FUNCTIONAL SPECIFICATION DOCUMENT

<BUILD A MICROSITE FOR NASA>

DOCUMENT VERSION <X.X>

<07.04.2019>

AUTHORS

Name	Role	Department
Jørgen Årnes	Project Manager/Business Analyst/ UX & UI designer / Front-End Developer	Noroff

DOCUMENT HISTORY

Date	Version	Document Revision Description	Document Author

APPROVALS

Approval Date	Approved Version	Approver Role	Approver

Table of Contents

1. Introduction

1.1 NASA has decided to build a Microsite to raise awareness about space program activity around the world. This microsite is not meant to cover all content but as an addition to the existing website with focus on the World Space Programs like International Space Station, Launces and so forth.

1.2 Purpose of the document

The Functional Specification Document is a document that provides detailed information on *how* the system solution will function and the requested behavior. This document is created based on the high-level requirements identified in the Business Requirements Document and provides traceability on the functional specifications back to the business requirements. Included in this document will be the detailed functional requirements including use cases, system inputs and outputs, process flows, diagrams, and mock ups.

1.3 Project Scope

The expected deliverables and milestones for the project are listed on the Project plan and Gantt chart.

1.4 Scope of the document

<If there are multiple FSDs created for the project, describe the specific scope that this document will address. Sections 1.2 and 1.3 can be combined together>.

1.4 Related documents

<Add any related documentation that is relevant and related to the FSD. Some examples are the Project Charter, Business Requirements Document, etc.>.

Component	Name (with link to the document)	Description

1.5 Terms/Acronyms and Definitions

<State any terms and its definition that are described in the functional specifications. Include any acronyms that are mentioned in the document.>

Term/Acronym	Definition	Description
ISS	International Space Station	

1.6 Risks and Assumptions

Some of the deliverables might be delayed due to new features the developer haven't learned yet and therefor need to learn before he can move on to the next tasks in the project. Although some delay may occur, the developer has not set the actual deadline for the project because he want to see if he's still able to speed up the work.

2. System/ Solution Overview

2.1 Context Diagram/ Interface Diagram/ Data Flow Diagram, Application Screen Flow, Sitemap, Process Flow

<Provide any appropriate graphical representations that are relevant to the system and project such as a context/interface/data flow diagram, application screen flow, site map, or process flow. Add as many as needed.>

2.2 System Actors

2.2.1 User Roles and Responsibilities / Authority Requirements

User/Role	Example	Frequency of Use	Security/Access, Features Used	Additional Notes
- Students - Engineer - Stakeholders - Business Head of Departments - Technical Heads of Departments - Financial Managers	*<include examples of real people in the role>*	*Frequent, Occasional*	*<describe the features of the system available for the role and any security/access permissions that should be stated>*	*<add any additional notes or supporting documentation as necessary>*

2.3 Dependencies and Change Impacts

2.3.1 System Dependencies

<List and identify any dependencies the proposed solution will have on other systems.>

2.3.2 Change Impacts

<List and identify existing systems that will be impacted by the implementation of the proposed solution.>

3. Functional Specifications

<Start describing the specifications related to the overall system here. You may want to create a table/ index of all functionalities explained in the sections below and link them to the items below>

<If no separate reference/ traceability document is created for the project, use this section to map the business requirements, use cases, functional requirements and the test cases>

<Group your functional specifications as appropriate for your project. You may want to divide them by screens, functional areas, user role, JIRA tickets or high-level functions Vs detailed functions or any other way that works for your project>

3.1 < Build a microsite >

3.1.1 Purpose/ Description

< Build a microsite for NASA that focus on space technology. >

3.1.2 Use case

<Map the functional requirement to one or more use cases mentioned in the Business Requirements document. If the use case is not described in detail in the Business Requirements document, describe the use case here. This typically includes the element s in the following table.>

