HealthFirst Care Capstone – Instructions

This document consolidates the instructions from ten separate hands-on labs in the HealthFirst Care capstone project. It summarizes the required pre-tasks, data sources, tools, tasks, and deliverables for each lab. Duplicate information has been removed and common themes are highlighted to provide a clear overview of the project requirements.

General Guidance

Across all labs you should:

- Create a **new Word document** with the specified file name for each lab (e.g., `Capstone_Project_M01L01_BRD.doc`) and save your work.
- Review and leverage the documents created in previous labs (BRD, RTM, Stakeholder Analysis & Engagement Plan, Process Models, etc.) to ensure consistency and traceability.
- Use **MS Excel** (or another spreadsheet tool) for data analysis and for building matrices and registers; use **Word or Google Docs** for written reports; and use **Lucidchart/Visio** for diagrams and process models.

- When exploring the provided data files (`appointment_data.csv`, `feedback_data.csv`, `resource_data.csv`), download them locally and analyze them in Excel.

- Organize all documents professionally, clearly label sections, and ensure alignment with project goals and stakeholder needs.

Lab Requirements

Lab 1 – Create a Business Requirements Document (BRD)

Objective: Document the business needs of HealthFirst Care, focusing on long wait times, resource allocation inefficiencies, and communication gaps.

Pre-Task Setup:

- Create and save `Capstone_Project_M01L01_BRD.doc`.
- Create the **BRD template** and the **Stakeholder Profile document** modules.
- Familiarize yourself with the project overview and goals.

Tasks:

1. **Understand the project context** – identify the core challenges from the project overview.
2. **Analyze stakeholder profiles** – extract specific requirements for patients, clinicians, administrative staff and IT.

3. **Document business requirements** – populate the BRD template with a problem statement, key requirements (e.g., automate scheduling), constraints (e.g., budget limits) and acceptance criteria (e.g., reduce average wait times by 20 %).
4. **Analyze provided data** – use Excel to explore the appointment, feedback and resource data to find patterns that support your requirements. Include screenshots of analyses in the BRD.

Deliverable: A complete BRD document that outlines project objectives, scope, stakeholders and requirements, accompanied by data analysis screenshots.

Lab 2 – Develop a Requirements Traceability Matrix (RTM)

Objective: Track functional and non-functional requirements throughout the project lifecycle using a structured matrix.

Pre-Task Setup:

- Create and save `Capstone_Project_M01L02_RTM.doc`.
- Review your BRD and the Stakeholder Profiles document.
- Examine the provided RTM template.

Tasks:

1. **Understand the project context** – revisit the BRD to ensure alignment with stakeholder roles and core challenges.
2. **Categorize requirements** – classify each requirement as functional or non-functional; apply the **MoSCoW** prioritization (Must-have, Should-have, Could-have, Won't-have).
3. **Develop the RTM** – in Excel, populate columns such as Requirement ID, Description, Priority Level, Stakeholder(s), Project Objective, Related Data File and Status. Link each requirement back to project goals and data insights.
4. **Analyze data files** – validate requirements against the appointment, feedback and resource datasets; note evidence supporting each requirement.
5. **Validate the RTM** – ensure completeness and consistency with the BRD and stakeholder priorities.

Deliverable: A comprehensive RTM document mapping requirements to objectives, stakeholders and data evidence, along with a checklist confirming prioritization and traceability.

Lab 3 – Create a Stakeholder Analysis and Engagement Plan

Objective: Identify and categorize stakeholders, assess their influence and interest, and define tailored engagement strategies.

Pre-Task Setup:

- Create and save `Capstone_Project_M02L01_Stakeholder_Analysis.doc`.
- Review your BRD and RTM, and the Stakeholder Profiles document.

Tasks:

1. **Identify stakeholders** – compile a comprehensive list of stakeholder groups (patients, doctors/nurses, administrative staff, IT teams, hospital leadership) using the BRD and stakeholder profiles.
2. **Analyze influence and interest** – use a stakeholder matrix to map each group: Key Players (high influence/high interest), Keep Satisfied (high influence/low interest), Keep Informed (low influence/high interest), and Monitor (low influence/low interest). Record roles, influence and interest levels.
3. **Develop the engagement plan** – define communication methods, purpose and frequency for each category (e.g., weekly meetings for Key Players, monthly newsletters for Keep Informed). Ensure alignment with project objectives.
4. **Document findings** – compile your stakeholder identification, matrix and engagement strategies into the Word document. Include stakeholder profiles and the completed matrix as appendices.

Deliverable: A Stakeholder Analysis and Engagement Plan detailing stakeholder categories, their influence and interest, communication strategies and a completed stakeholder matrix.

Lab 4 – Create a Project Scope Management Plan with WBS

Objective: Define project scope clearly, create a Work Breakdown Structure (WBS), and establish a plan for managing scope changes.

Pre-Task Setup:

- Create and save `Capstone_Project_M02L02_Scope_Management.doc`.
- Review the BRD, RTM and Stakeholder Engagement Plan.
- Familiarize yourself with the WBS template.

