

# Arcade

B-00P-400

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LE FUTUR DE L'INFORMATIQUE  
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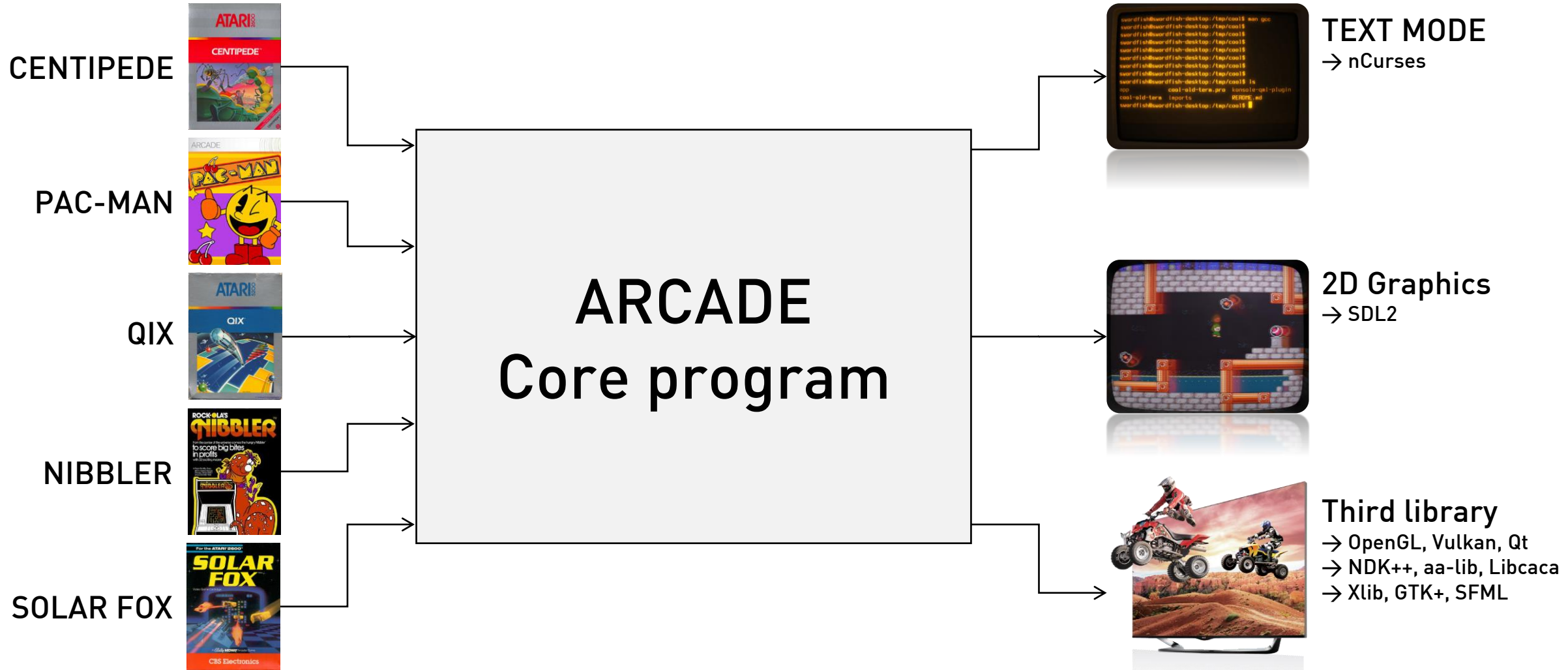
# ARCADE