UC-1	Signifier on the Navigation menu
Primary Actor(s)	*Students, Engineers, Stakeholders*
Stakeholders and Interest	*<One sentence describing other stakeholders>*
Trigger	Affordance of a navigation bar which get triggered when the mouse is hovered over
Pre-conditions	*<Condition assumed to be true before the first step>*
Post-conditions	The signifier end when the mouse cursor is moved away from the navigation area.
Main Success Scenario	1. *Enter one of Nasa's microsite pages* 2. *Move your mouse cursor over one of the navigation buttons* 3. The button signifies for successful hidden affordance with a different background color or shade.
Extensions	If Condition, then Alternative Steps
Priority	*<indicate priority of high, medium or low)*
Special Requirements	*<Any system related special requirements needed to fulfill the use case>*
Open Questions	*<Notes and questions>*

UC-2	Links on the Navigation menu
Primary Actor(s)	*Students, Engineers, Stakeholders*

Stakeholders and Interest	*<One sentence describing other stakeholders>*
Trigger	A single mouse click leads the user to another page
Pre-conditions	*<Condition assumed to be true before the first step>*
Post-conditions	The user is successfully sent to another page
Main Success Scenario	1. *Enter one of Nasa's microsite pages.* 2. *Click on one of the navigation buttons*
Extensions	If Condition, then Alternative Steps
Priority	*<indicate priority of high, medium or low)*
Special Requirements	*<Any system related special requirements needed to fulfill the use case>*
Open Questions	*<Notes and questions>*

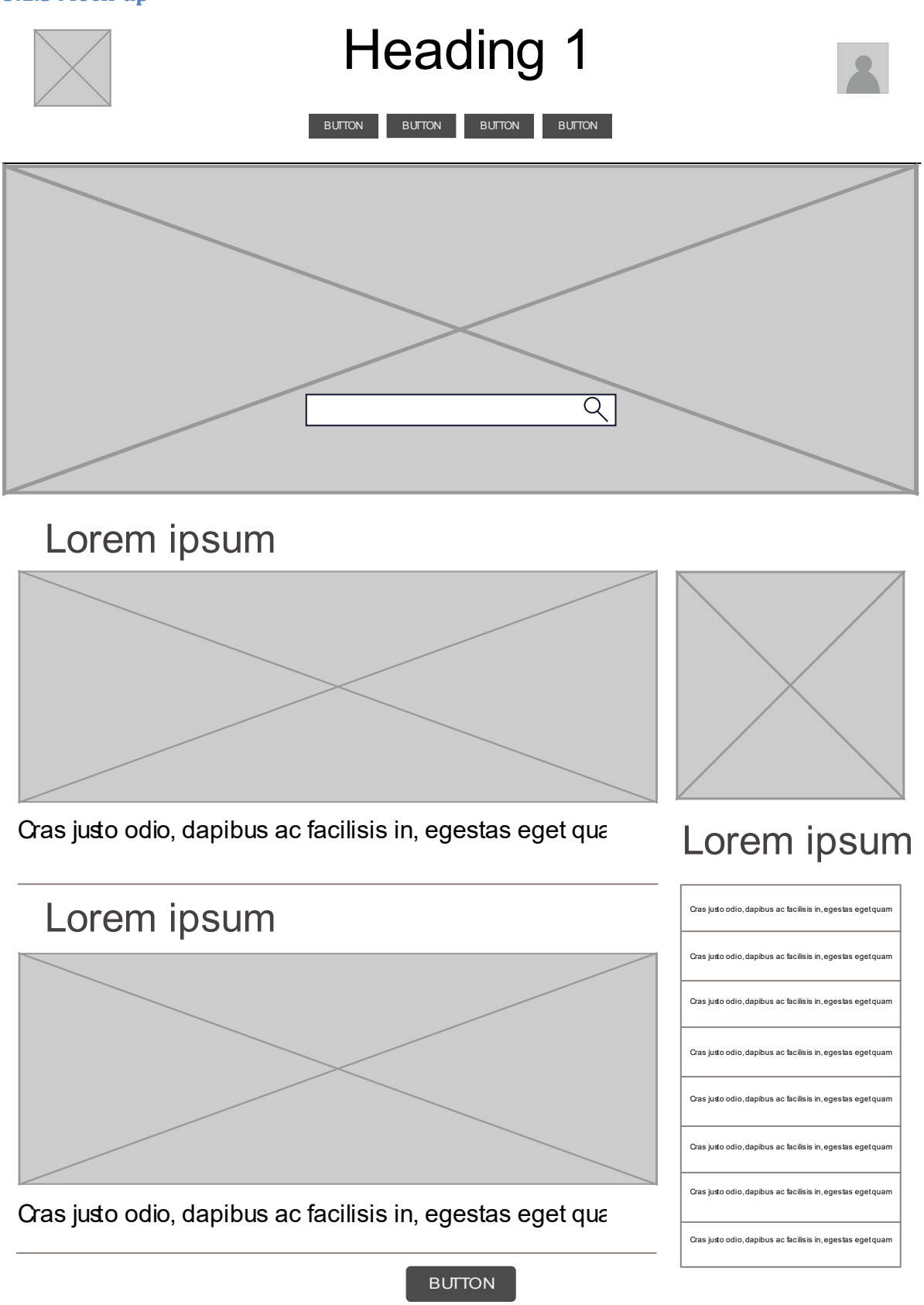
UC-3	**The user can search with the search bar**
Primary Actor(s)	*Students, Engineers, Stakeholders*
Stakeholders and Interest	*<One sentence describing other stakeholders>*
Trigger	*The mouse cursor changes to the text cursor when it's hovering over the search bar and when it's clicked on we can write on the input field*
Pre-conditions	*<Condition assumed to be true before the first step>*
Post-conditions	*Characters like letters, numbers and other symbols appears when we write on the input fields*
Main Success Scenario	1. *Enter one of Nasa's microsite pages*. 2. Click on the search bar. 3. Make a search by writing something
Extensions	If Condition, then Alternative Steps
Priority	*<indicate priority of high, medium or low)*
Special Requirements	*<Any system related special requirements needed to fulfill the use case>*
Open Questions	*<Notes and questions>*

