Impl Display For Group

Materia: Taller de Programación I
Curso: Deymonnaz

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Impl Display For Group

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Repositorio de Trabajo

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Índice

Introducción

Objetivo

Proyecto IRC (Internet Rust Chat)

➔ Internet Relay Chat Protocol

Alcance

- Parseo de mensajes
- Comunicación Cliente - Servidor
- Soporte para múltiples servidores
- Ejecución de mensajes
- Interfaz Gráfica
- Persistencia de datos
- Testing

¿Cómo levantar el proyecto?

Levantar el proyecto

- cargo run **server** *<puerto>*
- cargo run **client** *<ip cliente> <puerto server>*
- cargo run **server-connect** *<puerto nuevo server> <ip server a conectar> <puerto server a conectar> <contraseña>*

Diagrama de clases

Impl Display For Group

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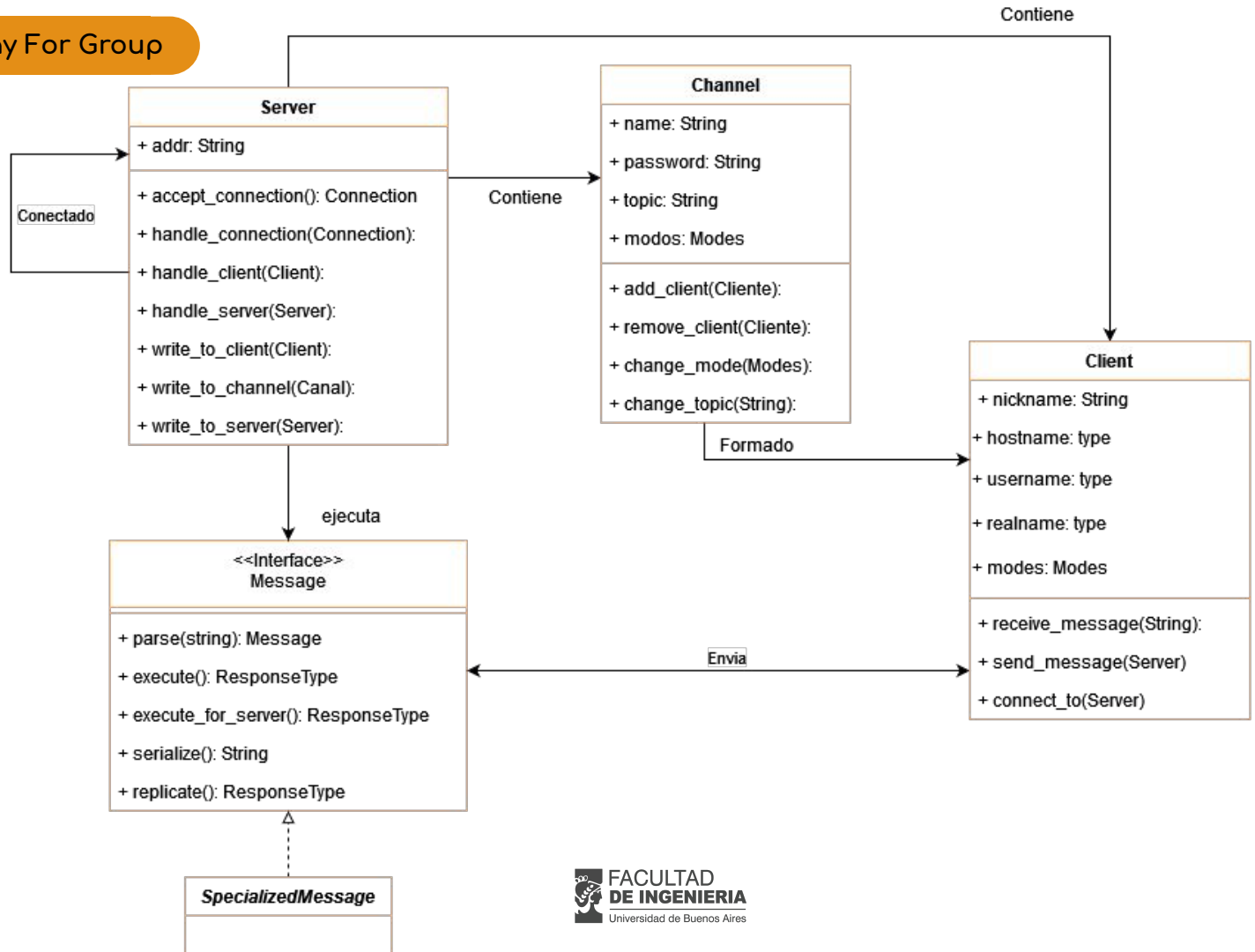

