



# SMART BRIDGE INTERNSHIP

## Intelligent Customer Help Desk with Smart Document Understanding

Category: Artificial Intelligence

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### WEEK 1

#### 1. Project Planning & Kickoff

- a. Project Scope, Schedule, Team & Deliverables
  - i. Project Kickoff Template
  - ii. How to Kickoff a Project
- b. Setup the Development Environment
  - i. Create a GitHub Account
  - ii. What is GitHub
  - iii. What is Slack
  - iv. Install Slack & Create Account
  - v. Work with Document Writer

### WEEK 2

#### 2. Explore IBM Cloud Platform

- a. Create IBM Cloud Account
  - i. Sign-up for IBM Academic Initiative Account
  - ii. Sign-up for IBM Cloud
  - iii. Getting Started with IBM Cloud
- b. Create a Node-RED Starter Application
  - i. Node-RED Starter Tutorial
  - ii. What is Node-RED?
  - iii. Learn More with Node-RED Labs
  - iv. What is an API
  - v. Create a simple webpage

### WEEK 3

#### 3. Explore IBM Watson Services

- a. Explore IBM Watson Usecases
  - i. Watson Products & Services
  - ii. Watson at Work
- b. Introduction to Watson Assistance
  - i. Build Your Own AI Assistant (Chatbot) with IBM Watson Assistant
  - ii. IBM Cloud: How to Use Watson Assistant with Webhooks

- iii. Learning Path Watson Assistant
- iv. IBM Watson Assistant: Search Skill
- c. Introduction to Watson Discovery
  - i. Learning Path Watson Discovery
  - ii. Documentation
  - iii. Watson Discovery Chatbot - Reference
  - iv. Node-RED Labs: Watson Discovery
  - v. Xtract Answers From Large Document in 5 Minutes

## WEEK 4

### 4. Explore IBM Cloud Functions

- a. Getting Started with IBM Cloud Functions
  - i. Restful Web Services
  - ii. Getting started with Cloud Functions
  - iii. Getting Hands-on with IBM Cloud Functions
  - iv. What are RESTFUL Web Services?

## WEEK 5

### 5. Project Integration

- a. Create necessary IBM Cloud Services
- b. Configure Watson Discovery Service
- c. Create Cloud Functions Action
- d. Configure Watson Assistant
- e. Build Node-RED Flow to Integrate All Services
- f. Build a Web Dashboard
- g. Test the Bot & Capture the Results
- h. Prepare the Project Report & Upload the Node-RED Flow to GitHub
- i. Create a Project Demo Video & Upload to Youtube

## Project Description

The typical customer care chatbot can answer simple questions, such as store locations and hours, directions, and maybe even making appointments. When a question falls outside of the scope of the pre-determined question set, the option is typically to tell the customer the question isn't valid or offer to speak to a real person.