Tasks:

1. **Draft the scope statement** – describe objectives (e.g., reduce wait times), in-scope activities (automated scheduling, resource dashboards, notification systems), out-of-scope activities (construction projects, hiring extra clinical staff), constraints (budget, timeline, compliance) and assumptions (stakeholder availability, data accuracy).
2. **Develop the WBS** – break the project into hierarchical tasks and sub-tasks (e.g., 1.1 Requirements Gathering → 1.1.1 Conduct stakeholder interviews, 1.1.2 Analyze appointment data). Identify milestones such as BRD completion and stakeholder sign-off. Create a clear WBS diagram in Excel.
3. **Define the scope management plan** – document how scope changes will be submitted, reviewed and approved; specify approval criteria and assign roles for change control. Describe how scope will be monitored and validated against the BRD and RTM.

Deliverable: A Project Scope Management Plan containing the scope statement, a hierarchical WBS (with milestones) and a scope change control process.

Lab 5 – Create a Process Model Using Lucidchart

Objective: Build visual process models to analyze current workflows and propose optimized future workflows.

Pre-Task Setup:

- Create and save `Capstone_Project_M03L01_Process_Model.doc`.
- Review stakeholder profiles, the BRD, RTM and Engagement Plan.
- Set up or log into **Lucidchart**, MS Visio or Draw.io.

Tasks:

1. **Analyze current processes** – review data and stakeholder feedback to identify bottlenecks in scheduling, patient check-ins and inter-departmental communication.
2. **Create** As-Is** process models** – using Lucidchart, diagram the existing appointment scheduling, patient check-in and communication workflows. Highlight bottlenecks and inefficiencies (e.g., manual booking, duplicated paperwork, no conflict detection). Save the diagrams as PDF or JPG.
3. **Design** To-Be** process models** – propose optimized workflows incorporating automated scheduling, self-service check-in kiosks, real-time conflict detection and improved communication systems. Build these diagrams in Lucidchart and save them.
4. **Document findings** – summarize the issues identified in the As-Is models, explain the rationale behind the To-Be solutions and discuss anticipated benefits. Attach both sets of process models to your report.

Deliverable: A Process Model document summarizing current challenges and proposed optimizations, accompanied by As-Is and To-Be process model diagrams.

Lab 6 – Create Detailed Process Maps Using Swimlane Diagrams

Objective: Map complex, multi-stakeholder workflows using advanced BPMN elements and swimlane diagrams to clarify roles and identify improvements.

Pre-Task Setup:

- Create and save `Capstone_Project_M03L02_Swimlane_Diagrams.doc`.
- Review all prior deliverables (BRD, RTM, Stakeholder Analysis, Process Models).
- Prepare to use Lucidchart or Visio with familiarity of BPMN symbols (tasks, gateways, subprocesses, events).

Tasks:

1. **Analyze complex workflows** – choose processes involving multiple roles, such as appointment scheduling and confirmation, patient check-in and resource allocation, and discharge planning. Identify handoff points, bottlenecks and unclear role ownership.

2. **Design advanced BPMN diagrams** – map workflows using BPMN elements like tasks, gateways ("Is the preferred slot available?"), subprocesses (e.g., "Generate discharge summary") and event triggers. Save diagrams in PDF or JPG.
3. **Create swimlane diagrams** – build a separate swimlane diagram for each workflow, with each lane representing a role (patient, admin staff, IT, nurses, doctors). Assign tasks to the appropriate lanes and highlight delays caused by handoffs or manual steps. Save diagrams.
4. **Document findings** – explain the challenges discovered, propose improvements based on the diagrams and describe expected benefits. Include screenshots of both BPMN and swimlane diagrams in the report.

Deliverable: A report containing detailed process maps, advanced BPMN and swimlane diagrams, and a discussion of identified inefficiencies and improvements.

Lab 7 – Data Cleaning, Manipulation and Analysis Using Excel

Objective: Clean, merge and analyze operational datasets to uncover trends that inform decision-making.

Pre-Task Setup:

- Create and save `Capstone_Project_M04L01_Data_Analysis.doc`.
- Load the data files (`appointment_data.csv`, `feedback_data.csv`, `resource_data.csv`) into Excel.

Tasks:

1. **Data cleaning** – remove duplicates, standardize date and time formats, handle missing values (replace missing scores with the column average; use "N/A" for other missing text) and save the cleaned datasets as `Cleaned_Appointment`, `Cleaned_Feedback` and `Cleaned_Resource` sheets.
2. **Data manipulation** – use VLOOKUP or INDEX-MATCH to merge feedback scores into appointment records by Patient ID; create a "Satisfaction Level" column based on feedback score (≥4 = High, <4 = Low); build pivot tables to analyze appointments per department and hour, satisfaction levels by department, and average resource utilization.
3. **Trend identification** – identify the busiest appointment times/days, departments with the highest and lowest satisfaction, and areas of under- or over-utilized resources; visualize these insights with appropriate charts (line, bar or column charts).

Deliverable: A data analysis report summarizing key findings and including charts, pivot tables and the cleaned datasets. Provide an Excel workbook with the cleaned data and pivot tables.