UC-4	**The user can contact NASA through their contact form**
Primary Actor(s)	*Students, Engineers, Stakeholders*
Stakeholders and Interest	*<One sentence describing other stakeholders>*
Trigger	*<Condition/action that initiates/starts the use-case>*
Pre-conditions	*<Condition assumed to be true before the first step>*
Post-conditions	*<Condition after the use case is successfully executed >*
Main Success Scenario	1. *Enter Nasa's contact page* 2. Fill in the at least the required fields *3.* Write your message *4. Send the message by clicking on the send button*
Extensions	If Condition, then Alternative Steps
Priority	*<indicate priority of high, medium or low)*
Special Requirements	*<Any system related special requirements needed to fulfill the use case>*
Open Questions	*<Notes and questions>*

UC-5	**The user can view a schedule or timeline of previous rocket launches and upcoming ones as well as other space program activities**
Primary Actor(s)	*Students, Engineers, Stakeholders*
Stakeholders and Interest	*<One sentence describing other stakeholders>*
Trigger	*<Condition/action that initiates/starts the use-case>*
Pre-conditions	*<Condition assumed to be true before the first step>*
Post-conditions	*<Condition after the use case is successfully executed >*
Main Success Scenario	1. From one of Nasa's microsite pages click on the "Space program" button at the navigation panel. 2. scroll up and down to see space program activities.
Extensions	If Condition, then Alternative Steps Click on one of the links from the microsite home page.
Priority	*<indicate priority of high, medium or low)*
Special Requirements	*<Any system related special requirements needed to fulfill the use case>*

UC-6	**Database management.**
Primary Actor(s)	Heads of department
Stakeholders and Interest	*<One sentence describing other stakeholders>*
Trigger	*<Condition/action that initiates/starts the use-case>*
Pre-conditions	*<Condition assumed to be true before the first step>*
Post-conditions	*<Condition after the use case is successfully executed >*
Main Success Scenario	1. *API for retrieving updates of space program* 2. API for *retrieving images and illustrations*
Extensions	If Condition, then Alternative Steps <List any extended steps/ scenarios that occur, other than the main success scenario.>
Priority	*<indicate priority of high, medium or low)*
Special Requirements	*<Any system related special requirements needed to fulfill the use case>*