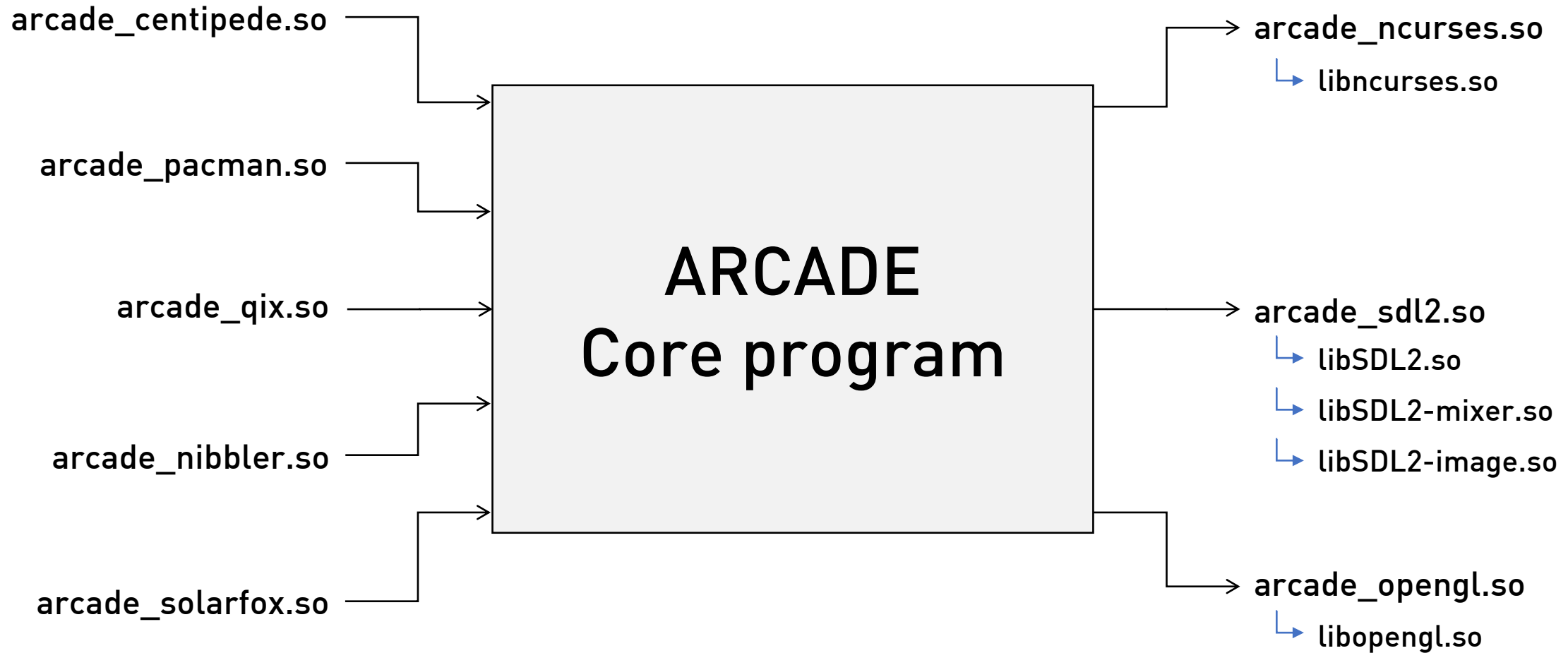
**Duration :** 5 weeks  
**Group size :** 2-3 students  
**Language :** C++