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Diagramas de Secuencia

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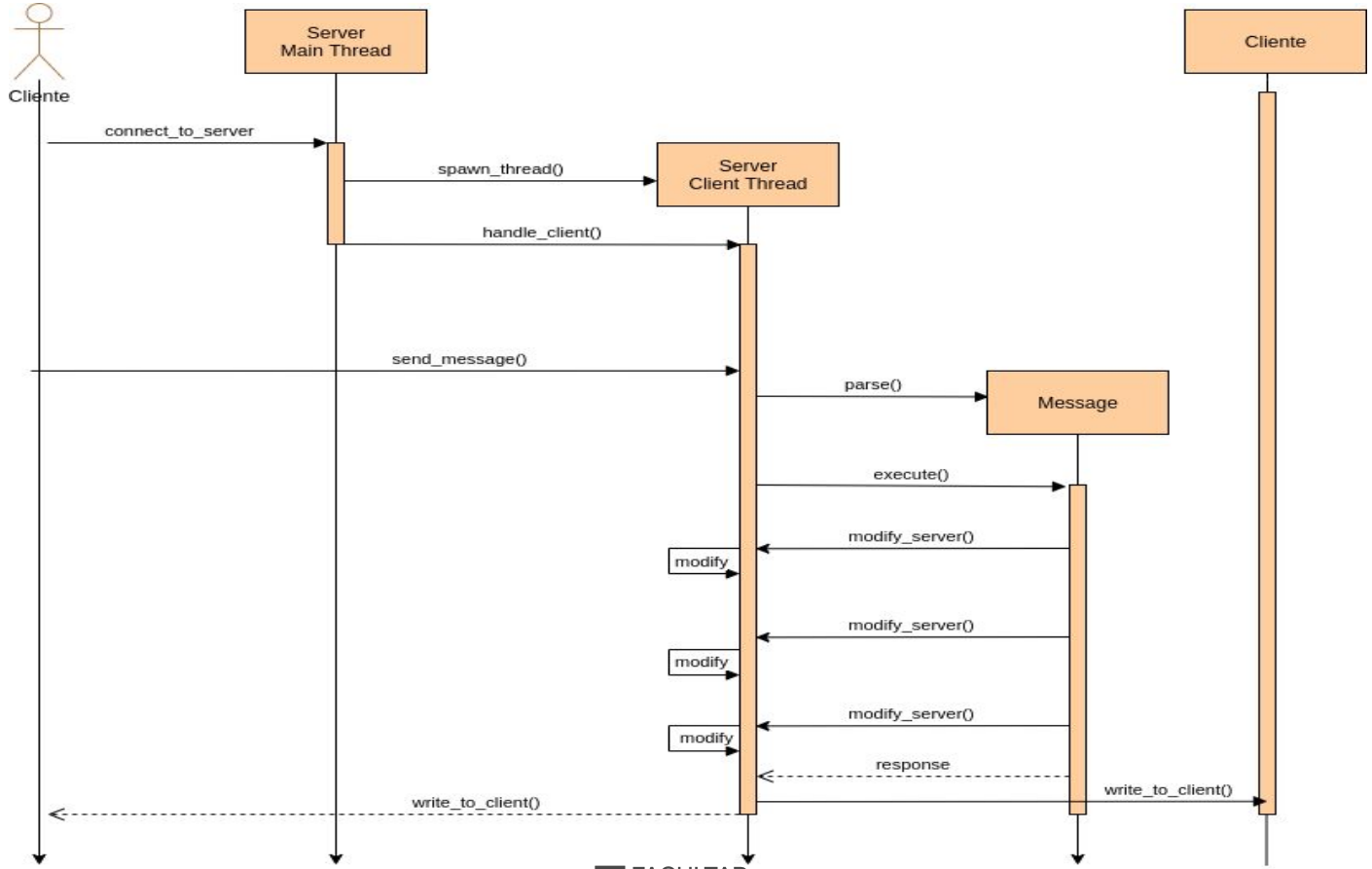