3.1.3 Mock-up


Heading 1
BUTTON
BUTTON
BUTTON
BUTTON
Lorem ipsum
Cras justo odio, dapibus ac facilisis in, egestas eget qua
Lorem ipsum
Lorem ipsum
Cras justo odio, dapibus ac facilisis in, egestas eget qua
Cras justo odio, dapibus ac facilisis in, egestas eget quam
Cras justo odio, dapibus ac facilisis in, egestas eget quam
Cras justo odio, dapibus ac facilisis in, egestas eget quam
Cras justo odio, dapibus ac facilisis in, egestas eget quam
Cras justo odio, dapibus ac facilisis in, egestas eget quam
Cras justo odio, dapibus ac facilisis in, egestas eget quam
Cras justo odio, dapibus ac facilisis in, egestas eget quam
BUTTON

Heading 1

BUTTON BUTTON BUTTON BUTTON

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est non commodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec Duis mollis, est non commodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Cras justo odio, dapibus ac facilisis in, egestas eget c

Cras justo odio, dapibus ac facilisis in, egestas eget c

Cras justo odio, dapibus ac facilisis in, egestas eget q

Cras justo odio, dapibus ac facilisis in, egestas eget c

Cras justo odio, dapibus ac facilisis in, egestas eget c

Cras justo odio, dapibus ac facilisis in, egestas eget c

Cras justo odio, dapibus ac facilisis in, egestas eget q

Cras justo odio, dapibus ac facilisis in, egestas eget c

BUTTON

Heading 1

BUTTON BUTTON BUTTON BUTTON

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Nulla vitae elit libero, a pharetra augue. Vestibulum id ligula porta felis euismod semper. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit. Duis mollis, est noncommodo luctus, nisi erat porttitor ligula, eget lacinia odio sem nec elit.

Heading 1

BUTTON BUTTON BUTTON BUTTON

Lorem ipsum
Lorem ipsum
Lorem ipsum
Lorem ipsum

Lorem ipsum

Lorem ipsum

Lorem ipsum

Lorem ipsum

Lorem ipsum

Lorem ipsum

Lorem ipsum

3.1.4 Functional Requirements

Spec ID	Specification Description	Business Rules/ Data Dependency
FR001	Create a microsite for NASA to raise awareness about space program activity around the world.	*<Any validation rules or business rules>*
FR002	The site must be responsive, and function well on a variety of platforms.	
FR003	The site should appeal to a specific target audience	
FR004	Provided links to more information is required	
FR005	Provided live feeds of launces is required	
FR006	An HTML5 contact form with Javascript validation is required	
FR007	The site should be well-designed and easy to use, and conform to WCAG standards.	
FR008	A Git repository should be set up specifically for this project	

<Note: Section 3.1.4 and section 3.1.5 may be combined if there are a few functionalities on a particular page>

3.1.5 Field level specifications

Form Elements:

Call-out	Field Label	UI Control	Mand ?	Editable	Data Type	Value Set	Default Value	Data Example	Data Source
<mock-up reference >	*<Label name>*	*<specify what UI control will be on screen>*	*<specify if field is mandatory>*	*<specify if field is editable>*	*<Specify the data type that will be used for this field>*	*<If value is from the set, specify the entire value set here>*	*<Specify if it should be defaulted to any value>*	*<Provide an example of the data>*	*<Specify the source of the data>*
Example: Call-out 1	User name	textbox	Yes	Yes	Alpha-numeric	none	NA	John Doe	User entry
	identifier	textbox	Yes	Yes	Alpha-numeric/ Bianary character			Summer_19	User entry
	send	button	yes	yes	eventlistener				User entry
	Search	Input text	No	yes	Alpha-numeric		NA		Any page
	Menu	List (ul)	yes		Alpha-numeric				Any page

Form Business Rules and Dependencies:

Field Label	Validation / Business Rules	Error Messages	Data Dependencies	Additional Info/ Notes
First name	First name must meet the required criteria	*" Input does not match expected pattern "*		
Last name	Last name must meet the required criteria	*" Input does not match expected pattern "*		
Email address	Email address must meet the required criteria	*" Input does not match expected pattern "*		
Send	All required input fields must be filled before the user can send any message.	*"All required input fields must be filled"*		
Search		*"Sorry we couldn't find any result matching …"*		

4. System Configurations

5. Other System Requirements/ Non-Functional Requirements

<This section is used in contrast with stated functional requirements to highlight the additional details on the quality related aspects as well as other behavioral aspects of a system. This section is used to capture the stakeholders' implicit expectations about how well the system will work under a given circumstance. Here you can state the specific SLA's related to system response times (Data search and retrieval), Performance needs and metrics, Latencies in a particular timeframe or during high volume transactions,

