

WARSAW UNIVERSITY OF TECHNOLOGY



# **Programming in Logic and Symbolic Programming**

## **Expert System**

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# 1 Project Description

## 1.1 Nature of the task

The expert system identifies a given mental illness or disability using rules and facts. Identification is done by asking questions to which the user can answer with "yes" or "no" or, where required, a full answer is given by being given a menu of possible answers.

## 1.2 Structure and content of the task

The expert system identifies mental disorders. There are 10 possible mental disorders, which are classified into **4 types**: • Eating disorder • Neurodevelopmental disorder • Psychotic disorder • Genetic disorder

Eating disorder type, meets criteria

- mentality: strong desire to be thin
- symptom: abnormal eating habits

Type Neurodevelopmental disorder, meets criteria

- condition: affected nervous system
- cause: genetic predisposition or influence of the environment (genetic and environmental)
- brain function: abnormal

Type Psychotic disorder, meets criteria

- mentality: manic and depressive
- symptom: belief in things that are not real (false beliefs)
- cause: genetic factors or environmental influence (genetic and environmental)

Type Genetic disorder, meets the criteria

- cause(cause): abnormalities in the genome(abnormalities in genome)

### MENTAL DISORDERS

- Anorexia nervosa - type(eating disorder), consequence(low weight), food amount(food restriction).
- Bulimia Nervosa - type(eating disorder), consequence(purging), food amount(binge eating).
- Asperger syndrome - type(neurodevelopmental disorder), specialty(psychiatry), social skill(low), behavior(repetitive and restricted).
- Dyslexia - type(neurodevelopmental disorder), specialty(psychiatry), social skill(low), behavior(repetitive and restricted).
- Autism - type(neurodevelopmental disorder), social skill(low), symptom(impaired communication).
- Tourette's syndrome - type(neurodevelopmental disorder), social skill(normal), specialty(neurology), symptom(motor tics).
- Bipolar disorder - type(psychotic disorder), indication(elevated moods).
- Schizophrenia - type(psychotic disorder), indication(hallucinations).
- Down syndrome - type(genetic disorder), symptom(delayed physical growth), Face features(long and narrow), ears features(large), brain function(intellectual disability).
- Fragile X syndrome - type(genetic disorder), face features(small chin and slanted eyes), brain function(intellectual disability).