Organic Concept Map

Hydrocarbons

- Aliphatic
  - Alkanes
    - General Formula: \( C_nH_{2n+2} \)
    - E.g.: Cycloalkanes, Cycloalkenes
      - Bonded By: \( sp^3 \) Hybridization
      - Said to be saturated, undergo substitution reactions
      - Chain Reaction: Under UV light
      - \( CH_4 + Cl_2 \rightarrow CH_3Cl + HCl \)
  - Cyclic Aliphatic
  - Aromatics
    - Aromatic Hydrocarbons
    - Bonded by \( sp^2 \) hybridization but possess resonance
    - Ex. pyridine
  - Alkynes
    - General Formula: \( C_nH_{2n-2} \)
    - Bonded By \( sp \) Hybridization
    - Undergo substitution reactions

- Hydrocarbon Derivatives
  - Alcohols
  - Esters
  - Amines
  - Amino Acids

- Benzene Ring Structure (Contains O, N, S, P in the ring)

- Heterocyclic
  - By means of Electrophilic Substitution Under UV light
  - \( C_6H_6 + Br_2 \rightarrow C_6H_5Br + HBr \)

- Electrophilic Addition @ room temp
  - \( CH_2CH_2 + Br_2 \rightarrow CH_3BrCH_2Br + HBr \)