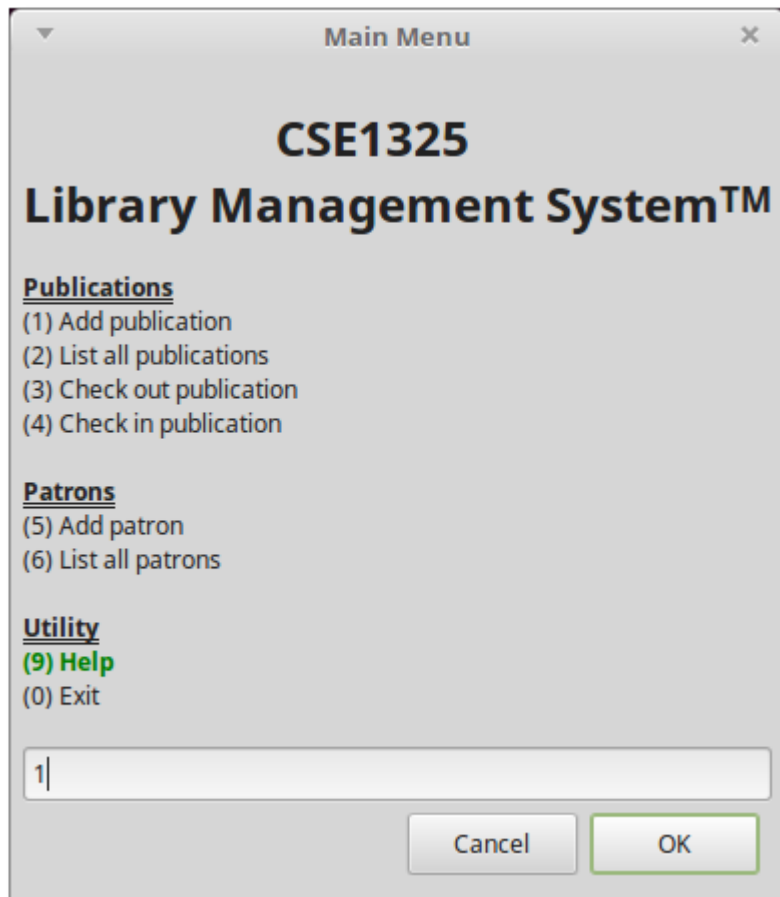
# Bonus
# Changes to view.cpp

## The Presentation

Main Menu

**CSE1325**
**Library Management System™**

**Publications**
(1) Add publication
(2) List all publications
(3) Check out publication
(4) Check in publication

**Patrons**
(5) Add patron
(6) List all patrons

**Utility**
(9) Help
(0) Exit

1

Cancel    OK

## Bonus

```cpp
int View::select_from_menu() {
    string menu = R"(
<span font='18' weight='bold'>
       ❶  CSE1325              ❷
Library Management
System<sup><small>TM</small></sup></span>
       ❸        ❹

<span weight='bold'
underline='double'>Publications</span>
       ❺
(1) Add publication
(2) List all publications
(3) Check out publication
(4) Check in publication

<span weight='bold'
underline='double'>Patrons</span>
(5) Add patron
(6) List all patrons

<span weight='bold'
underline='double'>Utility</span>
<span color='#007f00'><b>(9)
Help</b></span>              ❻
(0) Exit

)";
```

**Six tags!**

No changes to controller.h

```
void Controller::execute_cmd(int cmd) {
  if (cmd == 1) { // Add publication
     string title, author, copyright, isbn;
     int genre, media, age;

     Gtk::Dialog *dialog = new Gtk::Dialog();
     dialog->set_title("Create Publication");

     // Title
     Gtk::HBox b_title;     // For the label ("Title:") and text Entry

     Gtk::Label l_title{"Title:"};
     l_title.set_width_chars(15);
     b_title.pack_start(l_title, Gtk::PACK_SHRINK);

     Gtk::Entry e_title;
     e_title.set_max_length(50);
     b_title.pack_start(e_title, Gtk::PACK_SHRINK);
     dialog->get_vbox()->pack_start(b_title, Gtk::PACK_SHRINK); // Add Title to Dialog

// And so on for each of the remaining 4 text entry data fields
```

```cpp
    // Genre
    Gtk::HBox b_genre;   // The HBox to hold the label ("Genre") and drop-down

    Gtk::Label l_genre{"Genre:"};
    l_genre.set_width_chars(15);
    b_genre.pack_start(l_genre, Gtk::PACK_SHRINK);

    Gtk::ComboBoxText c_genre;    // Drop-down with simple text labels
    c_genre.set_size_request(160);
    c_genre.append("Fiction");
    c_genre.append("Non-fiction");
    c_genre.append("Self Help");
    c_genre.append("Performance");
    b_genre.pack_start(c_genre, Gtk::PACK_SHRINK);
    dialog->get_vbox()->pack_start(b_genre, Gtk::PACK_SHRINK);

// And so on for each of the remaining 2 drop-down entry data fields
```

**Create Publication**

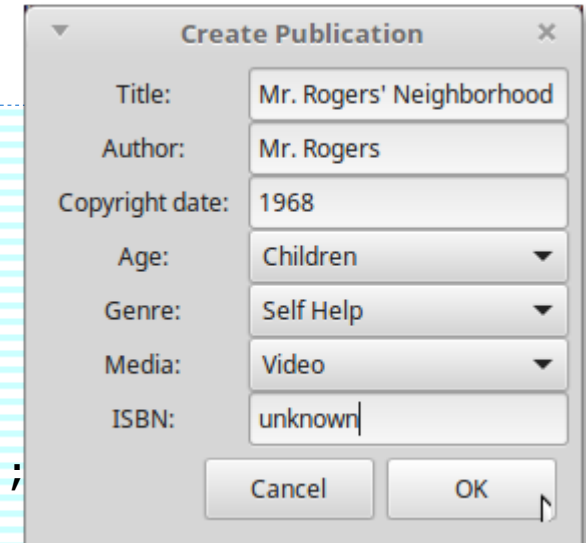| | |
|---|---|
| Title: | Mr. Rogers' Neighborhood |
| Author: | Mr. Rogers |
| Copyright date: | 1968 |
| Age: | Children ▼ |
| Genre: | Self Help ▼ |
| Media: | Video ▼ |
| ISBN: | unknown |

Cancel    OK

```cpp
// Show dialog
dialog->add_button("Cancel", 0);
dialog->add_button("OK", 1);
dialog->show_all();
int result = dialog->run();

dialog->close();
while (Gtk::Main::events_pending())  Gtk::Main::iteration();

title = e_title.get_text();
author = e_author.get_text();
copyright = e_copyright.get_text();
age = c_age.get_active_row_number();
genre = c_genre.get_active_row_number();
media = c_media.get_active_row_number();
isbn = e_isbn.get_text();

if (result == 1) library.add_publication(
    Publication(title, author, copyright, genre, media, age, isbn));
```