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INTRODUCTION

PURPOSE

- Content aware rescale
- Improve Gimp application

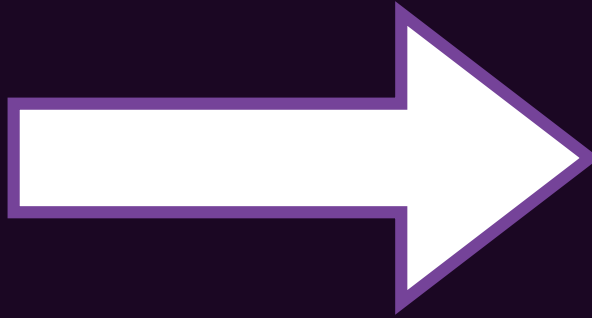
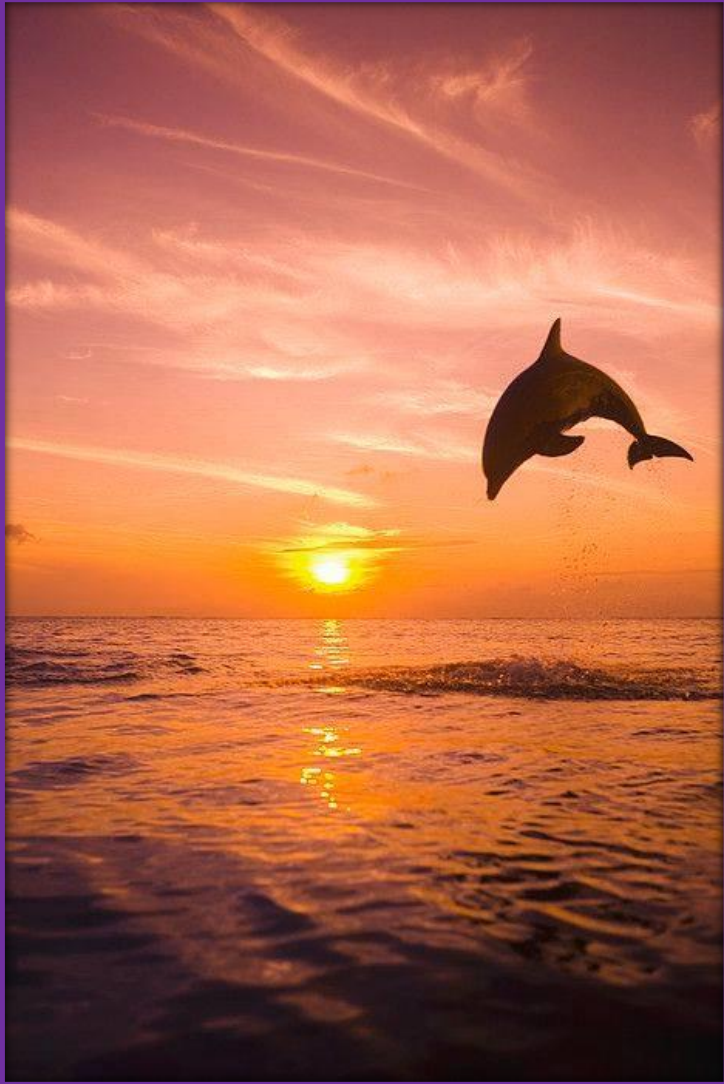
SCOPE

- Rescale Application
- Scale image

BACKGROUND

- Mitsubishi Electric Research Labs
- GIMP application hard to use

EXAMPLE



SEAM CARVING ALGORITHM

- ❖ Dynamic Programming
- ❖ Determines least significant seam
- ❖ Uses pixel energy comparison
- ❖ Deletes or creates seam
- ❖ Content aware image resizing





DESIGN

C++

- Visual Studio Code
- Native C++

Liquid
Rescale

- Open source C/C++ library
- liblqr-1-0

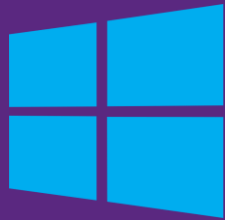
GUI

- GTKmm library with GLib2.0
- Glade UI design

CHALLENGES FACED

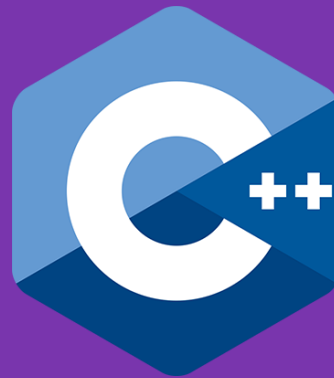
Changed
Operating
Systems

CHALLENGE 1



C++ new
language

CHALLENGE 2



CPPunit
Testing

CHALLENGE 3



REQUIREMENTS

Functional

1. Input
2. Output
3. Functionality

Non Functional

- | | |
|---------------|-------------------|
| 1. Appearance | 5. Performance |
| 2. Usability | 6. Installability |
| 3. Safety | 7. Portability |
| 4. Privacy | 8. Learning |



DEMO

CONCLUSION

- ❖ Performs content aware image resizing
- ❖ User-friendly GUI
- ❖ Highly portable