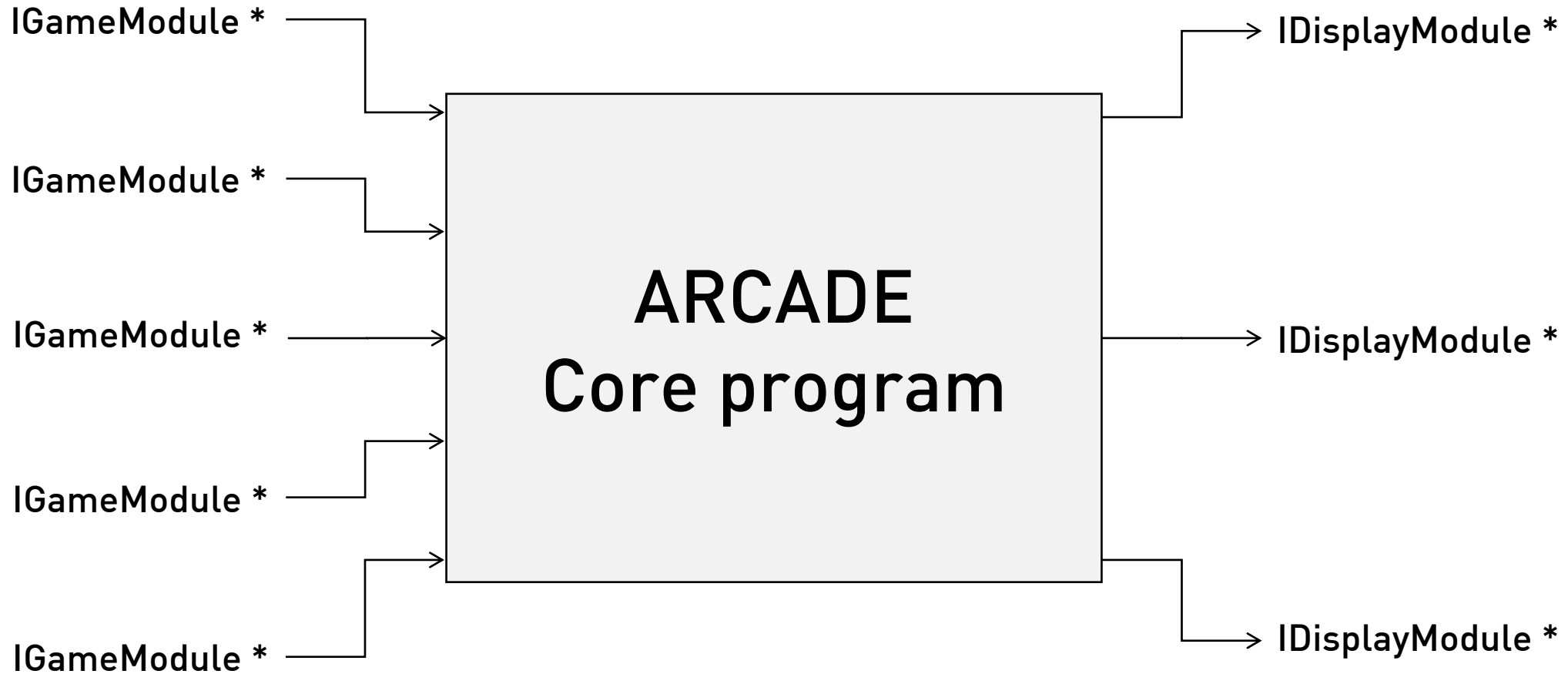
« How to play to any game on any graphic environment »











## DYNAMIC LINKING LIBRARY `libdl`

- `void *dlopen(const char *filename, int flag) :`
  - load the library in process memory
  - call its constructor *(optionnal)*
  - return a handle *(void \*)*
- `void *dlsym(void *handle, const char *symbol) :`
  - find a symbol by its name in the library
  - return a pointer to the symbol
- `void *dlclose(void *handle) :`
  - close the library
  - call its destructor *(optionnal)*



# DYNAMIC LINKING LIBRARY `libdl`

- Use a common symbol name in your library as an entry point :

```
extern "C"
{
    [...]    entry_point()
    {
        // Get an instance of the game/graphic environment
        return new [...];
    }
}
```

- `libdl` is a C library, you **must** provide an encapsulation.

# GAME & GRAPHIC CLASS INTERFACE

- Define an interface that could handle any of your games :
  - Should it contains the game loop ?
  - Should it manage inputs ?
  - Should it be linked in any way to a graphic library ?
- Define an interface that could handle any graphic library :
  - Is it in charge of the input management ?
  - Should support Ncurses as well as OpenGL.
  - Should we handle advanced graphics for our simple games ?
- Create a core program (Arcade) :
  - Should be able to run any game with any graphic library.
  - Should transmit the informations from one to another.
  - Should not be dynamically linked to any game/graphic library.

```
class IGameModule;
```

```
class IDisplayModule;
```



# GAME & GRAPHIC CLASS INTERFACE

- Conception :
  - Design your interfaces with at least one other group.
  - Debate and discuss your interfaces.
  - You must provide a documentation.
- Implementation :
  - Each group should implement its own games and graphic libraries.
  - You should be able to run your core program with the libraries from at least one other group.
  - Enjoy yourself !

The background is an abstract composition of various shades of blue, ranging from deep navy to bright cyan. It features sharp, angular, and overlapping geometric shapes that create a sense of depth and movement, reminiscent of a crystalline structure or a futuristic architectural design. The lighting is dramatic, with highlights and shadows that emphasize the three-dimensional quality of the forms.

# QUESTIONS ?

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