Lab 8 – Creating Dashboards in Cognos/Looker

Objective: Build an interactive dashboard in IBM Cognos Analytics or Google Looker to visualize performance metrics and support decision-making.

Pre-Task Setup:

- Create and save `Capstone_Project_M04L02_Dashboard_Insights.doc`.
- Review insights from cleaned datasets and previous trend analyses.
- Ensure you have access to Cognos or Looker.

Tasks:

1. **Design the dashboard layout** – divide the dashboard into sections: a high-level overview of metrics, trend analyses and departmental insights. Choose appropriate visualizations: line chart (wait times over time), bar chart (resource utilization by department), heatmap (resource performance), and pie chart (satisfaction levels). Include filters for departments, dates and resources.
2. **Build the dashboard** – import the cleaned appointments, feedback and resources datasets; create the visualizations (line, bar, heatmap, pie) as planned; arrange the components (top: line chart; middle: bar chart and heatmap; bottom: pie chart); test interactivity and cross-check results against the data in Excel.
3. **Test and refine** – validate accuracy, refine the layout and interactions, and export the completed dashboard as a PDF.

Deliverable: A document describing the datasets used, the dashboard design process and key insights, along with the exported dashboard (PDF) showing the charts and filters.

Lab 9 – Creating a Risk Register and Conducting a SWOT Analysis

Objective: Identify and document project risks, assess their severity, and perform a strategic SWOT analysis to inform risk management.

Pre-Task Setup:

- Create and save `Capstone_Project_M05L01_Risk_Register_SWOT.doc`.
- Review the BRD, RTM, stakeholder analysis, process models and dashboard insights.

Tasks:

1. **Identify risks** – analyze workflows, resource allocation and feedback trends to identify operational, technical and stakeholder risks. Categorize risks (e.g., workflow disruptions, data breaches, poor adoption). Enter each risk into a risk register with columns for Risk ID, description, category, likelihood, impact, severity (likelihood × impact) and proposed mitigation strategy.
2. **Assess risks using a Risk Assessment Matrix** – design a 3×3 matrix (Likelihood vs Impact) to prioritize risks; categorize severity (High = red, Medium = yellow, Low = green) and focus on high-severity items.

3. **Conduct a SWOT analysis** – identify the project's strengths (e.g., strong leadership), weaknesses (manual workflows, data silos), opportunities (automation, training) and threats (data breaches, stakeholder resistance). Document your findings.

Deliverable: A Risk Management Plan document containing the risk register, risk assessment matrix and a SWOT analysis, along with mitigation strategies and priorities.

Lab 10 – Developing a Risk Matrix and Mitigation Strategies

Objective: Develop specific mitigation strategies and contingency plans for high-priority risks identified in the Risk Register.

Pre-Task Setup:

- Create and save `Capstone_Project_M05L02_Risk_Matrix_Mitigation.doc`.
- Focus on the highest-severity risks from the risk register and SWOT analysis.

Tasks:

1. **Propose mitigation strategies** – for each high-priority risk (e.g., data breaches, staff resistance, system integration delays), propose actionable strategies such as security audits and encryption protocols, comprehensive training programs and allocated buffer time with pre-deployment testing. Update the risk matrix with a column for mitigation strategies.
2. **Document contingency plans** – outline steps to follow if a risk materializes despite mitigation efforts. For example, in case of a data breach, isolate affected systems, notify IT and perform a root-cause analysis; in case of persistent staff resistance, appoint champions and provide additional training.
3. **Update the Risk Mitigation Plan** – compile the updated risk matrix and contingency plans into a cohesive plan. Ensure alignment with project goals and stakeholder expectations.

Deliverable: A Risk Mitigation Plan document containing the updated risk matrix, mitigation strategies and contingency plans for high-priority risks.

Summary Table of Deliverables

The table below lists the primary deliverable(s) from each lab and the software recommended to produce them. Longer explanations of tasks and analyses should appear in the body of your documents rather than in tables.

Lab	Key Deliverable(s)	Recommended Tools
1 – BRD	Business Requirements Document; data analysis screenshots	Word/Google Docs, Excel
2 – RTM	Requirements Traceability Matrix with prioritization; data analysis notes	Excel, Word
3 – Stakeholder Analysis	Stakeholder identification, matrix and engagement plan	Excel (matrix), Word

4 – Scope Management & WBS	Scope statement, hierarchical WBS diagram, scope change plan	Word, Excel
5 – Process Models	As-Is and To-Be process diagrams; analysis summary	Lucidchart/Visio, Word
6 – Swimlane & BPMN	BPMN and swimlane diagrams; process improvement report	Lucidchart/Visio, Word
7 – Data Analysis	Cleaned datasets; pivot tables and charts; analysis report	Excel, Word
8 – Dashboard	Interactive dashboard (exported to PDF); design and insights report	Cognos/Looker, Excel, Word
9 – Risk Register & SWOT	Risk register; risk assessment matrix; SWOT analysis	Excel, Word
10 – Risk Matrix & Mitigation	Updated risk matrix with mitigation and contingency plans	Excel, Word