Buttons, Links and Icons:

Button, Link, Icon Label	OnClick Event	Other Event	Visible	Enabled Vs Disabled	Navigate To	Validation	Dependencies
Image Links	A single mouse click leads	*OnMouseHover Hover effect,* Cursor pointer	*Yes, always*	*Enabled,*	To another page		
Links	A single mouse click leads	*OnMouseHover Hover effect,* Cursor pointer	*Yes, always*	*Enabled,*	To another page		
Logo	A single mouse	*OnMouseHover* Cursor pointer	*Yes, always*	enable	Home index page		
Scroll Back To Top Button	A single mouse click	*OnMouseHover Hover effect,* Cursor pointer			Back to top		

6. Reporting Requirements

<This section is used to capture the reporting needs, including but not limited to the scope and format of the report, data elements and contents required on the report, file types and extraction mechanisms, user base and accessibility levels, frequency of report extractions etc. Also provide the mock up of the report if needed. If necessary, create a separate document for reporting requirements.>

7. Integration Requirements

<Identify the integration needs and state all required interfaces with anything external to this solution including hardware, software, and users. Include Architectural overview diagrams, high level data flow diagrams, table structures and schema, interface protocols, API's, Error conditions, Error validations and messaging needs, Auto processing requirements etc. You can optionally state hardware and software dependencies, Upgrade requirements, compatibility issues with existing frameworks and solutions, etc>

(Data Flow Diagrams, Interface Diagrams – if necessary)

7.1 Exception Handling/ Error Reporting

<This is where you can explain the error conditions/Exceptions that normally happen in Interfaces or cross flow system integrations. Explain the nature of exception, Error Id, Root cause of the error and also the strategy to handle the scenario. You can also indicate if there are any concurrent programs designed to automatically handle the error records or error conditions. State if there are any error reports generated or notifications utilized to alarm the support teams and system Administrators during the interface failures or outages>

Exception/ Error ID	Error	Cause	Solution Strategy

8. Data Migration/ Conversion Requirements

<Explain in brief the data conversion plan. Provide full identifying information for the automated system, application, or situation for which the Data Conversion Plan applies. Describe briefly any assumptions, constraints or risks regarding the data conversion effort. (Provide details in section 1.6)>

8.1 Data Conversion Strategy

<Include the overall strategy for the Data Conversion. This includes how and when you will perform the conversion - the approach used to extract, transform and load data during the conversion process, the conversion schedule, and test plan for testing the converted data.>

8.2 Data Conversion Preparation

<Provide details on any prerequisites necessary for the conversion. Discuss the backup strategy, restoration process in case the conversion fails.>

8.3 Data Conversion Specifications

Source	Source Data Element	Target	Target Data Element	Conversion Rules	Notes
<Source location>	*<Source Data Element Identifier >*	*<Target location>*	*<Target Data Element Identifier>*	*<Describe rules for Data conversion>*	*<Additional notes>*

9. References

<List all references to external material used as background information or knowledge for the FSD. Examples may include a compliancy website, Stanford website, etc>

10. Open Issues

Issue ID	Issue	Raised By	Raised On	Solution/ Decision	Resolved By	Resolved On	Status

