



# Team e10

3D Scanner





# Project Overview

Create a "virtual storybook" of the Slavery in the Old South collection so that a wider audience can experience the story and gain a deeper understanding of that period in our American history.

*Aubrey Tharpe*



# Team Members

Aubrey Tharpe  
(Team Leader)

Rachelle Dauphin  
(Secretary)

Taylor Wagner  
(Lead Programmer)

Nicolas Cardenas  
(Fiscal Officer)

*Aubrey Tharpe*



# Code of Conduct

- o Communication Protocols
- o Conflict Resolution
- o Team Dynamics
- o Team Ethics



# Functional Requirements

- The device must be capable of scanning a range of sizes from small objects (i.e. dolls) to large objects (i.e. beds or rooms).
- The device must effectively isolate objects from the background.

# Non-Functional Requirements

- The mesh objects must be in a format that is compatible with 3D modeling software.





# Needs vs Wants

Requirements Capabilities	REQF-001	REQF-002	REQF-003	REQN-001
CAP-01	X	X	X	
CAP-02				X
CAP-03				X
CAP-04				x

*Taylor Wagner*



# Constraints

- The budget of the overall project is a maximum of \$500.
- Computational requirements must not exceed capabilities of an average computer
- System must not be operationally complex
- Maintenance should not require expert knowledge





# Capabilities Testing Plan

TESTC-0001: Render a 3D Image of a Small Object

- object is less than two cubic feet

TESTC-0002: Render a 3D Image of Medium Object

- object that is between two and seventy-five cubic feet

TESTC-0003: Render a 3D Image of a Large Object

- object that is more than seventy-five cubic feet



# Requirement Test Plan

TESTR-0001: 3D mesh is usable in 3D modeling software

- Have 3D mesh be compatible with industry standard modeling format.



# Constraints Test Plan

TESTP-0001: Render and Time analysis

- Determine the number of hours to generate a 3D mesh

TESTP-0002: Simplicity

- Determine the minimal number of instructions to complete the process

TESTP-0003: Maintenance analysis

- What parts of the device require 3rd party services

*Rachelle Dauphin*



# Budget

Software(\$150):

- VisualSFM
- Meshlab
- Blender

Hardware(\$350):

- Camera
- 3D scanner
- Contraption for pictures

*Nick Cardenas*



# Schedule

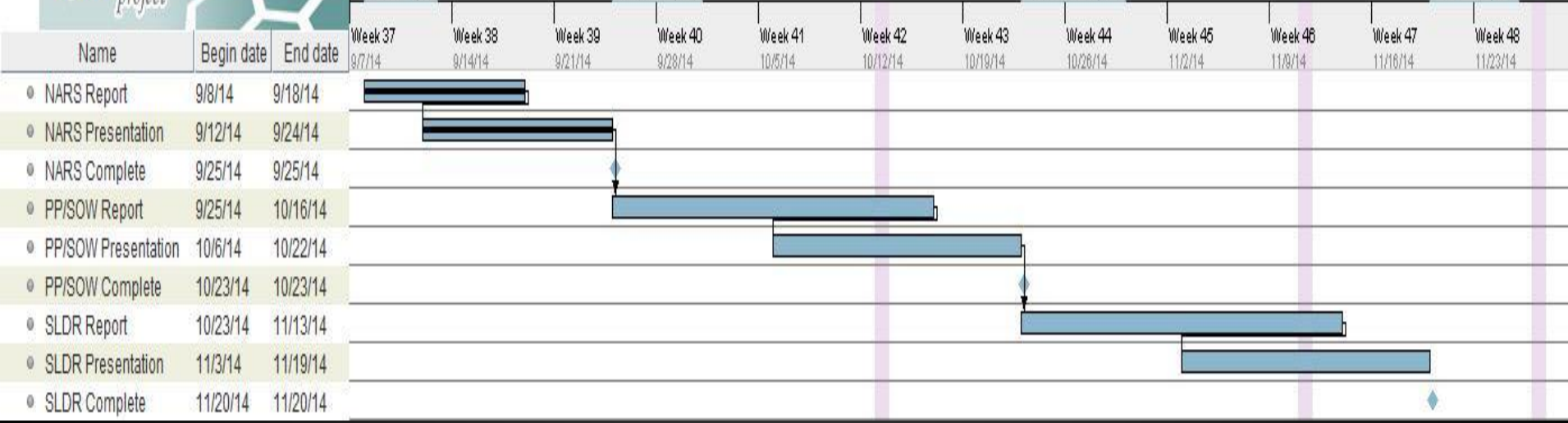
- Fall 2014 (The Planning):
  - Equipment required
  - Learning software
  - Picture taking
- Spring 2015:
  - Learn more about software
  - Sample tests
  - Complete project

# Schedule



2014

NARS Report      NARS Complete      PP/SOW Complete      SLDR Complete



Nick Cardenas



# Risks and mitigation

Risk:

Damage to priceless artifacts from handling

Mitigation:

Treat all artifacts with respect and care



# Risks and mitigation

Risk:

Damage to priceless artifacts from the device

Mitigation:

Use only low voltage systems



# Questions?



*Aubrey Tharpe*