

University of Stuttgart
Germany

The background of the slide is a photograph of a river with white-water rapids. On the right bank, there is a concrete dam or weir structure with a staircase leading up to it. The surrounding area is rocky and has some greenery and buildings in the distance.

GUI using Python for extrapolation of a Hydrograph

WAREM – WS 2021/2022

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GUI using Python for extrapolation of a Hydrograph

Introduction to the Project idea

Introduction to the Project idea

Retrieval of Discharge data from Gauging stations (e.g., from Germany)

Sorting and Analyzing the data in hand and plotting the Hydrograph

To extrapolate return periods beyond the length of the observation period using Gumbel distributed-extrapolation as the prediction model

Extrapolating for flood events such as 50-, 100-, 200-, 500-, and 1000-year floods

Designing a GUI for the prediction model to display the results

GUI using Python for extrapolation of a Hydrograph

Problem Statements

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Implementation of the prediction model
(Gumbel distribution)



Reusability of Classes, Functions
Integration of main, and standalone script
with GUI

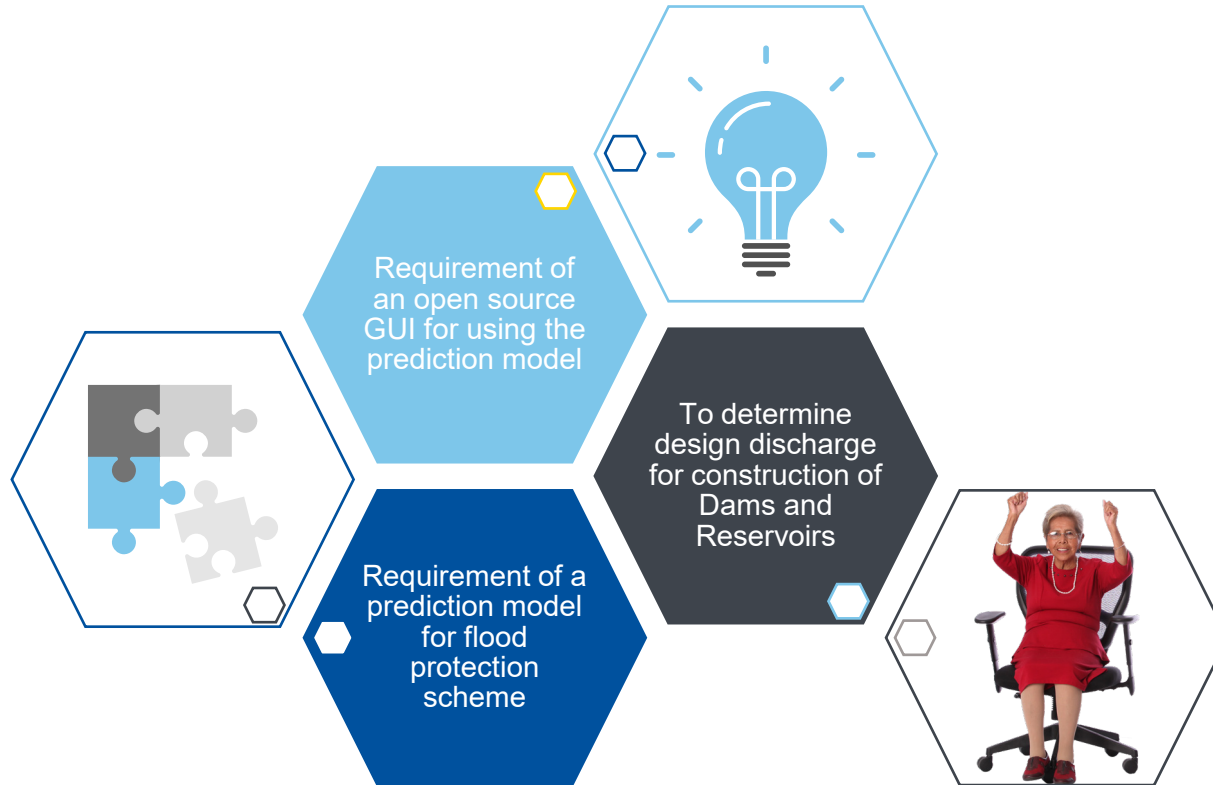


Concise Structure and simplicity of the
code

GUI using Python for extrapolation of a Hydrograph

Goal of the Program to be developed

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GUI using Python for extrapolation of a Hydrograph

Timeline for developing the Program

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Week-1 Jan

- Retrieval and analysis of Data
- Basic Program structure

Week-2 Jan

- Sorting and Analyzing the data
- Understanding and implementing Gumbel Distribution

Week-3&4 Jan

- Writing scripts for plotting function, GUI, UML Diagrams
- Implementation of Global parameters

Week-1 Feb

- Creation of Custom Python Class and Objects
- Structured README Documentation
- Reformatting the Standalone script
- Final version of Presentation

Week-2 Feb

- Final Integration of Auxiliary Components
- Compliance of PEP-8 Style
- Optional components – “Wiki/ web Docs”, “Python Package”

GUI using Python for extrapolation of a Hydrograph

Resource Allocation

Resource Allocation



Aswath

- Structure of GUI
- Structure and PEP-8 Styling
- Customs Class
- README Wiki/ web Docs



Akash

- Functions (Plot, Data Handling)
- Gumbel Distribution
- GUI implementation



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Thank you!