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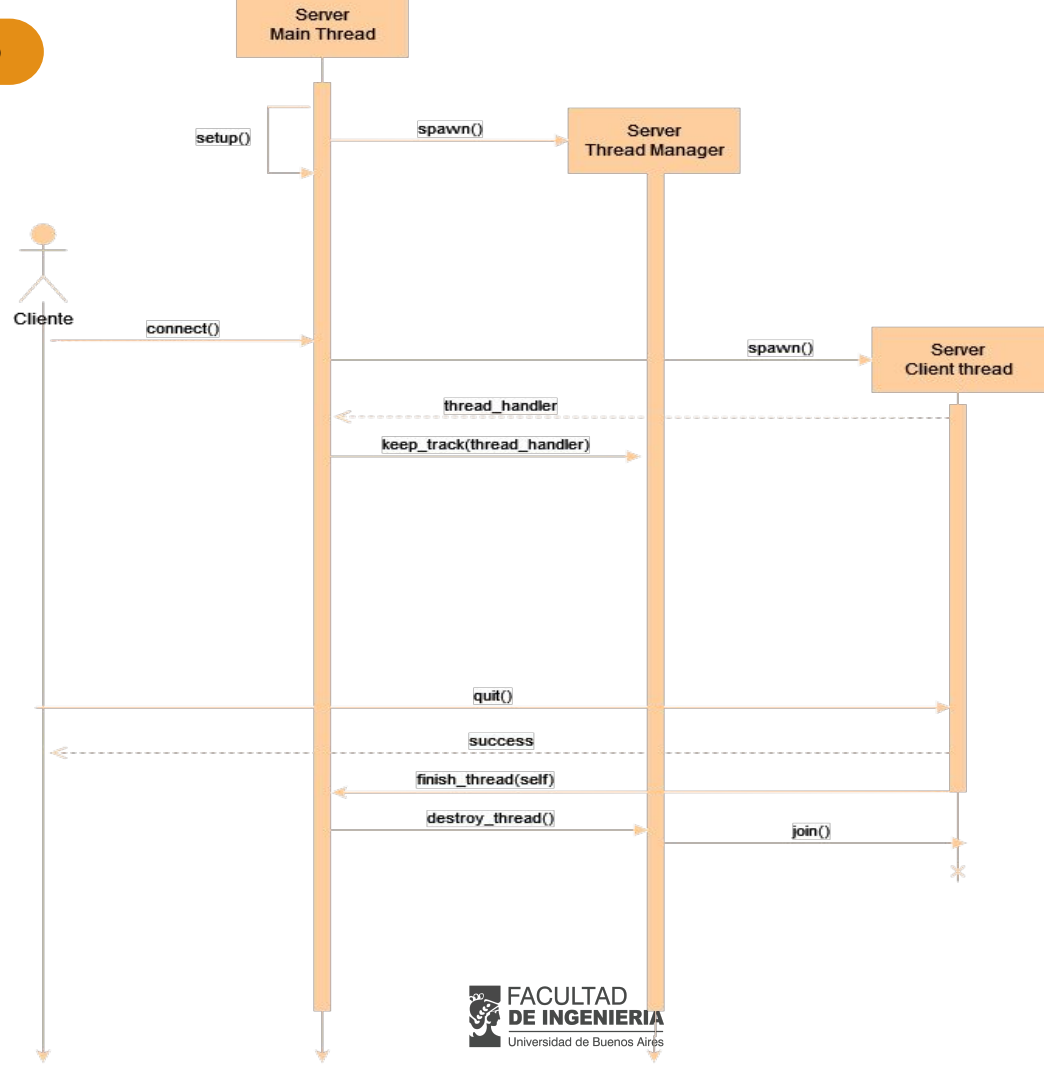

