

STP'22 | Engineering

Session	Web and Cloud
Activity Location	Ex: Co-working space (Ebda3)
Duration	180 minutes
Trainee Numbers	10-15 trainee
Prerequisites	HTML, CSS, some problem-solving skills
Short description	Session starts with introduction to the web and cloud, content of the whole sessions, the project that they will work on. The session's content starts then with an introduction to the python syntax and working on a basic login system. After a break, we start talking about the web and the HTTP protocol and apply simply get and post requests using postman
Learning objectives	<ul style="list-style-type: none">- Understand the web and cloud sessions as a whole- Understand python's syntax- Understand the concept of how the web work- Understand the concept of HTTP protocol- Understand the request response pair of the protocol
Necessary Materials	
Assessment method	
Background Paper/ information	
Participant Guide/ Hand outs (with References)	

Implementation procedures:

Slide Number & Title	Activity	Timings	Resources Required
Slide 1: Introduction	Introduce yourself and ask everyone to introduce themselves and share a fun fact	15 mins	
Slide 2: Quote	Live as if you were to die tomorrow. Learn as if you were to live forever	1 mins	
Slide 3: Overview	<ul style="list-style-type: none">- Python syntax- Networks and APIs- Flask and DBs- Docker- AWS- Project	3 mins	
Slide 4: Why are we here?	Set expectations. We are not here to be a great full stack web developer!	2 mins	
Slide 5: Project	Increase expectations. Walkthrough of the project and how we will work on it together	5 mins	
Slide 6: Content of this session	<ul style="list-style-type: none">- Python- Web and HTTP protocol	1 mins	
Slide 7-8: Why Python?	<p>Python is used everywhere but it is very widely used in two fields:</p> <ul style="list-style-type: none">- Web development- Data science <p>Python is so popular:</p> <ul style="list-style-type: none">- Support of the community, libraries <p>Python is used to build popular sites:</p> <ul style="list-style-type: none">- Instagram <p>Instagram currently features the world's largest deployment of the Django web framework, written entirely in Python.</p> <ul style="list-style-type: none">- Google <p>"Python where we can, C++ where we must."</p> <ul style="list-style-type: none">- Spotify <p>80% of these services are written in Python.</p> <ul style="list-style-type: none">- Netflix- Uber- Dropbox	5 mins	

Slide 9: Variables	Python handles datatypes dynamically. That means no need to explicitly declare a datatype Container	5 mins	Jupiter notebook
Slide 10: Need Different Styles for Different Situations	Container of containers	3 mins	Jupiter notebook
Slide 11: loops and if conditions	Explain that no one style is the best	3 mins	Jupiter notebook
Slide 12: lets build a login system		5 mins	Jupiter notebook
Slide 13: dictionary	Change the login app to the data from the dictionary	5 mins	Jupiter notebook
Slide 14: functions	Refactor code into functions	5 mins	Jupiter notebook
	Import math library	5 mins	Jupiter notebook
BREAK	BREAKKKK	30 mins	
Slide 15-18: Web and http	THINK TANK <ul style="list-style-type: none"> - How does the web work - What is http 	5 mins	
Slide 19: what is http	We are saying hypertext transfer protocol What is protocol? What is hypertext? <ul style="list-style-type: none"> - In this context, protocol is a set of rules allow communication of information between different devices. - Hypertext is text which is displayed on a screen which references another hypertext In a sentence: protocol used by web servers to transfer web documents. That's why every URL u type starts with http	3 mins	
Slide 20-21: concept 1	HTTP is plain language and human readable.	1 min	
Slide 22: concept 2	HTTP is stateless. It doesn't have memory of users. If you go to a gallery website and show the first photo and then refresh. It will show the first photo.	1 min	

Slide 23: concept 3	HTTP works in a request/response pair. Any http starts with a request using one of the methods and ends with a response with a status and data	1 min	
Demo of http flow	Librarian example	2 mins	Paper with request and books
Demo using postman		10 mins	Postman and a link to resource