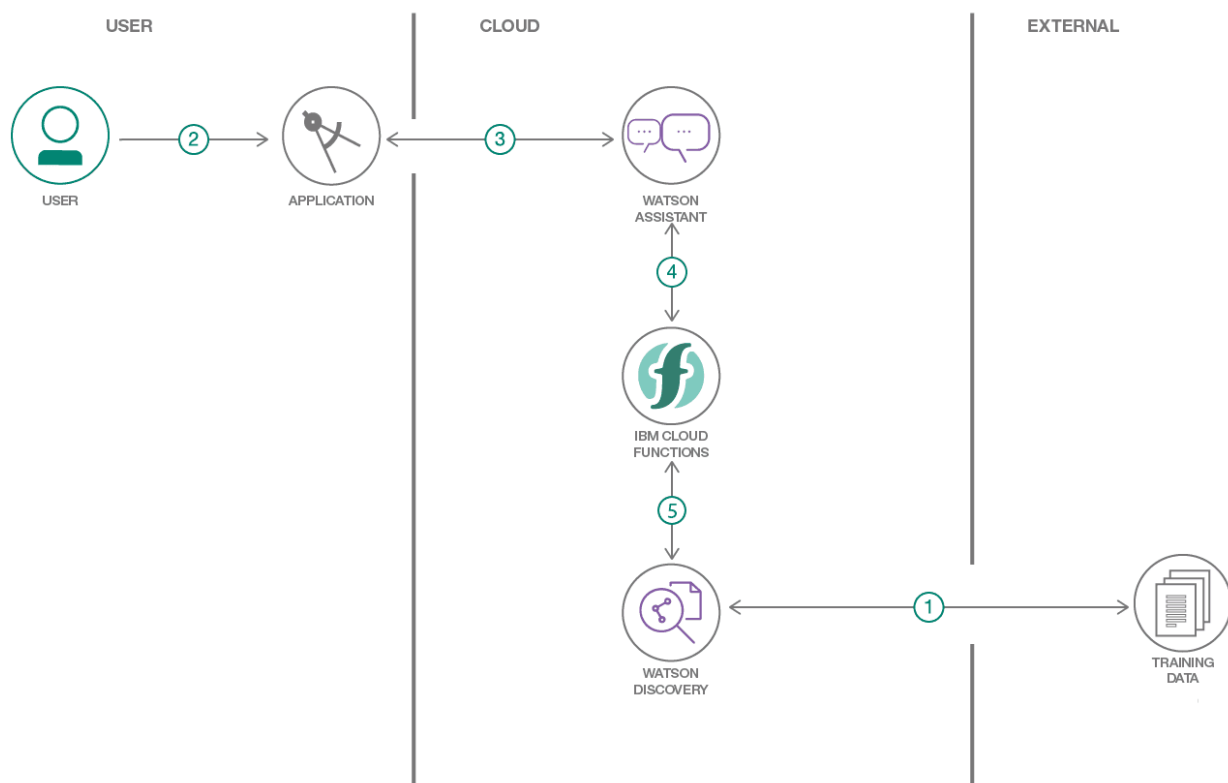
In this project, there will be another option. If the customer question is about the operation of a device, the application shall pass the question onto Watson Discovery Service, which has been pre-loaded with the device's owner manual. So now, instead of

“Would you like to speak to a customer representative?” we can return relevant sections of the owner’s manual to help solve our customers’ problems.

To take it a step further, the project shall use the Smart Document Understanding feature of Watson Discovery to train it on what text in the owner’s manual is important and what is not. This will improve the answers returned from the queries.

### Scope of Work

- Create a customer care dialog skill in Watson Assistant
- Use Smart Document Understanding to build an enhanced Watson Discovery collection
- Create an IBM Cloud Functions web action that allows Watson Assistant to post queries to Watson Discovery
- Build a web application with integration to all these services & deploy the same on IBM Cloud Platform



## WEEK 1: Project Planning & Kickoff

When you're given a new project it's tempting to rush off and start doing the work. There are things to buy, people to talk to and a huge task list to write. Right? Stop!

Before you get too far into the doing of the project you need to step back and plan the work. If you want to manage your project successfully you need a bigger picture view of everything that needs to happen and how it is going to get done. That's what project planning gives you. Yes, it slows down the start of the 'doing' but it saves you a ton of time later when you can whizz through the different steps knowing exactly what's coming next. Trust us, planning is invaluable!

### What is Project Planning?

Project planning refers to everything you do to set up your project for success. It's the process you go through to establish the steps required to define your project objectives, clarify the scope of what needs to be done, and develop the task list to do it.

#### a) Project Scope, Schedule, Team & Deliverables

Prepare Project Scope Document with following Headings

- Project Summary
- Project Requirements
- Functional Requirements
- Technical Requirements
- Software Requirements
- Project Deliverables
- Project Team
- Project Schedule

Project Kickoff Template

<https://www.allbusinesstemplates.com/download/?filecode=2KBA4&language=en&iuid=9f9faa69-9fab-40ee-8457-ea0e5df8c8de>

How to Kickoff a Project

[https://www.youtube.com/watch?v=LOCKV-mENq8&feature=emb\\_logo](https://www.youtube.com/watch?v=LOCKV-mENq8&feature=emb_logo)

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## b) Setup the Development Environment

The project development environment is very important for the successful execution of the project. You should have answers to below questions before starting your project

Where do you develop the code?

where do you save it?

how do you communicate with your team?

Where do you document your work?

How do you share deliverables with your client?