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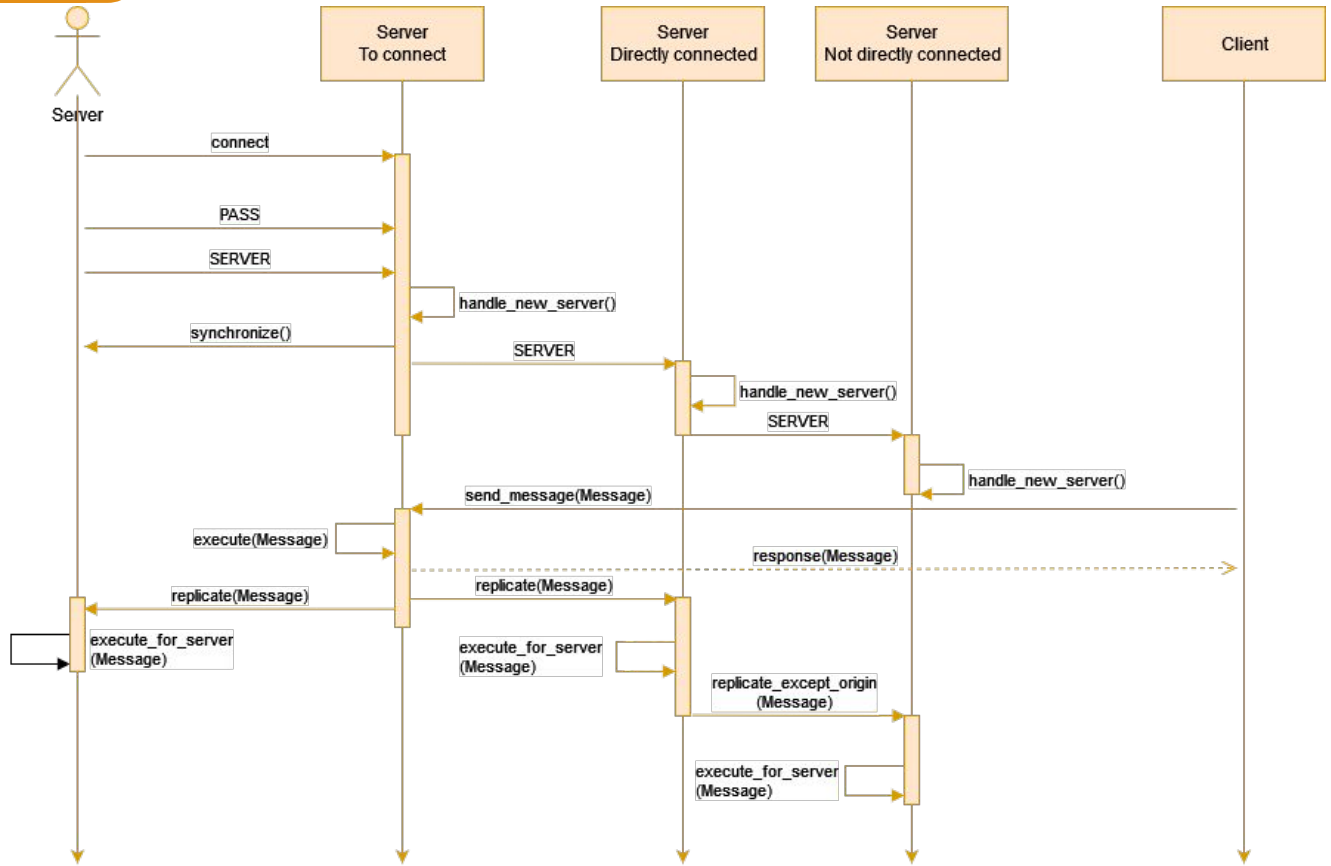

Back - Un poco del cómo...

Impl Display For Group

```rust
impl<'a> FromGeneric<'a> for Oper<'a> {
    fn from_generic(mut generic: GenericMessage<'a>) -> Result<Self, MessageError> {
        (...)
        Ok(Self { user, password })
    }
}
```

```rust
pub struct GenericMessage<'a> {
    pub command: Command,
    pub prefix: Option<&'a [u8]>,
    pub parameters: VecDeque<&'a [u8]>,
}
```

```rust
pub struct Oper<'a> {
    pub user: &'a [u8],
    pub password: &'a [u8],
}
```

```rust
pub enum MessageError {
    EmptyMessage,
    MessageTooLong,
    InvalidCommand,
    InvalidFormat,
    InvalidHostmask,
    TooManyParams,
    IRCDefined(usize),
}
```


Impl Display For Group

```rust
impl Executable for List<'_> {
    fn _execute(&self, server: &Server, client: Arc<Mutex<Client>>) -> Vec<ResponseType> {
        let mut response = ResponseBuilder::new();
        response = response.add_content_for_response(RPL_LISTSTART, "Channel :Users  Name".to_owned());

        let desc_list = match &self.channels {
        (...)
        for desc in desc_list {
            response = response.add_content_for_response(RPL_LIST, desc);
        }

        response = response.add_content_for_response(RPL_LISTEND, "End of /LIST".to_owned());
        response.build()

}
```

```rust
pub struct ResponseBuilder {
    numeric_response: Vec<usize>,
    content: HashMap<usize, Vec<String>>,
    internal_response: Vec<InternalType>,
}
```

```rust
pub enum ResponseType {
    NoResponse,
    Code(usize),
    Content(Response),
    InternalResponse(InternalType),
}
```


Impl Display For Group

```rust
pub struct Replicability{
  client_response: Vec<ResponseType>,
  should_replicate: bool
}

pub trait Replicable: Serializable {
    fn inner_execute(&self, server: &Server, client: MTClient) -> Replicability;

    fn execute(&self, server: &Server, client: MTClient) -> Vec<ResponseType> {
        let response = self.inner_execute(server, client);
        let forward = append_origin_client(self.serialize(), client);
        if response.should_replicate{
            server.replicate_to_all_servers(&forward);
        }
        response.client_response
    }
}

impl Server {
  pub fn replicate_to_all(&self, message: &str) {
        for server_connection in self.sv_connections.values() {
            if server_connection.hopcount == 1 {
                server_connection.write_line(message);
            }
        }
    }
}
```