Appendix

Phase Title	Activity Title	Activity Description	Activity Sequence
List the phase that the Activity corresponds to.	*List the title of each Activity.*	*Describe the purpose and outcomes of each Activity.*	*Number each Activity in sequence.*
Planning	**Create a Project Plan**	Defining the Work Breakdown Structure	1
	Create Milestones	Check how the project is progressing	2
	Identifying the Required Resources	Construct a Resource Plan	3
	Constructing a Project Schedule	Create a Gantt chart with milestones, activities, durations etc.	4
	Dependencies	Identify any key dependencies in the Project Schedule	5
	Identifying the Critical Path and Critical Tasks	Figure out if any tasks delay the whole project	6
	Modifying a Project Schedule		7
Systems Analysis and Requirements	**Get Oriented**		8
	Discover the Primary Business Objectives		9
	Define Scope		10
	Formulate Your Business Analysis Plan	Create Functional Specification Document	11
	Define the Detailed Requirements	Create Functional Specification Document	12
	Support the Technical Implementation	Create Functional Specification Document	13
	Help the Business Implement the Solution	Create Functional Specification Document	14
	Assess Value Created by the Solution	Create Functional Specification Document	15
User Experience	**Find out who the target audience are**		16
	Make research	Study different Microsites	17
	Create personas	Based on potential painpoints, user goals	18
	Choose relevant API	Choose relevant material	19
UX/ UI	**Wireframe**	Create wireframes	20
Design	**Prototype**	Include UI elements, colors and typography	21
			22
Programming	**Create HTML layouts**	Follow the sematcs rules and create a structure	23
	Write all the CSS base content	Choose, font size, font -weight, colors, background, icons etc…	24
	Create CSS responsive layout	Create CSS responcive tables	25
	Create CSS modules	Create common reusable modules like boxes, navigations, and other child elements etc…	26
	Fetch information content from API	Use the fetch method to extract material for each Microsite page	27
	Manipulate with the DOM	Create Elements and append children with JS to the HTML modules	28
Integration and Testing	**Test Analysis Approval Determination**	summarizes the system's perceived readiness and is attached to the Test Analysis Report as a final result of the test reviews.	29
	Test Problem Reports	document problems encountered during testing; are also attached to the Test Analysis Report.	30
	Information Technology Systems Certification & Accreditation	includes completion of a Security Risk Assessment, Sensitive System Security Plan, Security Operating Procedures, Security Test and Evaluation, and Certification	31
Implementation	**Complete System**	includes all code – modules, components, and libraries – kept in the production version of the data repository.	32
	System Documentation	includes all technical documentation delivered during the project (e.g. the SDD and System Administration Manual).	33
	Version Description Document	primary configuration control document used to track and control versions of a system released to the operational environment. It also summarizes features and contents for the build and identifies and describes the version delivered.	34
	Post-Implementation Review Report	summarizes the assessment of Implementation activities at the end of the Implementation Phase	35
	Standard Operating Procedures	defines in detail how the Systems Team will perform the business processes related to the operations and maintenance of the system.	36
Operations and Maintenance	**Standard Operating Procedures (Updated)**		37
	Implementation Notice	formally requests approval for system changes made during the Implementation Phase.	38
	In-Process Review Report	formally reports the health of the system. It includes summary of performance reports but is more formalized and usually developed quarterly.	39
	User Satisfaction Review	determines the current user satisfaction with the performance capabilities of the system.	40
Report	**Introduction/Interpretation of the assignment**		42
	Planning, functional spec, Gantt chart		43
	Target audience/research		44
	Graphic design: design principles, typography, color		45

PLAN

DESIGN

BUILD

BUILD

TEST/LAUNCH

REPORT

Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 | Day 13 | Day 14 | Day 15 | Day 16 | Day 17 | Day 18 | Day 19 | Day 20 | Day 21 | Day 22 | Day 23 | Day 24 | Day 25 | Day 26 | Day 27 | Day 28 | Day 29 | Day 30

Jørgen	Create Project Plan
Jørgen	Identify the key dependencies and goals
Jørgen	Identifying the Required Resources
Jørgen	Constructing a Project Schedule
Jørgen	Create Milestones
Jørgen	Identifying the Critical Path and Critical Tasks
Jørgen	Modify the Project Schedule
Jørgen	Create Functional Specification Document
Jørgen	Find the target audience
Jørgen	Make research on Microsites
Jørgen	Create Personas
Jørgen	Choose relevant API
Jørgen	Create wireframes
Jørgen	Create color color pallette
Jørgen	Select typography
Jørgen	Select UI elements
Jørgen	Create Prototypes
Jørgen	Create HTML layouts
Jørgen	Write CSS base content
Jørgen	Create CSS responsive layout
Jørgen	Create HTML Modules and justify with CSS
Jørgen	Fetch content from API's
Jørgen	Create Elements with JS to the HTML modules
Jørgen	Append children to the elements using JS
Jørgen	Modify the pages with CSS
Jørgen	Using various tools check if SEO / Content Strategy / WCAG is achieved
Jørgen	Test the mobile friendliness
Jørgen	Make adjustments
Jørgen	Write the report