Utilize the integrations provided in SmartInternz Platform

1. Create your GitHub Account, Install GIT tool in your PC/Laptop
2. Create the Project Scope in the Document Writer
3. Install Slack App, Join your team to the Project Channel
4. Choose the right IDE for Coding, Install the same in your Laptop
5. Go through the Project Management Dashboard

- i. Create a GitHub Account  
<https://github.com/>
- ii. What is GitHub  
<https://www.youtube.com/embed/w3jLJU7DT5E>
- iii. What is Slack  
[https://www.youtube.com/watch?v=7YUTc4Cigc8&feature=emb\\_logo](https://www.youtube.com/watch?v=7YUTc4Cigc8&feature=emb_logo)
- iv. Install Slack & Create Account  
<https://slack.com/intl/en-in/>
- v. Work with Document Writer  
<https://www.zoho.com/writer/help/working-with-text.html>



## WEEK 2: Explore IBM Cloud Platform

### What is the IBM Cloud platform?

The IBM® cloud platform combines a platform as a service (PaaS) with infrastructure as a service (IaaS) to provide an integrated experience. The platform scales and supports both small development teams and organizations, and large enterprise businesses. Globally deployed across data centers around the world, the solution you build on IBM Cloud™ spins up fast and performs reliably in a tested and supported environment you can trust.

The platform is built to support your needs whether it's working only in the public cloud or taking advantage of a multi-cloud deployment model. With our open-source technologies, such as Kubernetes, Red Hat OpenShift, and a full range of compute options, including virtual machines, containers, bare metal, and serverless, you have as much control and flexibility as you need to support workloads in your hybrid environment. You can deploy cloud-native apps while also ensuring workload portability.

Whether you need to migrate apps to the cloud, modernize your existing apps by using cloud services, ensure data resiliency against regional failure, or leverage new paradigms and deployment topologies to innovate and build your cloud-native apps, the platform's open architecture is built to accommodate your use case.

<https://cloud.ibm.com/docs/overview?topic=overview-what-is-platform>

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#### a) Create IBM Cloud Account


You can sign up for an IBM Cloud™ account by using your existing IBMid or by creating a new IBMid. If your company is registered to use a federated ID for single sign-on (SSO), sign up with your federated ID instead.

#### Develop for free, no credit card required

Apps, AI, analytics, and more. Build with 40+ Lite plan services at no cost to you - ever.

#### Access the full catalog at your fingertips

Upgrade your account and unlock 190+ unique offerings, plus get a \$200 credit to use with any offer you want. If you have an institutional email ID with the College



domain, you can enjoy the benefits of the IBM Academic Initiative. Go through the links provided in References.

- i) Sign-up for IBM Academic Initiative Account  
<https://my15.digitalexperience.ibm.com/b73a5759-c6a6-4033-ab6b-d9d4f9a6d65b/dxsites/151914d1-03d2-48fe-97d9-d21166848e65/>
- ii) Sign-up for IBM Cloud  
<https://cloud.ibm.com/login>
- iii) Getting Started with IBM Cloud  
<https://www.ibm.com/cloud/get-started>

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b) Create a Node-RED Starter Application

Create a Node-RED Starter application running in the IBM Cloud  
Secure the application  
Customize the Node-RED Starter Kit by adding additional nodes  
Go through the Node-RED Starter Tutorial in References.

- i) Node-RED Starter Tutorial  
<https://developer.ibm.com/tutorials/how-to-create-a-node-red-starter-application/>
- ii) What is Node-RED?  
<https://nodered.org/>
- iii) Learn More with Node-RED Labs  
<https://github.com/watson-developer-cloud/node-red-labs>
- iv) What is an API  
[https://www.youtube.com/watch?v=s7wmiS2mSXY&feature=emb\\_logo](https://www.youtube.com/watch?v=s7wmiS2mSXY&feature=emb_logo)
- v) Create a simple webpage  
[https://www.w3schools.com/howto/howto\\_make\\_a\\_website.asp](https://www.w3schools.com/howto/howto_make_a_website.asp)

## WEEK 3: Explore IBM Watson Services

### IBM Watson Platform

Infuse Watson into your apps and workflows to tap into organizational data and put AI to work across multiple departments – from finance to customer care, to supply chain. With Watson, you can create better, more personalized experiences for customers, scale the expertise of your best people across the organization, and make smarter decisions based on deep insights from data.