Impl Display For Group

```
pub trait ServerExecutable: Serializable{
    fn inner_execute_for_server(&self, server: &Server) -> Vec<ResponseType>;

    fn forward(&self, _: &Server, _: &MTServerConnection) -> String {
        self.serialize()
    }

    fn replicate(&self, server: &Server, origin: MTServerConnection) {
        let forward = self.forward(server, &origin);
        server.replicate_to_all_servers_except_origin(&forward, &origin.servername);
    }

    fn execute_for_server(&self, server: &Server, origin: MTServerConnection) -> Vec<ResponseType> {
        let res = self.inner_execute_for_server(server);
        self.replicate(server, origin);
        res
    }
}

impl Server {
  pub fn replicate_to_all_servers_sans_origin(&self, message: &str, origin: &str) {
        for server_connection in self.sv_connections.values() {
            if server_connection.hopcount == 1 && server_connection.servername != origin {
                server_connection.write_line(message);
            }
        }
    }
}
```


Impl Display For Group

```
impl Server {
  fn launch_persistency_thread(server: Arc<Server>, tx: Sender<ServerCommand>) ->
  (JoinHandle<()>,Arc<(Mutex<bool>, Condvar)>)
  {
        let exited = Arc::new((Mutex::new(false), Condvar::new()));
        let pair = exited.clone();
        (thread::spawn(move || {
            let (lock, cvar) = &*exited;
            let mut exited = try_lock!(lock);
            loop {
                match cvar.wait_timeout(exited, Duration::from_secs(PERSIST_TIMER)) {
                    Ok((v, _)) => {
                        exited = v;
                        if *exited {
                            break;
                        }
                        persist_notice(server.clone(), tx.clone());
                    }
                    Err(e) => {
                        exited = e.into_inner().0;
                    }
                }
            }
        }), pair)
    }
}
```


Front - Un poco del cómo...

Impl Display For Group

```
let (tx2, rx2) = channel();
```

```
run_app(tx1, rx2);
```


```
let (tx1, rx1) = channel();
```


Impl Display For Group

```rust
fn send_message_from_entry(tx: Arc<Sender<String>>, e: &Entry) -> Result<String, SendError<String>> {
    let mssg = String::from(e.text());
    e.set_text("");
    match tx.send(mssg.to_owned()) {
        Ok(_) => Ok(mssg),
        Err(e) => Err(e),
    }
}
```


Impl Display For Group

```rust
fn receive_from_server(rx: Arc<Receiver<String>>) -> Vec<String> {
    let mut responses: Vec<String> = Vec::new();
    while let Ok(response) = rx.recv_timeout(time::Duration::from_millis(100)){
        responses.push(response);
    }
    responses
}
```


Impl Display For Group

```
    // Responses del Server
    glib::timeout_add_local(time::Duration::from_millis(200), move || {
        let text = check_responses(r.clone());
        let title = w.title().unwrap_or_else(|| GString::from(""));
        if !title.contains(" - ") {
            let nick = check_nickname(&text);
            if !nick.is_empty() { w.set_title(&format!("{} - {}", title, nick)) }
        }
        if !text.is_empty() { append_on_buffer(b.clone(), &text); }
        Continue(true)
    });
```


Impl Display For Group

```
// Build Channels
glib::timeout_add_local(time::Duration::from_secs(3), move || {
    check_channels(t.clone(), r.clone(), &c);
    Continue(true)
});
```


Impl Display For Group

```
    clistbox.connect_add(move |_clistbox: &ListBox, widget: &Widget| {
        let button_widget = w.downcast::<gtk::Button>().expect("Couldn't get button for channel");
        button_widget.connect_clicked(clone!(@weak button_widget => move |_|
            let cname = button_widget.label().expect("Couldn't get name for channel").to_string();

            // Limpio Pantalla
            set_text_on_buffer(bb.clone(), "");

            // Pongo el titulo del channel
            cc.set_text(&cname);

            // Escucho por usuarios del channel
            glib::timeout_add_local(time::Duration::from_secs(3), move || {
                check_users_for_channel(ttt.clone(), rrr.clone(), uuu.clone(), cname.to_owned());
                Continue(true)
            });
        ));
    });
```


Demo time!

Bibliografía

Bibliografía

- RFC1459
- docs.rs
- rust-by-example
- GTK introduction
- Material del curso

¿Preguntas?