IBM Watson - [https://www.youtube.com/watch?v=r7E1TJ1HtM0&feature=emb\\_logo](https://www.youtube.com/watch?v=r7E1TJ1HtM0&feature=emb_logo)

#### a) Explore IBM Watson Usecases

- i) Watson Products & Services  
<https://www.ibm.com/watson/products-services>
- ii) Watson at Work  
<https://www.youtube.com/embed/W3iPbFTAAds>

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#### b) Introduction to Watson Assistance

Watson Assistant is a conversation AI platform that helps you provide customers fast, straightforward, and accurate answers to their questions, across any application, device or channel. By addressing common customer inquiries, Watson Assistant reduces the cost of customer interactions, helping your agents focus on complex use cases – not repetitive responses.

<https://www.ibm.com/cloud/watson-assistant/>

- i) Build Your Own AI Assistant (Chatbot) with IBM Watson Assistant  
<https://www.youtube.com/watch?v=hitUOFNne14>
- ii) IBM Cloud: How to Use Watson Assistant with Webhooks  
<https://www.youtube.com/embed/5z3i5IsBVnk>
- iii) Learning Path Watson Assistant  
<https://developer.ibm.com/components/watson-assistant/series/learning-path-watson-assistant>
- iv) IBM Watson Assistant: Search Skill  
[https://www.youtube.com/embed/\\_UgRPaxipgl](https://www.youtube.com/embed/_UgRPaxipgl)



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### c) Introduction to Watson Discovery

With IBM Watson Discovery, you can ingest, normalize, enrich, and search your unstructured data (JSON, HTML, PDF, Word, and more) with speed and accuracy. It packages core Watson APIs such as Natural Language Understanding and Document Conversion along with UI tools that enable you to easily upload, enrich, and index large collections of private or public data.

- i) Learning Path Watson Discovery  
<https://developer.ibm.com/articles/introduction-watson-discovery/>
- ii) Documentation  
<https://cloud.ibm.com/docs/services/discovery?topic=discovery-getting-started>
- iii) Watson Discovery Chatbot - Reference  
<https://medium.com/@grimaibrahim/node-red-watson-discovery-chatbot-telegram-ce616ddcd0d9>
- iv) Node-RED Labs: Watson Discovery
- v) Xtract Answers From Large Document in 5 Minutes  
<https://www.youtube.com/embed/Jpr3wVH3FVA>

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## WEEK 4: Explore IBM Cloud Functions

IBM Cloud Functions is a distributed compute service that executes application logic in response to requests from the web or mobile apps. You can set up specific actions to occur based on HTTP-based API requests from web apps or mobile apps, and from event-based requests from services like Cloudant.

- a) Getting Started with IBM Cloud Functions
  - i) Restful Web Services  
<https://developer.ibm.com/technologies/web-development/articles/ws-restful>
  - ii) Getting started with Cloud Functions  
<https://cloud.ibm.com/docs/openwhisk?topic=cloud-functions-getting-started>
  - iii) Getting Hands-on with IBM Cloud Functions  
<https://www.youtube.com/embed/G3bqRndQtQg>
  - iv) What are RESTFUL Web Services?  
<https://www.youtube.com/embed/SLwpqD8n3d0>



## WEEK 5: Project Integration

- Create a customer care dialog skill in Watson Assistant
- Use Smart Document Understanding to build an enhanced Watson Discovery collection
- Create an IBM Cloud Functions web action that allows Watson Assistant to post queries to Watson Discovery

<https://developer.ibm.com/patterns/enhance-customer-help-desk-with-smart-document-understanding/>

Refer above link for understanding, the web application shall be built with Node-RED integrating all services.

- a) Create necessary IBM Cloud Services
- b) Configure Watson Discovery Service
- c) Create Cloud Functions Action
- d) Configure Watson Assistant
- e) Build Node-RED Flow to Integrate All Services
- f) Build a Web Dashboard
- g) Test the Bot & Capture the Results
- h) Prepare the Project Report & Upload the Node-RED Flow to GitHub
- i) Create a Project Demo Video & Upload to Youtube